NEW WASTEWATER TREATMENT PLANT MODIFIED PROJECT ADDENDUM

DRAFT ADDENDUM

SEPTEMBER 2025

PREPARED FOR:

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ACRONYMS AND ABBREVIATIONS

AB ..... Assembly Bill
AF ..... Acre Feet
AFY ..... Acre Feet per Year
AFV ..... alternative fuel vehicles
AICUZ ..... Air Installation Compatible Use Zone
APE ..... Area of Potential Effect
ARD ..... Aquatic Resources Delineation
bgs ..... below ground surface
BMP ..... Best Management Practices
BSC ..... Building Standards Commission
CAA ..... (federal) Clean Air Act
CAFE ..... Corporate Average Fuel Economy
CAL FIRE ..... California Department of Forestry and Fire Protection
CARB ..... California Air Resources Board
CBC ..... California Building Code
CDFW ..... California Department of Fish and Wildlife
CEC ..... California Energy Commission
CEQA ..... California Environmental Quality Act
CFC ..... Chlorofluorocarbon
CH_4 ..... Methane
City ..... City of Ridgecrest
CLFD ..... China Lake Fire Department
CLUMP ..... China Lake Comprehensive Land Use Management Plan
CNDDB ..... California Natural Diversity Database
CNPS ..... California Native Plant Society
CO ..... Carbone monoxide
CO_2 ..... Carbon dioxide
County ..... Kern County
CPUC ..... California Public Utilities Commission
dBA ..... A-weighted decibels
DTSC ..... Department of Toxic Substances Control

DWR .....Department of Water Resources
EAP .....Energy Action Plan
EIR .....Environmental Impact Report
EKAPCD..... East Kern Air Pollution Control District
EO ..... Executive Order
EPAct.....Energy Policy Act of 1992
FEMA ..... Federal Emergency Management Agency
FMMP .....Farmland Mapping and Monitoring Program
FRA .....Federal Responsibility Area
FTA ..... Federal Transit Administration
ft/d .....feet per day
ft^2/d .....foot or feet squared per day
GHG ..... Greenhouse Gas
GIS .....Geographic Information System
gpm .....gallons per minute
GSP ..... Groundwater Sustainability Plan
HFC ..... Hydrofluorocarbons
IWVGA ..... Indian Wells Valley Groundwater Authority
IWVWD..... Indian Wells Valley Water District
KCFD .....Kern County Fire Department
MDAB.....Mojave Desert Air Basin
mgd ..... million gallons per day
MIL .....Military
MMRP.....Mitigation Monitoring and Reporting Program
MND .....Mitigated Negative Declaration
MPO ..... Metropolitan Planning Organization
$MTCO_2e$ .....Metric Ton(2) of Carbon Dioxide Equivalent
NAGPRA.....Native American Graves Protection and Repatriation Act
NAHC .....Native American Heritage Commission
NAWS..... Naval Air Weapons Station
ND .....Negative Declaration
NHTSA.....National Highway Traffic Safety Administration
NOx .....Nitrogen Oxides

NRHP.....National Register of Historic Places
O_3 ..... Ozone
OCMP.....Odor Control Mitigation Plan
PFC .....Perfluorocarbons
PM_{10} .....particulate matter 10 microns in size
$PM_{2.5}$ .....particulate matter 2.5 microns in size
ppm .....parts per million
PRC ..... Public Resources Code
Project .....New Wastewater Treatment Plant Modified Project
RWQCB .....Regional Water Quality Control Board
SAF ..... State Alternative Fuels
SAFE .....Safer Affordable Fuel-Efficient (Rule)
SB ..... Senate Bill
SCE .....Southern California Edison
SCH .....State clearinghouse
SCS .....sustainable communities strategy
SGMA..... Sustainable Groundwater Management Act
SR ..... State Route
SRA .....State Responsibility Area
SWPPP ..... Storm Water Pollution Prevention Plan
SWRCB..... State Water Resources Control Board
TDS .....Total Dissolved Solids
USACE ..... United States Army Corps of Engineers
USDA..... United States Department of Agriculture
USDOT .....United States Department of Transportation
USFWS .....United States Fish and Wildlife Service
USGS .....United States Geological Survey
VMT ..... Vehicle Miles Traveled
WWTP..... Wastewater Treatment Plant

CHAPTER 1 INTRODUCTION

Provost & Pritchard Consulting Group (Provost & Pritchard) has prepared this Addendum to the original certified *2016 Environmental Impact Report (EIR) for the New Wastewater Treatment Plant on Two Alternatives Project* (State Clearinghouse (SCH) No. 2015061095) on behalf of the City of Ridgecrest (City) to address the environmental effects of the New Wastewater Treatment Plant Modified Project (Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. The City is the CEQA lead agency for this Project.

The site and the Project are described in detail in Chapter 2 Project Description.

1.1 REGULATORY INFORMATION

This document is an Addendum to the original certified *2016 EIR for the New Wastewater Treatment Plant on Two Alternatives Project* (see Appendix A) to determine the impacts of the Project as compared to the certified EIR. The current modified Project has identified changes to Project activities that were not analyzed in the 2016 document; therefore, this Addendum provides discussion of the new Project activities, determines if the modified Project has significant impacts to resources, and identifies new mitigation measures to reduce impacts to less-than-significant or if measures discussed in the original 2016 document still apply. The City, as the Lead Agency under CEQA, has prepared this Addendum in accordance with the California Environmental Quality Act (CEQA; Public Resources Code (PRC) Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulations Title 14, Chapter 3, Section 15000, et seq.).

CEQA Regulations

CEQA Guidelines Section 15164 – Addendum to an EIR or Negative Declaration, states, in pertinent parts:

b) An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.

c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration.

d) The decision-making body shall consider the addendum with the final EIR or an adopted negative declaration prior to making a decision on the project.

e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

Referenced Section 15162 – Subsequent EIRs and Negative Declarations, states:

(a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant

environmental effects or a substantial increase in the severity of previously identified significant effects;

2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:

   (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

   (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

   (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

   (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

(b) If changes to a project or its circumstances occur or new information becomes available after adoption of a negative declaration, the lead agency shall prepare a subsequent EIR if required under subdivision (a). Otherwise, the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation.

(c) Once a project has been approved, the lead agency's role in project approval is completed, unless further discretionary approval on that project is required. Information appearing after an approval does not require reopening of that approval. If after the project is approved, any of the conditions described in subdivision (a) occurs, a subsequent EIR or negative declaration shall only be prepared by the public agency which grants the next discretionary approval for the project, if any. In this situation no other responsible agency shall grant an approval for the project until the subsequent EIR has been certified or subsequent negative declaration adopted.

(d) A subsequent EIR or subsequent negative declaration shall be given the same notice and public review as required under Section 15087 or Section 15072. A subsequent EIR or negative declaration shall state where the previous document is available and can be reviewed.

This Addendum, including the environmental analyses which follow, demonstrates that none of the conditions described above in Section 15162, calling for the preparation of a subsequent environmental document to the adopted *2016 EIR for the New Wastewater Treatment Plant on Two Alternatives Project*, would occur as a result of the proposed New Wastewater Treatment Plant Modified Project. Therefore, the

City has determined this Addendum, prepared pursuant to Section 15164 of the CEQA guidelines, is the appropriate level of CEQA documentation for the proposed Project.

1.2 DOCUMENT FORMAT

This Addendum contains six chapters. Chapter 1 Introduction, provides an overview of the Project and the CEQA process. Chapter 2 Project Description, provides a detailed description of proposed Project components and objectives. Chapter 3 Environmental Impact Analysis presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the Project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. Chapter 4 Determination contains the Lead Agency's determination based upon this initial evaluation. Chapter 5 Mitigation, Monitoring, and Reporting Program (MMRP), provides the proposed mitigation measures, implementation timelines, and the entity/agency responsible for ensuring implementation. Chapter 6 References details the documents and reports this document relies upon to provide its analysis.

The original *2016 EIR for the New Wastewater Treatment Plant on Two Alternatives Project* is provided as Appendix A. The updated technical Biological Resources Information and Cultural Resources Information are provided as Appendix B and Appendix C, respectively, at the end of this document.

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

2.1.1 Project Title

New Wastewater Treatment Plan Modified Project

2.1.2 Lead Agency Name and Address

City of Ridgecrest
100 W. California Avenue
Ridgecrest, CA 93555

2.1.3 Contact Person and Phone Number

Lead Agency Contact

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2.1.4 Project Location

The Project is located in Ridgecrest, California, approximately 115 miles northeast of Los Angeles and 80 miles east of Bakersfield (see Figure 2-1 and Figure 2-2). The Project site is located on Assessor's Parcel Numbers 033-030-02-00-5, 033-030-05-00-4, and 033-030-08-00-3. The centroid of the Project site is approximately 35° 40' 21.50" North 117° 38' 20.95" West.

2.1.5 General Plan Designation and Zoning

The Project is located on Naval Air Weapons Station (NAWS) China Lake. The site's General Plan Land Use within the City of Ridgecrest General Plan is Military (MIL). The site is also located within the Military Influence Area (MIA) overlay zone. Other than this overlay zone, the site does not hold an official zoning designation due to naval base occupancy. The Project is located inside the naval base, and all surrounding lands hold the same General Plan Land Use and zoning designation.

2.1.6 Description of Project

The City of Ridgecrest (City), located in the eastern portion of Kern County, desires to upgrade its current WWTP on land owned by the United States Department of the Navy (Navy) and would serve both the City

of Ridgecrest and NAWS China Lake. As such, the Navy has served as a collaborator with the City in the production of this document. The Navy is also preparing a separate document in accordance with the National Environmental Policy Act. The Ridgecrest New WWTP Modified Project (Project) would be constructed adjacent to the existing WWTP, utilizing very little of the existing facility. The site is located on NAWS China Lake, approximately 3.5 miles northeast of the City center. The City has held an agreement with the Navy for an approximately 352-acre easement to operate a WWTP and 11 facultative treatment ponds on Navy-owned land since 1974, with the most recent modification of the contract on February 7, 1994. Two of these 11 ponds are out of service. In order to accommodate the expansion of the existing WWTP, the City requested, and was granted in 2020, an extension of the existing easement to include an additional 7.67 acres to the west of the existing WWTP. The Project would result in the construction of an upgraded WWTP to meet future residential and commercial growth through approximately 2050, repair existing treatment pond infrastructure, and improve the quality of the wastewater treated at the facility.

Existing Conditions

The existing WWTP has a permitted capacity of 3.6 million gallons per day (mgd), with a daily maximum discharge of 3.6 mgd. While the facility is rated for a maximum capacity of 3.6 mgd, the facility is aging and is not expected to be able to accommodate flows that would meet its permitted capacity. In 1993 daily flow reached approximately 3.3 mgd; however, due to a decrease in population and implementation of water conservation in conformance with California and local policy, daily flow levels (as of 2020) have declined to approximately 2.2 mgd. Additionally, in 2019 several earthquakes occurred which affected the area, causing damage to the distribution system of the 11 facultative treatment ponds located at the NAWS site.

Under current operations, treated water is percolated into the underlying aquifer through the treatment ponds located at the NAWS site and the former City WWTP site, located approximately 3.25 miles southeast of the Project site. Additionally, recycled water that has undergone primary and secondary treatment is used for irrigation at the China Lake Golf Course, approximately one-quarter mile southeast of the Project site. The Navy disinfects the effluent before it is used for irrigation purposes. Under the City's contract with the Navy to operate the WWTP, the Navy is allotted 525 acre-feet per year (AFY) of treated water, which is further treated within a sand filter prior to disinfection by the Navy and then used for irrigation purposes on the golf course.

Previous Analysis and Approval

A previous version of this Project was analyzed in an EIR that was certified by the City Council on July 6, 2016 (SCH No. 2015061095). The previous EIR analyzed two alternatives for the expansion of the City of Ridgecrest wastewater treatment plant (WWTP), from which the current Project differs. Alternative 1 proposed to demolish the existing WWTP and construct a new, upgraded facility on the same site, as described in Section 2.1.6, and also proposed the City to construct several new treatment ponds where the four percolation ponds currently exist in the southeastern portion of the City. Alternative 2 proposed the expansion of the treatment ponds at the NAWS China Lake site, the construction of an expanded gravity main pipeline, and the construction of a new WWTP south of the four existing percolation ponds in the southeastern portion of the City, along with several new treatment ponds at this site. Both of these alternatives proposed treatment ponds to be located within San Bernardino County, across the street from the nonoperational City WWTP.

Project Scope Change

Following certification of the EIR, the City and Navy continued to discuss the Project and eventually came to an agreement that the scope of the Project should change, deciding to upgrade the WWTP to be

constructed adjacent to the existing facility. This would necessitate the removal of most of the existing facility. The upgrade and ultimate expansion of the existing facility would require the development of approximately 7.67 acres of land to the west of the current facility. This land has been added to the existing easement between the Navy and the City for construction of the improved WWTP. The Certified EIR analyzed a 3.6-mgd (average daily flow) wastewater facility, while the fully completed Project would construct a facility that can process up to 5.4 mgd (average daily flow). This was not previously analyzed in the Certified EIR. This Addendum analyzed processing up to 5.4-mgd but did not analyze disposal of this amount. Upon full buildout of the facility, it would only be able to dispose of up to 3.6 mgd (as this is what will be requested in the Report of Waste Discharge for the new plant). This Addendum only analyzes disposal of up to 3.6 mgd. Additionally, the proposed Project includes the future construction of pond 12. This pond is within the existing easement between the Navy and the City but was also not analyzed in the Certified EIR. The improvements would result in the construction of a new facility that would utilize primary clarifiers, extended aeration with activated sludge (oxidation ditches), secondary clarifiers to treat the wastewater, along with anaerobic digesters and cogeneration facilities to utilize the resulting biogas from the anaerobic digesters for power production. Further, the Project includes repairs to the existing infrastructure of the 11 treatment ponds that were damaged by earthquakes in 2019. While three other alternatives were presented in the EIR (not provided or discussed in this document), the current Project has been deemed the most appropriate and includes considerations such as cost, usability, maintenance, and lifespan of the equipment.

Removed Project Components

The proposed Project no longer includes the following components:

- Construction of several new treatment ponds where the four percolation ponds currently exist in the southeastern portion of the City.
- Irrigation of approximately 30 acres of alfalfa located 3.25 miles southeast of the Project site, at the former City WWTP.
- The construction of an expanded gravity main pipeline.
- The construction of a new WWTP south of the four existing percolation ponds in the southeastern portion of the City, along with several new treatment ponds at this site.

No construction will take place in San Bernardino County. All construction will now take place on the NAWS site through an easement that the Navy has granted to the City.

Mohave Tui Chub Population

The Mojave Tui Chub, an endangered fish species native to the Mojave River, was relocated to NAWS China Lake in the 1970s. Effluent from treatment ponds 9 and 10 are thought to have experienced seepage that may provide suitable habitat for the Tui Chub at the Lark Seep, approximately 4,500 feet to the northeast of treatment pond 10. While this has not been officially confirmed, this document assumes that Lark Seep is receiving subsurface flow from ponds 9 and 10. The relocation of these fish has been discussed between the Navy and California Department of Fish and Wildlife (CDFW) and may result in their removal at a later date, following completion of the Project. According to the 2002 *Draft Environmental Impact Statement For Proposed Military Operational Increases and Implementation of Associated Comprehensive Land Use and Integrated Natural Resources Management Plans*, this population of fish is managed by NAWS in cooperation with the USFWS, CDFW, and City of Ridgecrest, and the water supply to the seep system is regularly monitored at established test wells and monitoring stations, to ensure compliance with water quality standards established for the protection and enhancement of the tui chub. The physical location of the Lark Seep is outside of the Project boundary and would not be disturbed as part of Project activities.

The population will continue to be managed by USFWS, CDFW, and the Navy. The City of Ridgecrest is under contract per the easement agreement to provide 200 AFY of treated effluent to the Navy for their use in supporting the tui chub population.

Construction

The Project would be constructed in two phases. Most processes within the existing WWTP would remain in service until the new WWTP is completed unless they are in conflict with the proposed improvements. The anticipated improvements that would be constructed in both phases are contained below:

Phase 1:

- Removal of the existing sludge drying beds
- Removal of the existing sludge storage area
- Removal of the existing influent junction structure
- New maintenance building
- New office/lab/administrative building
- New vehicle storage building
- Influent junction structure
- Septage receiving station
- Headworks
- Influent lift station
- Grit chamber
- Grit classifier
- Influent flow distribution box
- Primary clarifiers
- Primary sludge pump station
- Scum pump station
- Site waste lift station
- Oxidation ditches
- Secondary flow distribution box
- Secondary clarifiers
- Effluent control structure
- Disinfection basin
- Chemical storage area
- Return activated sludge (RAS)/Waste Activated Sludge (WAS) pump station
- Sludge thickening
- Oil & grease receiving station
- Anaerobic digestors
- Biosolids dewatering area
- Biosolids drying beds
- Biosolids storage area
- Biogas conditioning and power generation area
- Electrical distribution and emergency generator
- Auxiliary buildings
- Construction of Pond 12

Phase 2(future expansion):

- New primary clarifier
- New oxidation Ditch
- New secondary clarifier
- New anaerobic digester
- Expansion of the biosolids drying bed area
- Expansion of the biosolids storage area

Construction of Phase 1 is projected to accommodate capacity through approximately 2041, based on growth indicators for the City. Under Phase 1, annual average daily flow would be 3.6 mgd, with an average day maximum month flow of 4.0 mgd. The further expansion of the facility under Phase 2 is estimated to provide sufficient capacity to serve City growth through approximately 2052. Phase 2 would result in an annual average daily flow capacity of 5.4 mgd, with an average day maximum month flow of 5.9 mgd. Phase 2 is not fully designed and would likely not be built out for many years. As a result, just as was explained in the Certified EIR, environmental impacts from Phase 2 would be too speculative to analyze at this time and

will be evaluated under a separate environmental document once the Phase 2 parameters have been determined and that phase is being actively considered.

The Project would also provide repairs to the existing infrastructure of the 11 treatment ponds which were damaged by earthquakes in 2019. Repairs would include, but are not limited to, replacement of the existing piping to the treatment ponds, the installation of flow distribution boxes for each pond, and the installation of staff gages for each pond. In order to provide for these repairs and installations, each pond would be taken offline and drained, resulting in the existing biosolids being solar dried and removed from each respective pond. Pond bottoms would be scarified to rehabilitate percolation rates to near native conditions, and any existing damage to pond berms would be repaired as a part of this effort. The repair of pond infrastructure is contained as a part of the Project and would be completed as part of Phase 1. Ponds 8, 9, and 11 would be lined in the process. By lining these ponds, it will allow them to be fully loaded even during a wet year with a minimal chance of effluent surfacing down gradient of the ponds. In the future, depending on capacity and need, the City may construct a twelfth pond (Pond 12) within the northern section of the existing easement, to the north of pond 9 and west of pond 10. The timeline for the construction of Pond 12 is unknown at this time but is included in Phase 1 and covered in this Addendum.

Construction activities would be limited to the Project site, confined by the easement agreement between the City and the Navy, and would involve demolition, grading, paving, building construction, and painting. Site access during construction would be via a driveway connecting to North Knox Road. Principal deliveries to the Project site would include construction equipment, concrete and asphalt materials, building materials, and any related hardware required to construct the upgraded WWTP. A construction schedule has yet to be determined; however, any potential schedule for both construction activities and the delivery of materials would be required to be reviewed and approved by the Navy. It is anticipated that Phase 1 construction would take approximately two years to complete, and Phase 2 would take approximately 18 months to complete.

Future Use of Recycled Water

Following completion of the Project, the City would continue to provide the Navy with secondary treated effluent. The Navy would continue to provide disinfection of the effluent. At this time, the use of recycled water elsewhere throughout the City or on the NAWS China Lake has not been proposed. The treatment ponds that are thought to be creating suitable habitat for the Mojave Tui Chub would be allowed to continue to seep and provide habitat at the Lark Seep until such a time that the population of this species is relocated as agreed upon by the Navy and CDFW. Any potential future use of the recycled wastewater would be subject to both State and federal permits and regulations governing the disposal of and use of treated wastewater.

Operation and Maintenance

Operation and maintenance of the expanded WWTP would be performed by the City of Ridgecrest maintenance staff. It is anticipated that upon full Project buildout the City would need to increase staff by approximately 10 people.

2.1.7 Site and Surrounding Land Uses and Setting

Table 2-1: Existing Uses, General Plan Designation, & Zone Districts of Surrounding Properties

Direction from Project Site	Existing Use	General Plan Designation	Zone District
NORTH	Vacant, Military Use	Military	Military Influence Area
EAST	Vacant, Military Use	Military	Military Influence Area
SOUTH	RV Park, Golf Course, Military Use	Military	Military Influence Area
WEST	Vacant, Military Use	Military	Military Influence Area

2.1.8 Other Public Agencies Whose Approval May Be Required

- China Lake Naval Air Weapons Station – United States Department of Defense (Navy)
- Kern County Planning Department
- Regional Water Quality Control Board – Region 6, Lahontan
- State Water Resources Control Board
- East Kern Air Pollution Control District

2.1.9 Consultation with California Native American Tribes

Public Resources Code Section 21080.3.1, *et seq. (codification of Assembly Bill (AB) 52, 2013-14)*) requires that a lead agency, within 14 days of determining that it will undertake a project, must notify in writing any California Native American Tribe traditionally and culturally affiliated with the geographic area of the project if that Tribe has previously requested notification about projects in that geographic area. The notice must briefly describe the project and inquire whether the Tribe wishes to initiate request formal consultation. Tribes have 30 days from receipt of notification to request formal consultation. The lead agency then has 30 days to initiate the consultation, which then continues until the parties come to an agreement regarding necessary mitigation or agree that no mitigation is needed, or one or both parties determine that negotiation occurred in good faith, but no agreement will be made.

The City of Ridgecrest has not received any written correspondence from a Tribe pursuant to Public Resources Code Section 21080.3.1 requesting notification of proposed project.

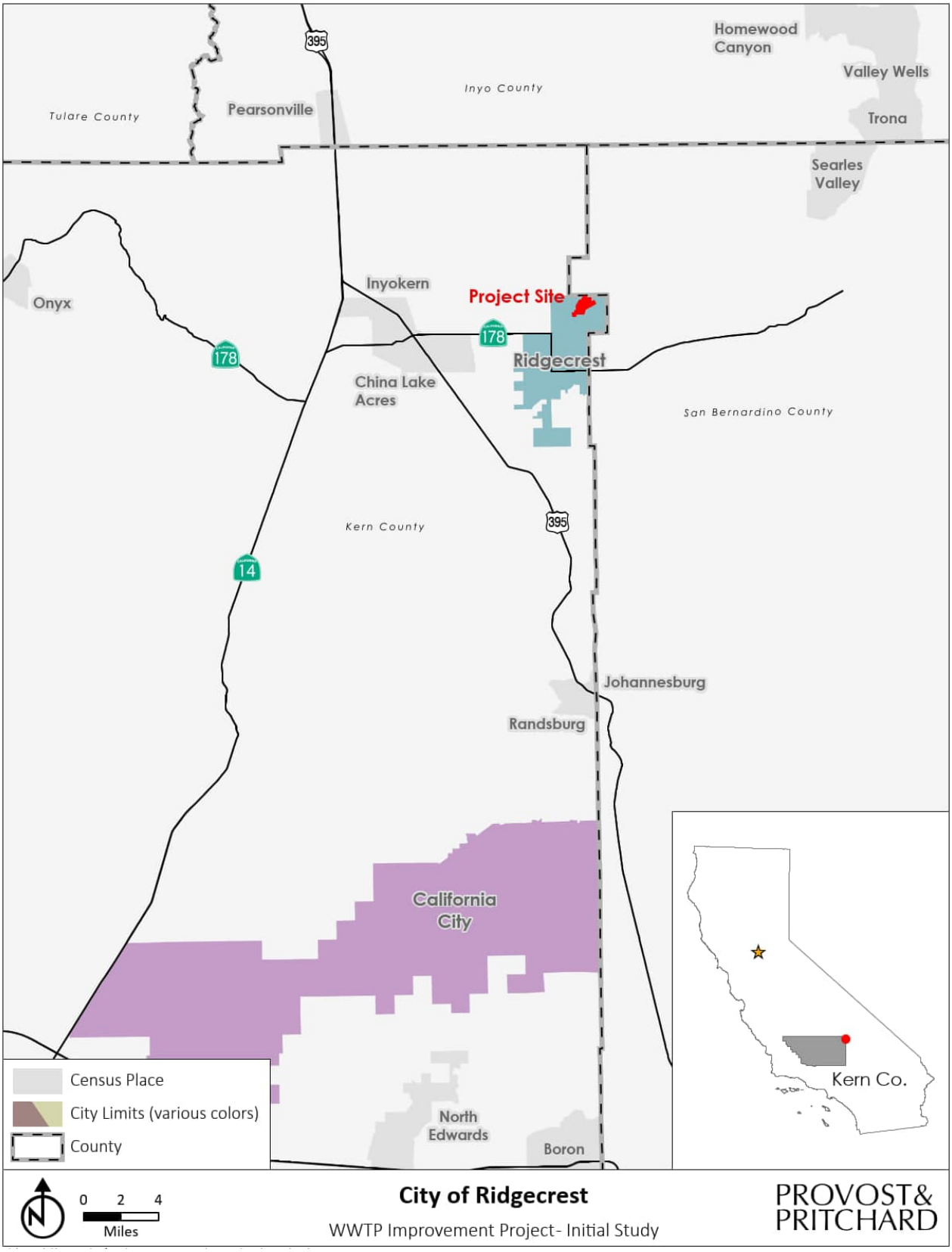


Figure 2-1: Regional Location Map

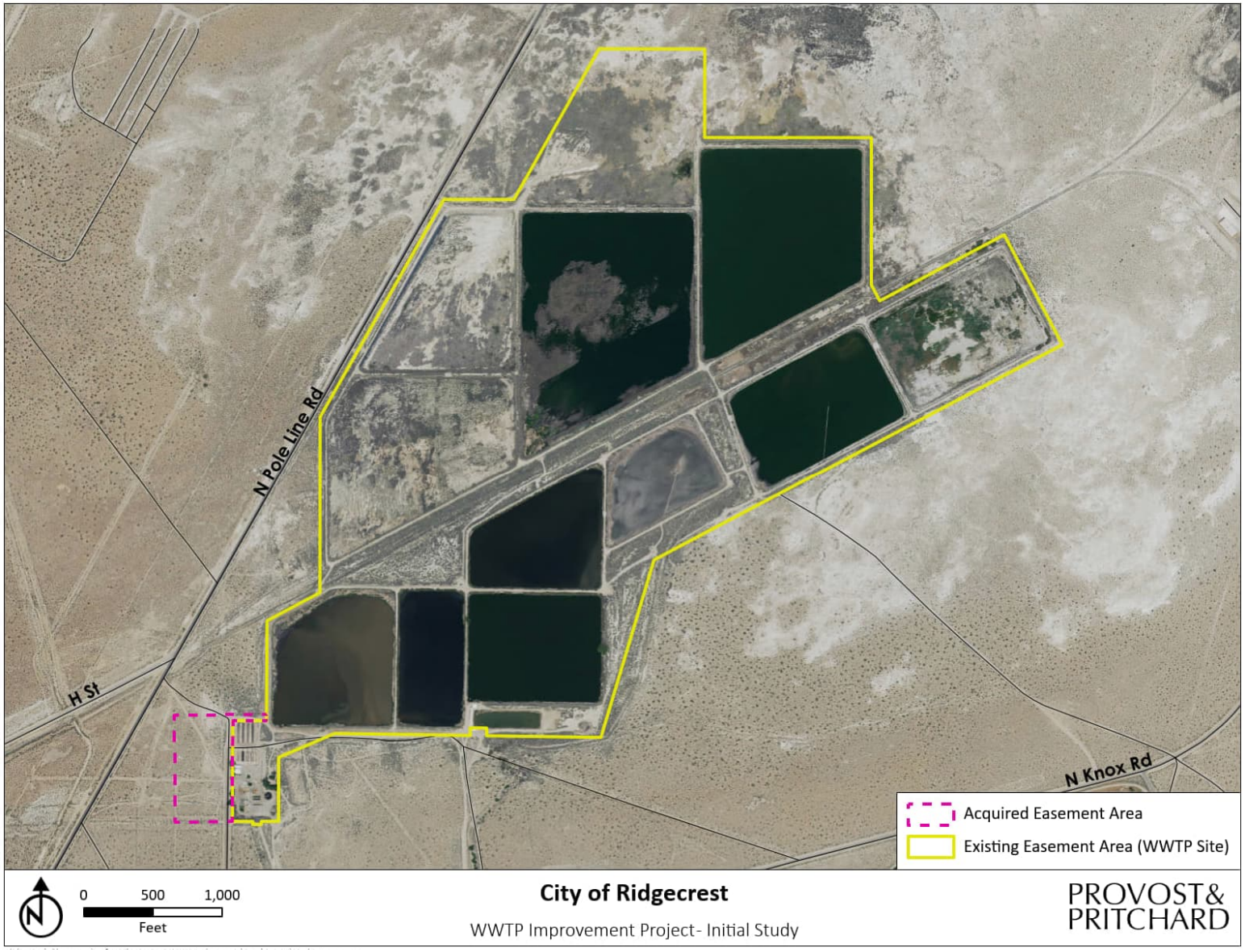


Figure 2-2: Aerial Map

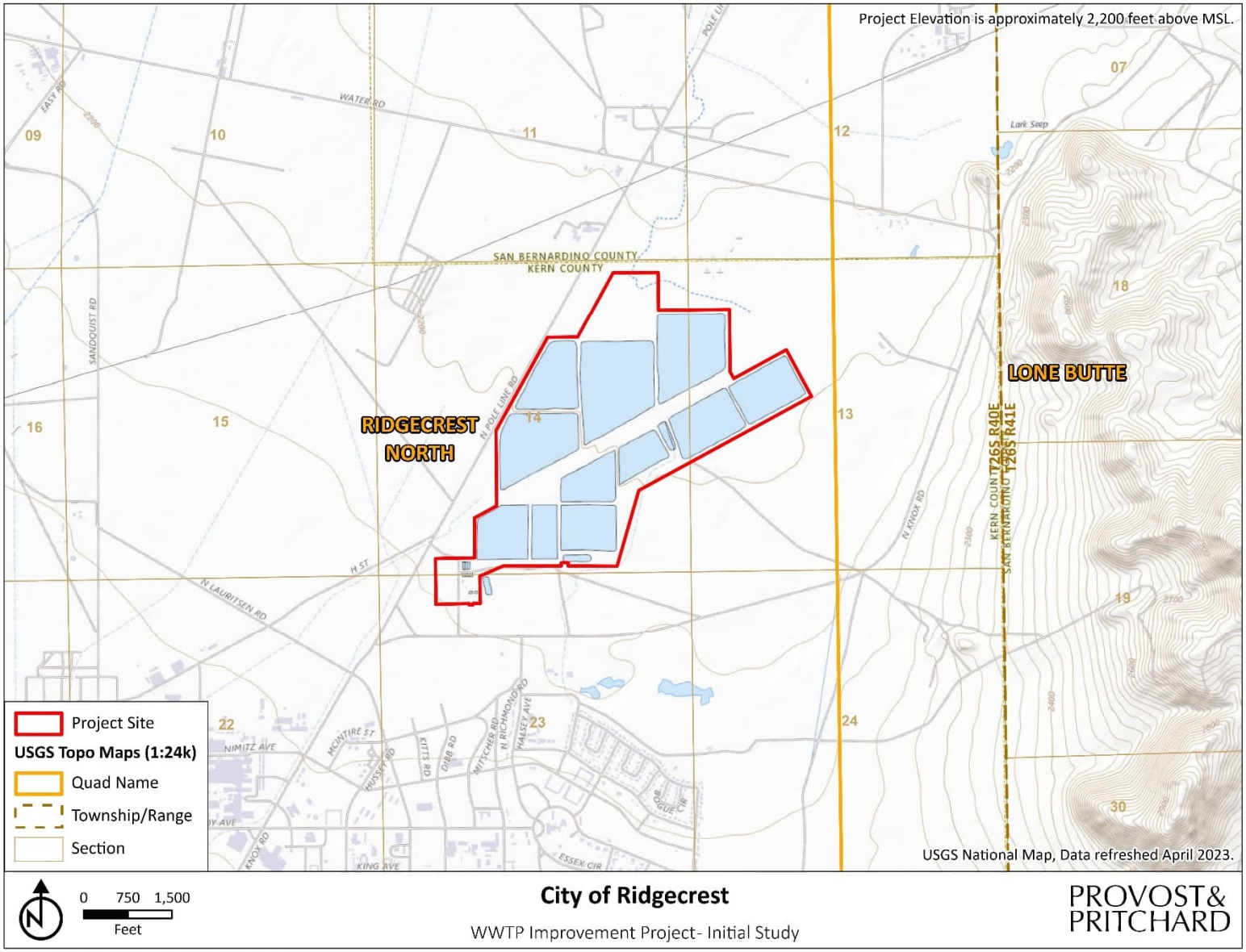


Figure 2-3: Topo Quad Map

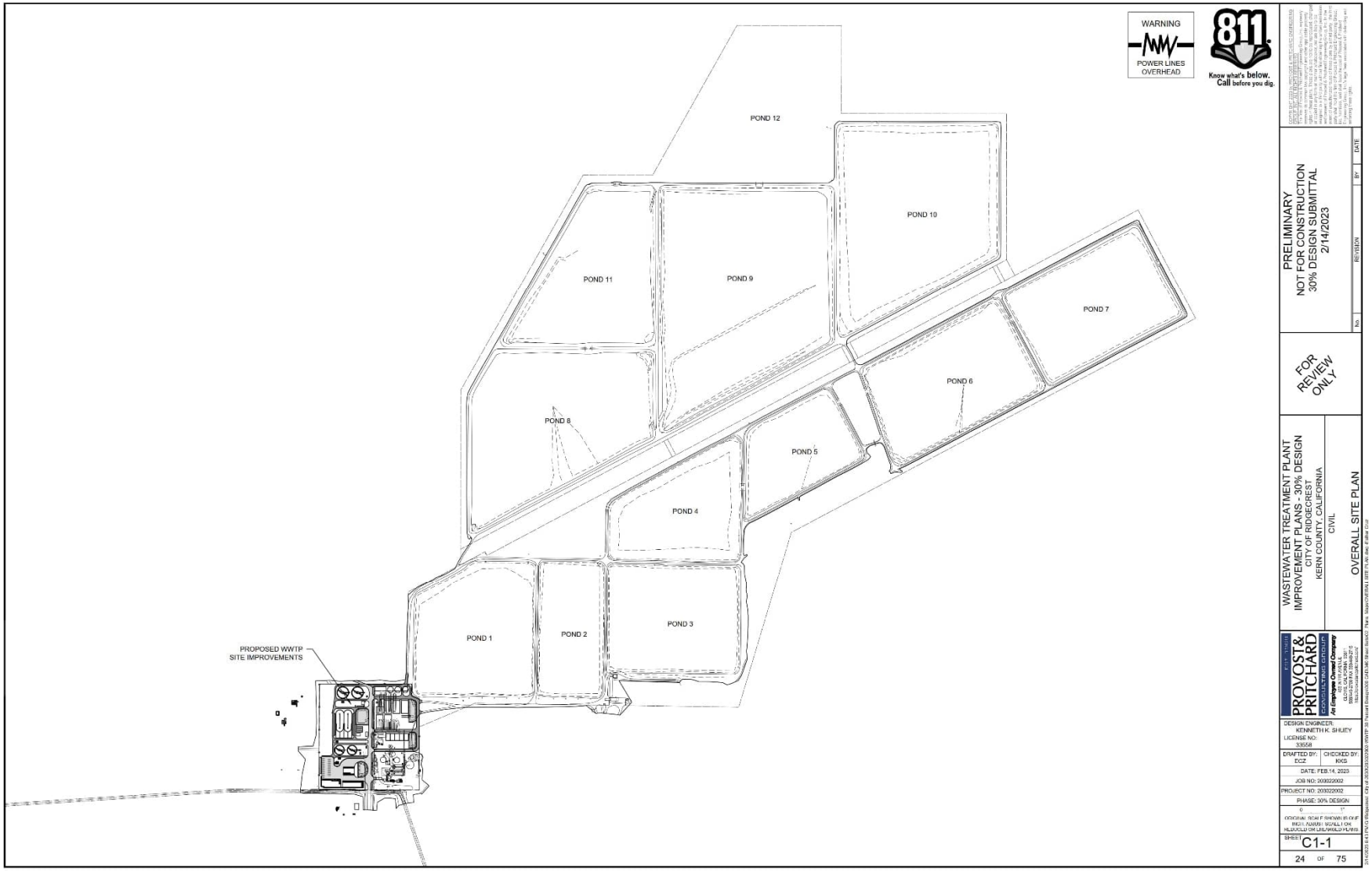


Figure 2-4: Overall Site Plan

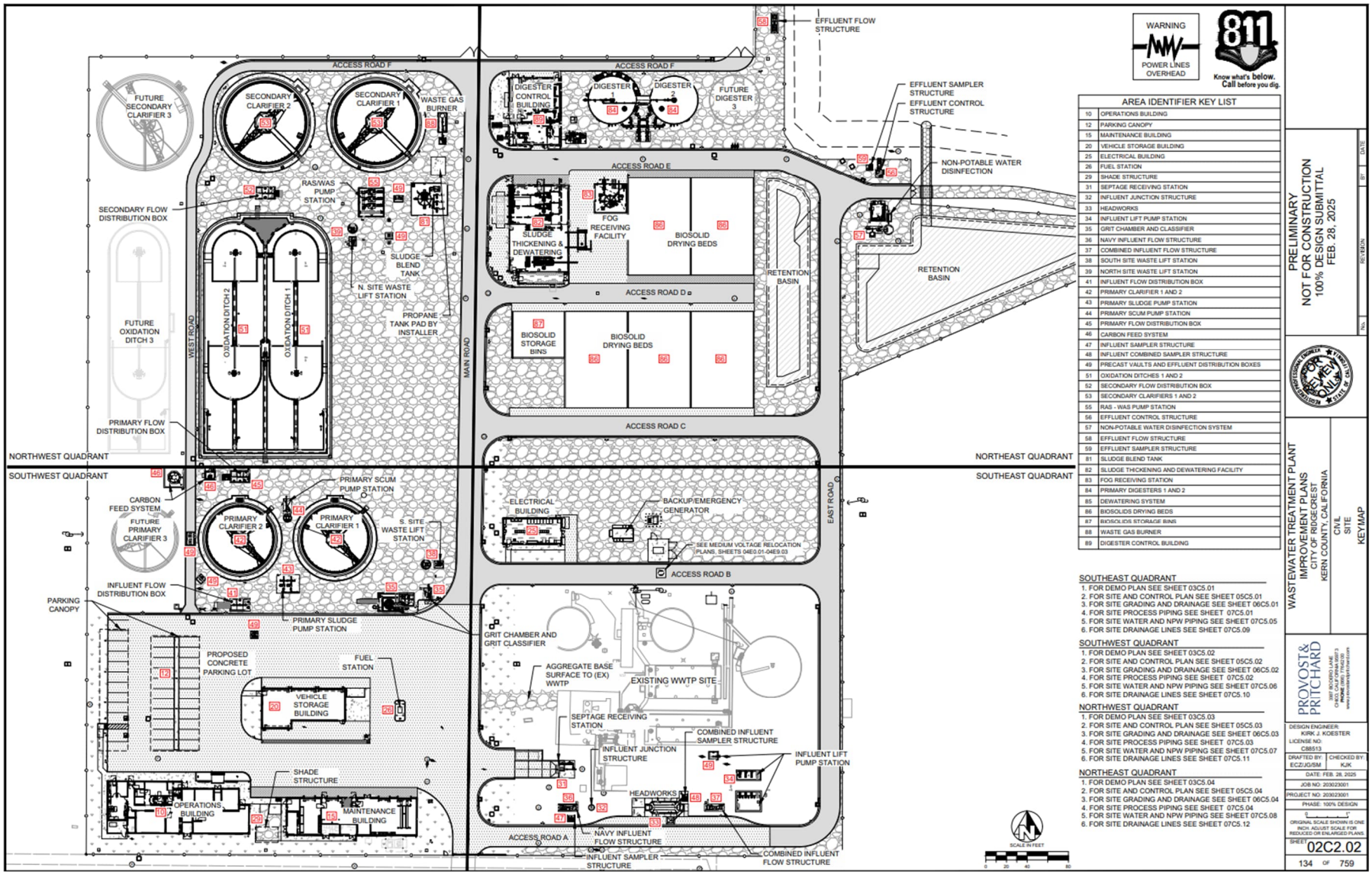


Figure 2-5: Wastewater Treatment Plan Site Plan

CHAPTER 3 ENVIRONMENTAL IMPACT ANALYSIS

3.1 AESTHETICS

Table 3-1: Aesthetics Impacts

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

3.1.1 Baseline Conditions

Aesthetics and visual resources are natural and cultural landscape features that people see and that contribute to the public's appreciative enjoyment of the environment. Aesthetic and visual resource impacts are generally defined in terms of the extent to which the project's physical characteristics and potential visibility would change the perceived visual character and visual quality of the viewed landscape. The Project is located within the City of Ridgecrest in eastern Kern County, at NAWS China Lake. This area is located in the Mohave Desert, with the Sierra Nevada Mountains to the west, the Cosos Mountains to the north, the Argus Mountains to the east, and the El Paso Mountains to the south. Views of these mountains and the desert landscape surrounding the City are considered scenic vistas according to the City of Ridgecrest General Plan.[1] The Project site is currently operating as the City's wastewater treatment plant and is not accessible by the public due to its location on the NAWS. The nearest officially designated scenic highway to the Project site is State Route 190, located approximately 45 miles to the north.[2] The site is located on NAWS, China Lake and would be in the same location as the existing WWTP. No other

[1] (City of Ridgecrest 2009)
[2] (California Department of Transportation 2018)

development immediately surrounds the existing WWTP, and it provides the primary source of light emitted in the Project vicinity.

3.1.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.1.3 Impact Analysis

a) Have substantial adverse effect on a scenic vista?

Less than Significant Impact with Mitigation Incorporated. The Project would result in the expansion of the City's existing WWTP, creating an impediment to views of the surrounding mountain ranges and desert surrounding the City. Views of both the mountains and the surrounding desert are considered scenic vistas by the City. While new structures and site facilities would be constructed, they would be located adjacent to the existing WWTP. In order to lessen any potential impact that construction of the upgraded WWTP would have on views of scenic vistas, Mitigation Measure **AES-1** would be required, requiring the preservation of natural vegetation in the Project area and the preparation of a landscape and lighting plan in conformance with all applicable land use plans. Impacts would be considered less than significant with mitigation incorporated.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The Project would not be located along, or within the vicinity of, a state scenic highway. The nearest officially designated scenic highway to the Project site is State Route 190, located approximately 45 miles to the north.[3] In addition, the Project would not damage scenic resources such as trees, rock outcroppings, and historic buildings. Therefore, there would be no impact.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less than Significant Impact with Mitigation Incorporated. The City of Ridgecrest does not meet the CEQA qualification to be considered urbanized (population of at least 50,000 people). The Project would result in the expansion of the City's existing WWTP adjacent to the existing facility's location. The Project site is also set back from the nearest public road via a private driveway. In order to ensure that construction of the Project would not substantially degrade the scenic value of the viewshed, the Project would be required to implement Mitigation Measure **AES-1**, requiring the preservation of natural landscaping where feasible and the submittal of a landscape and lighting plan. Impacts would be considered less than significant with mitigation incorporated.

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

[3] Ibid.

Less than Significant Impact with Mitigation Incorporated. The Project would result in the expansion of the City's existing WWTP, resulting in additional sources of light in the area. However, the Project site would be setback from the nearest public street by a private driveway, reducing the potential for lighting to affect people in the area. In order to ensure that lighting and glare impacts are minimized, Mitigation Measure **AES-2** would be required. This would require that the Project proponent submit a site plan and lighting plan indicating the location and direction of lighting proposed at the site. Impacts would be considered less than significant with mitigation incorporated.

3.1.4 Mitigation

Mitigation measure **AES-2** of the Certified EIR continue to be appropriate to mitigate potential impacts to aesthetics and will be included as mitigation under the current proposal. The mitigation measure **AES-1** for aesthetics resources contained within the Certified EIR shall be replaced within the following mitigation measure. **AES-1** contained herein uses the same mitigating language as **AES-1** of the Certified EIR, however it has been updated to reflect the Project no longer occurring within City limits and therefore no longer requiring a Building Permit from the City.

AES-1 In accordance with the Comprehensive Land Use Management Plan for NAWS China Lake, the proposed Project shall preserve existing natural aesthetic resources (vegetation) and re-establish natural vegetation around each site where feasible, install eco-friendly xeriscape landscaping and gateway features at main facility entrances that are visible from sensitive receptors and public rights-of-way. The City shall prepare professional landscaping and lighting plans for the facility in compliance with the aforementioned land use plan.

3.1.5 Comparison Analysis

The Project modifications would impact a smaller number of acres and expand the WWTP on its current site. The analysis in the Certified EIR is still valid and with the implementation of the adopted mitigation measures (**AES-1** and **AES-2**) impacts would remain less than significant.

3.2 AGRICULTURE AND FORESTRY RESOURCES

Table 3-2: Agriculture and Forest Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Baseline Conditions

While much of Kern County, located within the San Joaquin Valley, is a large agricultural producer, the Project site is surrounded by a desert environment. Farming operations are not as common in eastern Kern County as in the fertile San Joaquin Valley. Most of the land surrounding the City is classified as Other Land as it consists of nonagricultural or natural vegetation according to California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP).[4] Additionally, a small pocket of land designated as Unique Farmland is located approximately 3.5-miles southeast of the project site. The Project site is located within the boundaries of the NAWS China Lake, which consists of Urban and Built-Up Land and Nonagricultural Land according to the FMMP.

3.2.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

[4] (California Department of Conservation 2022)

3.2.3 Impact Analysis

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The Project site is currently occupied by the existing WWTP; no agricultural uses occur on site. According to the California Department of Conservation's FMMP, the WWTP improvements and expansion would not be located on land that has been designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as the Project Site is designated Urban and Built-up Land and Other Land.[5] Therefore, no impact would occur as a result of the Project.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project site is not under a Williamson Act contract. In addition, the site is not under a Farmland Security Zone contract or within an agricultural preserve. The Project, which consists of upgrading and expanding the existing WWTP, would not result in conflicts with agricultural zoning. Therefore, there would be no impact as a result of Project implementation.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The Project site, including the extension of the existing easement to include approximately an additional 7.67 acres to the west of the existing WWTP, is not zoned as either forest land or timberland. The Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. There would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project site does not contain forest land, and no vegetation on site is cultivated for forest resources. The Project would not result in the loss or conversion of forest land. No Impact would occur.

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

No Impact. According to the California Department of Conservation's FMMP, there is no mapped farmland or forest land on or near the Project site, and Project development would not indirectly cause conversion of such land to non-agricultural or non-forest use. Therefore, no impact would occur.

3.2.4 Comparison Analysis

The analysis in the Certified EIR showed that the Project had no impact on agriculture and forest resources. The proposed Project modifications would impact a smaller number of acres and expand the WWTP on its current site and, as noted above, has no impact on agriculture or forest resources. The analysis in the Certified EIR is still valid, and there remains no impacts to agricultural and forest resources.

[5] (California Department of Conservation 2022)

3.3 AIR QUALITY

Table 3-3: Air Quality Impacts

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

3.3.1 Baseline Conditions

The Project site consists of the existing wastewater treatment plant that serves the City of Ridgecrest and NAWS China Lake. The Project site is within the boundary of the East Kern Air Pollution Control District (EKAPCD) and the Mojave Desert Air Basin (MDAB). The MDAB is made up of mountain ranges interspersed with long broad valleys, many of which contain dry lakes. Winds in the MDAB are typically out of the west and southwest and exist due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and Central California valley regions by mountains (the highest elevation of which is about 10,000 feet) whose passes form the main channels for these air masses. During the summer, the MDAB is generally influenced by a pacific subtropical high cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska as these frontal systems are weak and diffuse by the time that they reach the desert. Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south.

3.3.2 Applicable Regulations

The regulations applicable to this Project have not changed since adoption of the EIR. Additionally, the following laws and regulations have been enacted in California since the preparation of the Certified EIR.

State

Small Off-Road Engine Exhaust Emission Regulations

In December 2021, CARB approved the Small Off-Road Engines regulation. This will require most newly manufactured small off-road engines such as those found in leaf blowers, lawn mowers and other equipment to be zero emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028. Despite their small size, these engines are highly polluting. The volume of smog-forming emissions from this type of equipment has surpassed emissions from light-duty passenger cars and is

projected to be nearly twice those of passenger cars by 2031. Older equipment can continue to be used and resold as this rule only impacts new equipment.

Advanced Clean Cars II Regulations

In August 2022, CARB approved the Advanced Clean Cars II program. The rule establishes a year-by-year roadmap so that by 2035 100% of new cars and light trucks sold in California will be zero-emission vehicles, including plug-in hybrid electric vehicles. Beginning in model year 2026 automakers sales of new vehicles will be required to be made up of 35% zero emission and plug-in hybrid electric vehicles. The regulation applies to automakers and covers only new vehicle sales. It does not impact existing vehicles on the road today, which will still be legal to own and drive.

3.3.3 Thresholds

The thresholds of significance contained within the Certified EIR remain applicable to this Project.

3.3.4 Impact Analysis

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact with Mitigation Incorporated. Projects that would result in a significant increase in emissions, in excess of EKAPCD significance thresholds, would also be considered to potentially conflict with or obstruct implementation of applicable air quality attainment plans. As noted below, the Project would not result in significant short-term or long-term increases of criteria air pollutants that would exceed applicable thresholds. As the proposed Project would utilize approximately 10% more land on the NAWS China Lake site, it is anticipated that construction emissions would conservatively increase by 10%. Additionally, as the proposed Project would increase capacity over the Certified EIR Project by 50%, it is conservatively assumed that operational emissions would also increase by 50%. Nevertheless, emissions would continue to not exceed established thresholds and the impact is considered less than significant, as depicted in Table 3-4 and Table 3-5.

b) Would the project 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 Impact with Mitigation Incorporated. The Certified EIR determined that the Project would result in a less than significant impact with the incorporation of mitigation, described as **AQ-1** below. As the Project would increase the construction area by 10%, it is reasonably and conservatively estimated that emissions would also increase by 10%, as depicted below in Table 3-4 and Table 3-5. Additionally, as the proposed Project would increase previously analyzed capacity by 50% as part of Phase 2, emissions are also anticipated to increase by 50%. Implementation of **AQ-1** would reduce fugitive dust emissions by approximately 50 to 61 percent. Implementation of **AQ-1** would also ensure compliance with applicable EKAPCD rules and regulations, including Rule 402, which imposes limitations on visible dust emissions at offsite locations and Rule 419 for nuisance-related impacts. All other criteria air pollutants would meet established thresholds. With this mitigation, impacts would be considered less than significant.

Table 3-4: Maximum Annual Construction-Generated Emissions of Criteria Air Pollutants

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Approved Project	0.42	4.70	3.17	0.00	0.68	0.42
Proposed Project, Phase 1 and 2	0.46	5.17	3.49	0.00	0.75	0.46
Thresholds	25	25	N/A	27	15	15
Significant Impact?	No	No	N/A	No	No	No

Table 3-5: Maximum Annual Operational Emissions of Criteria Air Pollutants

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Conditions	1.01	0.02	0.05	0.00	0.01	0.00
Approved Project / Proposed Project, Phase 1	1.41	0.50	0.80	0	0.05	0.02
Proposed Project, Phase 2	2.12	0.75	1.2	0	0.075	0.03
Thresholds	25	25	N/A	27	15	15
Significant Impact?	No	No	N/A	No	No	No

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. The Certified EIR determined that construction emissions would be less than significant due to its temporary nature, and this would continue to be true with the proposed Project. The Certified EIR also determined that operational emissions would result in a less than significant health risk impact. Conservatively assuming that a 50% increase in capacity would result in a 50% increase in emissions, as depicted below in Table 3-6, emissions would continue to result in less than significant health impacts.

Table 3-6: Health Risks Associated with Operational Emissions

	Cancer	Chronic	Acute
Existing Conditions	0.003	0.000	0.001
Approved Project / Proposed Project, Phase 1	0.1	0.00	0.01
Proposed Project, Phase 2	0.15	0.00	0.015
Threshold	10	1	1
Significant Impact?	No	No	No

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact with Mitigation Incorporated. The Project would increase the treatment capacity of the plant from an existing average-daily flow of approximately 3.6 mgd to approximately 5.4 mgd (average daily flow). The certified EIR analyzed a capacity of up to 3.6 mgd (average daily flow). While the Project would increase the capacity of the facility, an increase in odor potential (e.g., treatment of higher volumes of wastewater) does not necessarily result in a greater odor impact to the surrounding community. The location, size, and type of the treatment facilities, the sensitivity of nearby receptors, and the direction and speed of prevailing winds are all factors in determining whether odors from the treatment plant are likely to have a significant effect on the surrounding community. Processes having the greatest potential for odor generation at WWTPs are typically associated with sludge handling and drying practices. Potential increases in odors may be offset by improvements in design and/or operational procedures, including the use of chemicals and incorporation of additional treatment technologies. Design technologies considered to be the most effective in controlling onsite odors most often include the enclosure of process facilities and the treatment of air emitted from odor-generating equipment. In

comparison to the existing facility, the proposed project would result in additional treatment processes that would help to reduce the odor-generation potential of the facility, including anaerobic sludge digestion. Sludge handling activities, however, could result in an increase in the facilities odor-generation potential.

WWTPs located within approximately one mile of sensitive land uses are generally considered to have a potentially significant impact with regard to nuisance odors. The nearest residences would be located approximately 960 feet from the treatment facility. Given that residential land uses are located within one mile of the proposed treatment plants and the Project would result in a potential increase in odor-generating potential, this impact is considered potentially significant. However, with the implementation of Certified EIR Mitigation Measure **AQ-3**, impacts would continue to be less than significant.

3.3.5 Mitigation

Mitigation measures **AQ-1, AQ-2,** and **AQ-3** of the Certified EIR continue to be appropriate to mitigate potential impacts to air quality and will be included as mitigation under the current proposal.

3.3.6 Comparison Analysis

As stated in the impact analysis section above, even with the expansion of the existing WWTP and the increase in previously analyzed capacity of the WWTP, the proposed Project does not exceed any EKAPCD thresholds. Therefore, the analysis in the Certified EIR is still valid and with the implementation of the adopted mitigation measures (**AQ-1, AQ-2,** and **AQ-3**) impacts would remain less than significant.

3.4 BIOLOGICAL RESOURCES

Table 3-7: Biological Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Baseline Conditions

Existing Setting

The Project site is located within the Indian Wells Valley region of the western Mohave Desert. The area is loosely bound by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south.

The Project site is located in a region of California that has a desert climate. Summers are dry and hot with daytime temperatures commonly exceeding 100° Fahrenheit. Winters are mild to cold with occasional freezing nighttime temperatures. Annual precipitation in the general vicinity of the Project site is low with

a mean annual rainfall of approximately 3.7 inches, most of which falls between the months of December and March. Virtually all precipitation falls in the form of rain, with stormwater infiltrating onsite soils.

The topography of the Project site is relatively flat with a mean elevation of approximately 2,200 feet National Geodetic Vertical Datum.

In general, soils of the Project site are sandy. Surface soils are deficient in nitrogen and relatively high in salt accumulation. Some soils within ruderal areas of the site have been disturbed or altered through the construction of WWTP infrastructure. As such, native soil characteristics within these areas have been altered or destroyed.

The surrounding lands consist of desert scrub and developed lands associated with the City of Ridgecrest and NAWS China Lake.

Methodology

A reconnaissance-level field survey of the Project site was conducted on April 20, 2023, by a Live Oak Associates, Inc. ecologist. The survey consisted of walking through the Project site while identifying its principal land uses, biotic habitats, flora, and fauna, and assessing its potential to support special status species and other sensitive resources. This survey augmented and updated information collected by the same ecologist during a survey of this area in June of 2015. Neither of these surveys included a formal aquatic resources delineation (ARD) or focused surveys for special status species. The surveys were sufficient to assess the significance of possible biological impacts associated with Project implementation, and to assess the need for more detailed studies that could be warranted if sensitive resources were identified in these initial surveys.

Live Oak Associates, Inc. conducted an analysis of potential Project related impacts based on the known and potential biotic resources of the Project site. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2023), (2) the U.S. Fish and Wildlife Service (USFWS) *Information for Planning and Consultation* system (USFWS 2023), (3) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2023), (4) the USFWS National Wetlands Inventory, and (5) manuals, reports, and references related to plants and animals of the Project vicinity.

Table 3-8 and Table 3-9 below contain the special status species with potential to occur on or in the vicinity of the Project site.

Table 3-8: List of Special Status Animals with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project site
Monarch Butterfly (*Danaus plexippus*)	FC	Overwinters in coastal California and Baja California and breeds throughout California in the spring and summer along its annual migration north and east. The adult monarch lays its eggs on milkweed host plants, which the larvae feed on before pupating and emerging as adults. In addition to milkweed, this species requires abundant nectar resources to nourish migrating adults, and trees for roosting during migratory stopovers.	**Unlikely.** Monarchs, at most, may pass through the site during migration. Abundant nectar sources are absent from the project site and milkweed utilized for reproduction was not observed on site at a time when it should have been readily identifiable.
Mohave Tui Chub (*Siphateles bicolor mohavensis*)	FE, CE	Endemic to the Mojave River basin, adapted to alkaline, mineralized waters. Requires deep pools, ponds, or slough-like areas with vegetation for spawning.	**Absent.** Suitable habitat is absent from the project site. However, a large population occurs approximately 0.5-to-1.0-mile northeast of the project site in two large seeps and associated canals. It is

Species	Status	Habitat	Occurrence on Project site
			anticipated that the primary water source for these seep systems is percolation and leakage from the wastewater ponds on the project site.
Desert Tortoise (*Gopherus agassizii*)	FT, CT	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**Possible.** This species may occur in desert scrub and alkali flat areas of the project site.
Bank Swallow (*Riparia riparia*)	CT	Breeds in colonies; builds nest by tunneling into sandbanks. Forages over open habitat including fields, marshes, and ponds, often in mixed flocks with other species of swallows.	**Present.** This species has been regularly observed foraging over the project site (eBird 2023). Breeding habitat is absent.
Inyo California Towhee (*Melozone crissalis eremophilus*)	FT, CE	Inhabits the west and east slope of the southern Argus Range from 2,680 to 6,200 ft. Breeds in small patches of dense thickets of willows and desert olive along stream sides, springs and seeps.	**Absent.** The project site is outside the known range of this species.
Mohave Ground Squirrel (*Xerospermophilus mohavensis*)	CT	Open desert scrub, alkali scrub & Joshua tree woodland. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover and nesting.	**Possible.** Desert scrub and alkali flat areas of the project site provide potential habitat for this species. Historic observations of this species are documented adjacent to the project site.
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**Possible.** Burrows of suitable size for burrowing owl occupation were not observed on the project site during LOA's reconnaissance survey. However, this species has been documented on and near the project site (eBird 2023, CDFW 2023), and has the potential to occur in burrows not observed on the site, or to move onto the site at some point in the future.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Often found in cropland.	**Possible.** This species may forage and potentially nest on the site.
Le Conte's Thrasher (*Toxostoma lecontei*)	CSC	Desert resident primarily found in open desert washes, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Nests in dense spiny shrubs or branched cactus.	**Possible.** Potential breeding and foraging habitat occur in desert scrub habitats of the project site.
Spotted Bat (*Euderma maculatum*)	CSC	Frequents semi-arid to arid habitats from low desert habitats to high elevation conifer forests. Prominent rock features used for roosting.	**Possible.** This species may forage over the site; roosting habitat is absent.
Townsend's Big Eared Bat (*Corynorhinus townsendii*)	CSC	Found throughout California. Roosts most frequently in caves and cave-like structures, but has also been reported to utilize bridges, buildings, rock crevices, and hollow trees.	**Possible.** This species could conceivably forage over the site. Buildings on the site provide unsuitable roosting habitat.
Pallid Bat (*Antrozous pallidus*)	CSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	**Possible.** This species may forage over the site. Onsite trees lack hollow cavities suitable for bat roosting. Onsite buildings provide unsuitable roosting habitat due to the lack of openings into crevices or cavities suitable for roosting, as well as uninsulated

Species	Status	Habitat	Occurrence on Project site
			metal roofing on other buildings that would result in high temperatures in potential crevices beneath the roofing that would create unsuitable roosting conditions.
American Badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Possible.** Although no badger burrows or digs were observed during the LOA field survey, suitable habitat occurs within desert scrub habitats of the site.
Desert Bighorn Sheep (*Ovis canadensis nelsoni*)	FP	Found in the dry, steep, rocky desert mountains of southeastern California. Prefers open terrain.	**Absent.** Suitable habitat in the form of mountainous terrain is absent from the project site.

Table 3-9: List of Special Status Plants with Potential to Occur Onsite and/or in the Vicinity

Species	Status	Habitat	Occurrence on Project site
Clokey's Cryptantha (*Cryptantha clokeyi*)	CNPS 1B	Mojavean desert scrub. Found in sandy or gravelly soils in mountainous and hilly areas. Blooms in April.	**Unlikely.** Mountainous or hilly terrain required by this species is absent from the project site.

EXPLANATION OF OCCURRENCE DESIGNATIONS AND STATUS CODES

Present:	Species observed on the site at time of field surveys or during recent past.
Likely:	Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible:	Species not observed on the site, but it could occur there from time to time.
Unlikely:	Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent:	Species not observed on the site and precluded from occurring there due to absence of suitable habitat.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FC	Federal Candidate	CFP	California Fully Protected
		CSC	California Species of Concern
		CWL	California Watch List

CNPS LISTING

1B	Plants Rare, Threatened, or Endangered in California and elsewhere.

3.4.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.4.3 Impact Analysis

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation Incorporated. As discussed above, Live Oak Associates, Inc. performed a survey of the Project site in order to determine any potential effects that the Project may have on plant or wildlife species. Potential impacts were identified for nesting birds, desert tortoises, burrowing owls, Mohave ground squirrels, and American badgers. The potential impacts to these species is discussed further below, along with mitigation which would diminish any potential impacts to a less than significant level. No special status plant species were identified to be at risk as a result of the Project.

The full Biological Evaluation is contained as Appendix A: *2016 Environmental Impact Report (EIR) for the New Wastewater Treatment Plant on Two Alternatives Project*

Le Conte's Thrasher, Loggerhead Shrike, and Other Nesting Migratory Birds

The Project site has the potential to be used by the Le Conte's Thrasher, Loggerhead Shrike, and other nesting migratory birds protected under the Migratory Bird Treaty Act and related state laws, for nesting activities. If any of these birds were to nest on the Project site prior to construction, project related construction could result in the abandonment of active nests or direct mortality of birds. Such activity would violate both State and federal law and result in a significant impact. Through the implementation of Mitigation Measure **BIO-1**, impacts would be found to be less than significant. This mitigation measure would result in avoidance, pre-construction surveys, or the establishment of buffers depending on the timing of construction and the existing conditions at the time of such activities.

Desert Tortoise

The Project site contains desert scrub areas that, while providing low quality habitat, could contain desert tortoises. If a desert tortoise were to be located on the Project site at the time of construction activities, such activities would have the potential to cause a significant impact. The mortality of desert tortoises would violate State and federal law while causing significant impacts. Through the implementation of Mitigation Measure **BIO-2**, impacts would be found to be less than significant. With implementation of this mitigation measure, pre-construction surveys would be conducted in suitable desert tortoise habitat. In the event that a desert tortoise was encountered, consultation, permitting, and permit compliance would be completed with both the USFWS and CDFW.

Burrowing Owl

Burrowing owls, nor suitable burrowing owl habitat were identified by Live Oak Associates, Inc. during their survey of the site, however this species has historically been documented in the area. In the unlikely event that a burrowing owl was to occur on or adjacent to the site during construction activities, the burrowing owls may become disturbed and leave their nests. This species is protected under the Migratory Bird Treaty Act and Fish and Game Code. Mortality of individual birds would be a violation of State and federal law and would result in a significant impact. Through implementation of Mitigation Measure **BIO-3**, impacts would be less than significant. Through the implementation of this mitigation measure, "take" avoidance surveys, avoidance, and passive relocation of active nests would be utilized to ensure that potentially significant impacts do not occur.

Mohave Ground Squirrel

Portions of the Project site containing desert scrub provides suitable habitat for Mohave ground squirrels. If this species were to be present at the time of construction activities, such activities could result in the mortality of these squirrels. Mortality of individual members of this species would violate the California Endangered Species Act and result in significant impacts. Through implementation of Mitigation Measure **BIO-4**, impacts would be less than significant. Under this mitigation measure pre-construction surveys would be completed to determine if any Mohave ground squirrels were located on the site prior to construction activities. In the event that a squirrel was encountered, consultation, permitting, and permit compliance would be completed with the CDFW.

American Badger

While evidence of American badgers was not encountered at the time of the biological survey completed for the Project, the site does contain suitable American badger habitat. If an American badger was encountered during construction activities, mortality could result from such activities. This would result in a significant impact under CEQA. Through implementation of Mitigation Measure **BIO-5**, impacts would be less than significant. Under this mitigation measure, pre-construction surveys would be completed to determine if an American Badger was present on the site before construction activities occur. In the event that an American badger was encountered, avoidance activities would be implemented.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

b & c) Less than Significant Impact with Mitigation Incorporated. An alkali flat area occurs to the north of the existing wastewater ponding area, where a new wastewater pond is proposed (see **Figure 2-4**). Large portions of this alkali flat area meet the classification of a wetland. Additionally, the USFWS National Wetland Inventory map delineates this area as a wetland. Such an area has the potential to be considered by the RWQCB as a water of the State. In accordance with Section 404 of the Clean Water Act, prior to development of the future pond site, an ARD will be conducted across the development site according to standards acceptable to the Lahontan RWQCB and USACE to determine the actual extent of the wetland boundaries. The ARD will be submitted to the Lahontan RWQCB and USACE for a jurisdictional determination. If the agencies decline jurisdiction, then no other action is required.

If one or both of the agencies claims jurisdiction and the specific Project development actions trigger the need for a permit from the agencies, appropriate permits will be obtained from the RWQCB and/or USACE prior to work in the wetlands, and all permit conditions will be implemented. Alternatively, the City can pursue permits without a jurisdictional determination from the agencies and include the ARD as a part of the permit application(s). Additionally, in order to limit any potential impacts to this wetland from construction of the new wastewater pond, the Project would implement Mitigation Measure **BIO-6**. Implementation of this mitigation measure will ensure that any potential impacts to wetlands are not substantial in nature. No other sensitive natural habitats, riparian areas, or jurisdictional wetlands would be impacted as a part of the Project. Therefore, impacts would be less than significant with mitigation incorporated.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. The Project site has not been identified as containing any movement corridors for native wildlife species, nor has it been identified as containing any wildlife nursery sites. While wildlife may traverse through the Project site on occasion, the site is located near previously developed areas and roadways that experience varying levels of human activity and traffic which would discourage the routine use of the site by wildlife in the area. Therefore, there would be no impact.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The City of Ridgecrest does not have a tree preservation ordinance. The Project would be required to adhere to all local policies and ordinances protecting biological resources, including those of the City's Open Space and Conservation Element of its General Plan. Therefore, there would be no impact.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Project would not be located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. The Project would be subject to and adhere to the goals and policies contained within the Open Space and Conservation Element of the City of Ridgecrest General Plan. Therefore, there would be no impact.

3.4.4 Mitigation

Mitigation Measures **BIO-1** through **BIO-6** contained within the Certified EIR remain applicable to the current Project.

3.4.5 Comparison Analysis

The proposed Project modifications would impact a smaller number of acres and expand the WWTP on its current site which would lessen most biological impacts. The Project would comply with all federal, State and local regulations, including obtaining proper permits, if Project activities were to occur in areas where agency jurisdiction is identified. The analysis in the Certified EIR is still valid and with the implementation of the adopted mitigation measures (**BIO-1** through **BIO-6**), impacts would remain less than significant.

3.5 CULTURAL RESOURCES

Table 3-10: Cultural Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Baseline Conditions

The Project site is located on a portion of NAWS China that has been surveyed for cultural resources several times in the past. This includes 26 previous surveys, which resulted in 22 total identified resources. A list of these surveys and the resources identified are contained within Appendix B. These previous searches found that two built environment cultural resources are located within the Project Area of Potential Effect (APE). This includes a railroad spur grade (resource 15-002050) and a paved access road (resource 15-017353). The rail spur grade was surveyed in 2017 and determined to be ineligible for National Register of Historic Places (NRHP) listing at that time. The access road identified was documented by NAWS China Lake in 2013 and has not been evaluated for listing in the NRHP. Both of these resources appear on topographic maps as early as 1953, with the sewage disposal stations appearing on the 1973 Ridgecrest topographic map (see Appendix B). A new survey was completed by Applied Earthworks on February 13-16, 2023. No new cultural resources were identified outside of those found in the previous surveys.

Native American Outreach

The Native American Heritage Commission (NAHC) was contacted in October 2022. NAHC was provided with a brief description of the Project and a map showing its location and requested that they perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate Project area. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provided a current list of Native American Tribal contacts in the Project area to notify of the proposed project. Letters to these tribes were sent in February 2023, with no responses received. The list of tribes contacted, and their representative are contained within Appendix B.

3.5.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.5.3 Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in § 15064.5?

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

a and b) Less than Significant Impact with Mitigation Incorporated. As previously mentioned, a cultural resources survey was conducted by Applied Earthworks on February 13-16, 2023. This survey identified two previously identified cultural resources within the Project APE (resources 15-002050 and 15-017353). The Applied Earthworks survey found that the Project APE is highly disturbed and that both of the identified resources within the APE remain in the same condition as previously described. No other previous survey or the Sacred Lands File record search identified any other cultural resources within the APE. In the unlikely event that historical or archaeological resources are encountered during Project construction or operation, Mitigation Measure **CR-1** would be implemented to reduce any impacts to less than significant.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant Impact with Mitigation Incorporated. There is no evidence or record that indicates the Project has the potential to be an unknown burial site or the site of buried human remains. In addition, no sacred sites or tribal cultural resources were identified by the NAHC Sacred Lands File results within the APE or in the surrounding vicinity. In the unlikely event human remains are discovered in the Project Area, mitigation shall be implemented. Mitigation measure **CR-2** outlined below would be implemented and any impacts resulting from the discovery of remains would be reduced to less than significant.

3.5.4 Mitigation

The mitigation measures for cultural resources contained within the Certified EIR shall be replaced within the following mitigation measures. Both **CR-1** and **CR-2** contained herein use the same mitigating language as **CR-1** and **CR-2** of the Certified EIR, however they have been updated to reflect the appropriate jurisdiction.

CR-1 If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be ceased and NAWS China Lake shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System. The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to NAWS China Lake for review and approval a report of the findings and method of curation or protection of the resources. Further grading or

sitework within the area of discovery shall not be allowed until the preceding steps have been taken.

CR-2 If human remains are uncovered, or in any other case where human remains are discovered, the Kern County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.

3.5.5 Comparison Analysis

The Project modifications would impact a smaller number of acres and expand the WWTP on its current site. The site is highly disturbed and has been subject to numerous cultural surveys in the past. The analysis in the Certified EIR is still valid and with the implementation of the adopted mitigation measures (**CR-1** and **CR-2**) impacts would remain less than significant.

3.6 ENERGY

At the time the Certified EIR was prepared, Energy was not a required analysis and was not included. The CEQA Guidelines as adopted December 28, 2018, now include Energy in the CEQA Checklist. Accordingly, a complete checklist has been included in this Addendum.

Table 3-11: Energy Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
e) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

3.6.1 Baseline Conditions

Southern California Edison (SCE) supplies electricity to the Project area. SCE obtains its power through hydroelectric, thermal (natural gas), wind, and solar generation purchases. SCE continually produces new electric generation and implements continuous improvements throughout its service areas to ensure the provision of services to users. As the current facility treats an average of 2.6 mgd, it is presumed that the facility consumes approximately 1.4 megawatt-hours annually.

3.6.2 Applicable Regulations

This resource section was not previously contained within the Certified EIR. The following rules and regulations will apply to the current Project.

Federal

Regulations for Greenhouse Gas Emissions from Passenger Cars and Trucks and Corporate Average Fuel Economy Standards

In October 2012, the USEPA and National Highway Traffic Safety Administration (NHSTA), on behalf of the United States Department of Transportation (USDOT), issued final rules to further reduce greenhouse gas (GHG) emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond. NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5-miles per gallon (mpg) limiting vehicle emissions to 163 grams of carbon dioxide (CO_2) per mile for the fleet of cars and light-duty trucks by the model year 2025.

In January 2017, USEPA Administrator Gina McCarthy signed a Final Determination to maintain the current GHG emissions standards for the model year 2022-2025 vehicles. However, on March 15, 2017, USEPA Administrator Scott Pruitt and USDOT Secretary Elaine Chao announced that USEPA intends to reconsider

the Final Determination. On April 2, 2018, USEPA Administrator Scott Pruitt officially withdrew the January 2017 Final Determination, citing information that suggests that these current standards may be too stringent due to changes in key assumptions since the January 2017 Determination. According to the USEPA, these key assumptions include gasoline prices and overly optimistic consumer acceptance of advanced technology vehicles. The April 2, 2018, notice is not USEPA's final agency action. The USEPA intends to initiate rulemaking to adopt new standards. Until that rulemaking has been completed, the current standards remain in effect.

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the NHSTA, which is part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7-miles per gallon (mpg). Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The CAFE program, administered by USEPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. USEPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the Act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The Act established a State policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and CARB prepared and adopted a joint agency report in 2003, Reducing California's Petroleum Dependence. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT.[6] Further, a performance-based goal of AB 2076 was to reduce petroleum demand to 15 percent below 2003 demand by 2020.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 EAP II, CEC, and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statues of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels (SAF) Plan in partnership with CARB and consultation with other State, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing significant degradation of public health and environmental quality.

Executive Order S-06-06

EO S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The EO also calls for the State to meet a target for use of biomass electricity. The Bioenergy Action Plans developed by the CEC to identify those barriers and recommend actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan provides a detailed action plan to achieve the following goals:

- Increase environmentally- and economically-sustainable energy production from organic waste;

[6] (California Air Resources Board 2003)

- Encourage the development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- Create jobs and stimulate economic development, especially in rural regions of the state; and
- Reduce fire danger, improve air and water quality, and reduce waste.

In 2019, 2.87 percent of the total electrical system power in California was derived from biomass (CEC 2020).

Assembly Bill 32: Climate Change Scoping Plan and Update

In October 2008, CARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California as required by AB 32. This initial Scoping Plan contained the main strategies to be implemented to achieve the target emission levels identified in AB 32. The Scoping Plan included CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementation of energy efficiency measures in buildings and appliances, the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

CARB approved the initial Scoping Plan on December 11, 2008; the Plan is updated every five years. CARB approved the first update of the Scoping Plan on May 22, 2014; the updated Plan looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals (ARB 2014). The most recent update is the 2017 Climate Change Scoping Plan, which CARB released in November 2017. The measures identified in the 2017 Climate Change Scoping Plan have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires a battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state.

Senate Bill 350: Clean Energy and Pollution Prevention Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires a doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Senate Bill 32 and Assembly Bill 197 of 2016

SB 32 was signed by Governor Brown on September 8, 2016. SB 32 effectively extends California's GHG emission-reduction goals from the year 2020 to the year 2030. This new emission-reduction target of 40 percent below 1990 levels by 2030 is intended to promote further GHG reductions in support of the State's

ultimate goal of reducing GHG emissions by 80 percent below 1990 levels by 2050. SB 32 also directs CARB to update the Climate Change Scoping Plan to address this interim 2030 emission-reduction target. Achievement of these goals will have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels.

Senate Bill SB 100

SB 100 The 100 Percent Clean Energy Act of 2018, which sets a State policy that eligible renewable energy and zero-carbon resources supply 100 percent (%) of all retail sales of electricity in California by 2045.

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, Governor Brown signed EO B-48-18 which required all State entities to work with the private sector to put at least 5 million zero-emission vehicles on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 zero-emissions chargers by 2025. In addition, State entities are also required to continue to partner with local and regional governments to streamline the installation of zero-emission vehicle infrastructure. Additionally, all State entities are to support and recommend policies and actions to expand infrastructure in homes, through the Low-Carbon Fuel Standard.

Executive Order B-55-18

Establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.

Senate Bill 375

SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will address land use allocation in that MPOs regional transportation plan. ARB, in consultation with MPOs, establishes regional reduction targets for GHGs emitted by passenger cars and light trucks for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, funding for transportation projects may be withheld.

Senate Bill 1078: California Renewables Portfolio Standard Program

Senate Bill (SB) 1078 (Public Utilities Code Sections 387, 390.1, 399.25, and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum of 20 percent of their supply from renewable sources by 2017. This SB will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order (EO) S-14-08, which set the Renewables Portfolio Standard (RPS) target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. EO S-14-08 was later superseded by EO S-21-09 on September 15, 2009. EO S-21-09 directed CARB to adopt regulations requiring 33 percent of electricity sold in the State to come from renewable energy by 2020. Statute SB X1-2 superseded this EO in 2011, which obligated all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020.

California Building Code and Green Building Standards

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvements to real property. The CBC is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may

amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Local

City of Ridgecrest General Plan

The City of Ridgecrest General Plan contains the following goals related to the conservation of energy within the City:

- **Goal OSC-4**: To develop a conservation program to reduce the use of non-renewable energy sources and make full use of local sustainable resources, including solar and wind energy.
- **Goal OSC-4.3**: The City shall establish an energy education program to increase public awareness of conservation and other alternative energy sources, such as solar energy.
- **Goal OSC-4.5**: The City shall adopt the updated Uniform Building Codes to establish minimum energy efficiency standards for buildings.
- **Goal OSC-4.6**: The City shall require use of energy conservation technologies in new construction and the retrofit of existing buildings as required by state law.
- **Goal OSC-4.15**: The City shall participate in local and state programs that encourage energy conservation and reduction methods.

3.6.3 Impact Analysis

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact. The Project would consume approximately 1.2 megawatt-hours of electricity annually at full buildout, after the proposed anaerobic digester cogenerating approximately 60 to 70 percent of the facility's electricity usage. This is 0.2 megawatt-hours annually less than the existing facility. Current regulations for construction equipment, heavy-duty equipment, and earthmoving equipment used in construction contribute to reductions in energy as well as reduction in pollutant emissions. As the Project would result in a reduction in electricity usage, the Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. There would be no impact.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact. The Project would comply with Building Energy Efficiency Standards included in Titles 20 and 24 of the California Code of Regulations, which requires new development to incorporate energy efficiency standards, including energy-efficient lighting and motor requirements, into Project designs. The Project would utilize waste gas generated from wastewater to offset its electricity consumption. The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant.

3.6.4 Comparison Analysis

At the time the Certified EIR was prepared, Energy was not a required analysis and was not included. As shown in the analysis above the proposed Project does not create any significant impacts to energy.

3.7 GEOLOGY AND SOILS

Table 3-12: Geology and Soils Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐

3.7.1 Baseline Conditions

Geology and Soils

The Project site is located in the Basin and Ranges Geomorphic Province. The Basin and Ranges is characterized by north-south trending block-faulted mountain ranges and intervening valleys. Broad alluvial fans have formed along the transition of the ranges and valleys. The southern portion of the Basin and Ranges transitions to the Mohave Desert Geomorphic Province near the Garlock Fault approximately 14 miles south of the Project site. Approximately 13 miles west of the site is the Sierra Nevada Geomorphic Province. South of the site area is El Paso Mountain which consists of Mesozoic granitic rocks and Paleozoic marine rocks. Approximately three miles northeast of the site are The Lone Butte Hills consisting of

Quaternary Volcanic rock. The site is located in the Indian Wells Valley a basin with the El Paso Mountains to the south, the Sierra Nevada Ranges to the west and the Argus Range and Coso Mountains to the Northwest. The Indian Wells Valley is a topographic basin with infilling from surrounding alluvial fans. During wet periods of Pleistocene, the area was submerged by the ancestral China Lake. During periods of the Pleistocene, China Lake joined into a series of massive lakes that included Owens Lake, China Lake, Searles Lake, Panamint Lake, and ultimately Manly Lake in Death Valley. Toward the end of the Pleistocene the lakes receded to isolated lakes that formed saline lakes and playas in the Holocene. The Holocene China Lake shoreline is estimated to have been at an elevation of approximately 2,180 feet.[7]

Faults and Seismicity

The nearest major fault zone is the Garlock Fault (central Garlock section), located approximately 13 miles south of the project site. This fault is generally assumed to be active and capable of producing earthquakes of at least magnitude 8 on the Richter magnitude scale. The time of the last great earthquake on the Garlock Fault is not known. Additionally, the Project site would not be located in a fault-rupture hazard zone. The nearest fault-rupture hazard zone is the Little Lake Fault Zone, located approximately 4.2 miles northwest of the Project site.[8]

Liquefaction

Liquefaction is a soil condition in which seismically induced ground motion causes an increase in soil water pressure in saturated, loose, sandy soils, resulting in loss of soil shear strength. Liquefaction can lead to near-surface ground failure, which may result in loss of foundation support and/or differential ground settlement. Sandy deposits deeper than 50 feet below ground surface are usually not prone to causing surface damage. In addition, soils above the groundwater table (soils that are not saturated) will not liquefy. The soil formations throughout much of the desert area of eastern Kern County consist of thick, unconsolidated, coarse-textured alluvial sediments composed of gravel, sand and silt of granitic composition. Depth to water within the City of Ridgecrest is estimated to be between 200 feet below ground surface (bgs) to the southwest part of city and approximately 400 ft bgs to the northeast.[9] Based on the estimated depth of the groundwater at the site and the geologic age of the soils, liquefaction is considered unlikely.

Subsidence

Subsidence due to groundwater withdrawal has occurred within areas of Kern County in the northwest portion of Kern County and in the Antelope Valley near Edwards Air Force Base.[10] As much as four feet of subsidence has been reported. These areas are located approximately 90 miles west and 45 miles southwest, respectively, of the Project site. No subsidence has been documented at or near the Project site.

3.7.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

[7] (BSK ASSOCIATES 2020)
[8] (California Department of Conservation 2023)
[9] (California Department of Water Resources 2022)
[10] (United States Geological Survey 2023)

3.7.3 Impact Analysis

a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?

Less than Significant Impacts. Although the Project site is not located in an Alquist-Priolo Earthquake Fault Zone as established by the Alquist-Priolo Fault Zoning Act (Section 2622 of Chapter 7.5, Division 2 of the California Public Resources Code), nearby potentially active faults could generate ground shaking. The nearest major fault is the Garlock Fault, located approximately 13 miles south of the Project site. The Little Lake Fault Zone is approximately 4.2 miles northwest of the site. The Project will consist of the construction of an upgraded WWTP to meet future residential and commercial growth, repair existing treatment pond infrastructure, and improve the quality of the wastewater treated at the facility. New construction on site would be limited to the expansion of the existing WWTP on the additional 7.67 acres to the west of the existing WWTP and the excavation of pond 12. Furthermore, the development of all structures would be consistent with the requirements set forth in the California Building Standards Code, which sets procedures and limitations for design of structures based on seismic risk, and which would ensure that the design and construction of these structures are engineered to withstand the expected ground acceleration that could occur in the vicinity. Any impact would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

Less than Significant Impact. The Project site would not be located on or adjacent to a fault-rupture hazard zone. The nearest fault-rupture hazard zone is the Little Lake Fault Zone, located approximately 4.2 miles northwest of the Project site. While it is unlikely that an earthquake would result in surface rupture at the Project site, previous earthquake activity in 2019 did result in damage to the infrastructure of the existing treatment ponds on site that will be addressed through implementation of this project. The site is likely to undergo seismic ground shaking at some point. However, the improvements and expansion would be designed and constructed in compliance with the most current California Building Code, the California Geological Survey's "Guidelines for Evaluating and Mitigating Seismic Hazards in California" and "Checklist for the Review of Geologic/Seismic Reports for California Schools, Hospitals, and Essential Services Buildings," and Division of the State Architect requirements. Seismic ground shaking impacts would be less than significant.

Other types of seismic-related ground failure, such as liquefaction, are not likely due to the soil types underlying the Project site and as depth to groundwater ranges between 200-400 bgs.[11] Additionally, the Project site is located on generally flat land, resulting in no risk from landslides. Therefore, impacts would be less than significant.

[11] (California Department of Water Resources 2022)

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Surface soil erosion and loss of topsoil could occur from soil disturbances associated with construction activities at the Project site. Future development and creation of new impervious surfaces also has the potential to contribute to increased stormwater runoff, which could make soil erosion more severe if stormwater is not handled properly. Implementation of a SWPPP, as required by the California State Water Resources Control Board's Construction Storm Water General Permit 2009-0009-DWQ, would ensure that stormwater is appropriately addressed. Therefore, impacts would be less than significant.

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

Less than Significant Impact. Excavation, grading, and fill operations associated with construction could alter existing slope profiles making them unstable because of over-excavation of slope material, steepening of the slope, or increased loading. However, destabilization of natural or constructed slopes is unlikely to occur as surface topography is relatively flat. Additionally, BMP's provided in the SWPPP would be implemented to maintain stable slopes and excavations during construction, and therefore, impacts would be less than significant.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less than Significant Impact. Findings from the 2015 BSK Associates preliminary geotechnical investigation at the Project site indicate that on-site soils are considered to have a very low expansion potential with an expansion index of zero for five of the eight drilled soil borings.[12]

Appropriate BMP's required to comply with the Construction General Permit would be implemented to address expansive soils and would include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground-treatment processes, redirection of surface water and drainage away from foundation soils, and the use of deep foundation such as piers or piles. If required, implementation of these BMP's would ensure that impacts associated with expansive soils would remain less than significant.

e) Would the project 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?

No Impact. The Project would not include the construction or use of septic tanks or alternative wastewater disposal systems. The Project would connect to an existing sewer collection system. Therefore, there would be no impact.

[12] (BSK Associates 2015)

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Less than Significant Impact with Mitigation. No known paleontological resources or unique geological features are known to exist at the Project site. The records search contained within the Certified EIR did not identify any known paleontological resources within the Project area. However, if a paleontological resource is unearthed during construction activities, incorporation of Mitigation Measure **CR-1,** as discussed in section 4.5 would reduce impacts to less than significant.

3.7.4 Mitigation

CR-1 of the Certified EIR would diminish any potential impacts to paleontological resources in the event that any were uncovered as a result of the Project.

3.7.5 Comparison Analysis

The proposed Project modifications would impact a smaller number of acres and expand the WWTP on its current site, which would reduce the number of acres of ground disturbance and therefore lessen any geology and soil impacts. The analysis in the Certified EIR is still valid and with the implementation of **CR-1** impacts would remain less than significant.

3.8 GREENHOUSE GAS EMISSIONS

Table 3-13: Greenhouse Gas Emissions Impacts

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

3.8.1 Baseline Conditions

Commonly identified GHG emissions and sources include the following:

Carbon dioxide (CO_2) is an odorless, colorless, natural greenhouse gas and is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources include the burning of coal, oil, natural gas, and wood.

Methane (CH_4) is a flammable greenhouse gas. A natural source of methane is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

Water vapor is the most abundant, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

Ozone (O_3) is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Ozone is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.

Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987.

Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potential. HFCs are human-made for applications such as air conditioners and refrigerants.

Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture.

Sulfur hexafluoride (SF_6) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased by at least 40 percent, 150 percent, and 20 percent respectively since the year 1750. GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 25 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

3.8.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project. Additionally, the following laws and regulations have been enacted or amended in California since the preparation of the Certified EIR.

Federal

Federal Clean Air Act

The EPA is the federal agency responsible for executing the federal Clean Air Act (CAA) and its amendments. In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO_2) is an air pollutant, as defined under the CAA, and thus the EPA has the authority to regulate GHG emissions. The ruling resulted in the EPA taking steps to regulate GHG emissions and lend support for State and local agencies in their efforts to reduce GHG emissions.

Federal Regulations for Vehicle Fuel Economy Standards

The EPA and the National Highway Traffic Safety Administration (NHTSA) in 2012 issued final rules to reduce GHG emissions and improve the CAFE standards for light-duty vehicles of model years 2017 and beyond. These CAFE standards have been enacted since 1978 under the Energy Policy and Conservation Act. This program requires automobile manufacturers to build a single nation light-duty fleet that meets both the requirements under federal programs and those of California and other states. This program would improve fuel economy to 54.5 miles per gallon-equivalent limiting vehicle emissions to 153 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025, which represents five percent annual increases in fuel economy.

The EPA and NHTSA jointly published in 2018 a notice of proposed rulemaking entitled "The Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks" (SAFE Rule), which proposed:

> (1) new and amended CO_2 and CAFE standards for passenger cars and light trucks;
>
> (2) to withdraw the waiver EPA had previously provided to California for that State's GHG and zero emission vehicle (ZEV) programs under Section 209 of the Clean Air Act; and
>
> (3) regulatory text to implement NHTSA's statutory authority to set nationally applicable fuel economy standards to explicitly preempt California's GHG and ZEV programs.

In 2019, Part One of the SAFE Rule (One National Program) became effective, which withdrew California's waiver from EPA and finalized NHTSA's regulatory text related to preemption of State regulations. In 2020, EPA and NHTSA announced Part Two of the SAFE Rule, which would establish amended fuel economy and CO_2 standards for passenger cars and light trucks of model years 2021-2026. These revised standards would increase in stringency by 1.5 percent per year from model year 2020 over model years 2021-2026.

State

Executive Order (EO) S-3-05

In 2005, Governor Schwarzenegger issued EO S-3-05, proclaiming that California is vulnerable to the impacts of climate change. The EO declares that increasing temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To address those concerns, the EO established GHG emission targets for the State and identified responsibilities for State agencies in meeting the targets. Specifically, statewide emissions are to be reduced to 2000 levels by 2010, 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

AB 32

In 2006, AB 32, the California Global Warming Solutions Act of 2006, was signed into law. AB 32 establishes regulations, reporting requirements, 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 greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed.
>
> (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020.
>
> (c) The California Air Resources Board (CARB) shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

EO B-30-15

In 2015, Governor Brown issued EO B-30-15 which established a California GHG reduction target of 40 percent below 1990 levels by 2030. This emission reduction target of 40 percent below 1990 levels by 2030 set the next interim step in the State's continuing efforts to pursue the long-term target previously established under EO S-3-05 to reach the goal of reducing emissions 80 percent below 1990 levels by 2050. This is consistent with scientifically established levels needed in the U.S. to limit global warming below 2

degrees Celsius, the threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

SB 32

In 2016, SB 32 was signed into law and serves to extend California's GHG reduction programs beyond 2020. SB 32 amended existing regulations to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030, codifying the 2030 target established by EO B-30-15.

Advanced Clean Cars Program

Also in 2012, CARB approved the Advanced Clean Cars program which sought to combine the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of regulatory standards for vehicle model years 2017 through 2025. These regulations strengthen the GHG standard for 2017 models and beyond and would be achieved through existing and more efficient technologies. The program's ZEV regulation would require battery, fuel cell, and/or plug-in hybrid electric vehicles to comprise up to 15 percent of California's new vehicle sales by 2025. The program also included a clean fuels outlet regulation designed to support the development of zero-emission hydrogen fuel cell vehicles by requiring increased numbers of hydrogen fueling stations throughout the state. By 2025, when it was assumed, the rules would be fully implemented, the statewide fleet of new cars and light trucks would emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions than the statewide fleet in 2016.

SB 100

In 2018, SB 100 increased California's Renewable Energy Portfolio targets for utility companies to 52 percent renewables by 2027 and 60 percent renewables by 2030. It also established a new zero-carbon electricity mandate by 2040.

California Building Energy Efficiency Standards (Title 24, Part 6)

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. Title 24 Part 6 was established by California Energy Commission (CEC) in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy-efficiency standards for residential and nonresidential buildings. These standards are updated triennially and have resulted in substantial gains in energy efficiency in new construction with each code update cycle.

The 2022 Title 24 Part 6 Building Energy Efficiency Standards were adopted by CEC in 2021 and took effect in 2023. The standards are designed to move the State closer to its zero net energy goals for new residential development. It does so by requiring all new residences to install enough renewable energy to offset all the site electricity needs of each residential unit. CEC estimates that the 2022 Energy Code would provide $1.5 billion in consumer benefits and reduce 10 million metric tons of GHGs.[13]

The Title 24 Building Energy Efficiency Standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards are demonstrated to be cost effective and exceed the energy performance required by Title 24 Part 6.

[13] (California Energy Commission 2023)

SB 97

SB 97, enacted in 2007, amended the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. The legislation directed the California Office of Planning and Research to develop draft CEQA Guidelines "for the mitigation of GHG emissions or the effects of GHG emissions" and directed the California Natural Resources Agency to certify and adopt the State CEQA Guidelines. CEQA Guidelines Section 15183.5, Tiering and Streamlining the Analysis of GHG Emissions, was added as part of the CEQA Guideline amendments that became effective in 2010 and describes the criteria needed in a GHG reduction plan that would allow for the tiering and streamlining of CEQA analysis for development projects.

SB X7-7

SB X7-7 requires water suppliers to reduce urban per capita water consumption by 20 percent from a baseline level by 2020. The production and treatment of water, as well as the treatment of wastewater, requires substantial amounts of electricity, and thus there this a direct relationship between water and greenhouse gases.

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25 percent of all solid waste from landfill facilities by 1995, and 50 percent by 2000. Through other statutes and regulations, this 50 percent diversion rate also applies to State agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally safe transformation and land disposal.

In 2011, AB 341 modified the California Integrated Waste Management Act and directed the California Department of Resources Recycling and Recovery to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that after 2012, certain businesses that generate four cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75 percent; the 50 percent disposal reduction mandate still applies for cities and counties under AB 939, the Integrated Waste Management Act.

Assembly Bill 32: Climate Change Scoping Plan and Update

In October 2008, CARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California as required by AB 32. This initial Scoping Plan contained the main strategies to be implemented to achieve the target emission levels identified in AB 32. The Scoping Plan included CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the Low Carbon Fuel Standard program, implementation of energy efficiency measures in buildings and appliances, the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

CARB approved the initial Scoping Plan on December 11, 2008; the Plan is updated every five years. CARB approved the first update of the Scoping Plan on May 22, 2014; the updated Plan looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals (ARB 2014). The most recent update is the 2017 Climate Change Scoping Plan, which CARB released in November 2017. The measures identified in the 2017 Climate Change Scoping Plan have the co-benefit of increasing energy efficiency and reducing California's dependency on fossil fuels.

Cap-and-Trade Program

The Cap-and-Trade program was developed to reduce GHG emissions from major emissions sources (covered entities) by setting a firm cap on statewide GHG emissions that is gradually reduced over time while employing market mechanisms to cost-effectively achieve the State's emission-reduction goals. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, including electricity generators, large industrial facilities emitting a specified amount of annual emissions, and distributors of transportation, natural gas, and other fuels, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide the approximately 450 entities covered by the program with the flexibility to seek out and implement the lowest cost options to reduce emissions. All covered entities are required to demonstrate compliance with the cap-and-trade program by implementing GHG reduction activities on-site or through use of free or purchased allowances, or purchase of offsets.

3.8.3 Thresholds

The EKAPCD has not yet adopted recommended significance thresholds for the evaluation of development projects subject to CEQA review. In addition, the City of Ridgecrest has not yet adopted a GHG-reduction plan. The proposed wastewater treatment facility would be subject to EKAPCD permitting requirements for stationary sources. As a result, in the absence of a recommended significance threshold and applicable GHG-reduction plan, this analysis relies on EKAPCD's GHG policy for the analysis of stationary source GHG emissions. Accordingly, project-generated emissions that would exceed 25,000 $MTCO_2e$/year would be considered to have a potentially significant impact on the environment that could interfere with AB-32 GHG-reduction goals.

3.8.4 Impact Analysis

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. The Certified EIR indicated that approximately 623 million metric tons of carbon dioxide equivalent ($MTCO_2e$) would be generated by the Project. For the purposes of this analysis, as the Project area would increase by 10% over what was previously analyzed, it is reasonably and conservatively expected that emissions would also increase by 10%. Furthermore, as the Project is proposing to increase planned capacity to 5.4 mgd (average daily flow) over the previously-analyzed 3.6 (average daily flow) mgd—a 50 percent increase—it is reasonable to assume that emissions too would increase by approximately 50%. During project operations, biomethane would be generated by way of the anaerobic digester, which would be combusted to generate electricity. This would offset the greenhouse gas emissions generated off-site. The Project would continue to not exceed established EKAPCD thresholds. Impacts would be less than significant.

3.8.5 Comparison Analysis

As stated in the impact analysis section above, even with the expansion of the existing WWTP, and the increase in previously analyzed capacity of the WWTP, the proposed Project does not exceed any EKAPCD thresholds. Therefore, the analysis in the Certified EIR is still valid, and impacts would remain less than significant.

3.9 HAZARDS AND HAZARDOUS MATERIALS

Table 3-14: Hazards and Hazardous Materials Impacts

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

3.9.1 Baseline Conditions

Hazardous Materials

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The Department of Toxic Substances Control (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. DTSC's EnviroStor database provides DTSC's component of Cortese

List data (DTSC, 2010). In addition to the EnviroStor database, the SWRCB GeoTracker database provides information on regulated hazardous waste facilities in California, including underground storage tank (UST) cases and non-UST cleanup programs, including Spills-Leaks-Investigations-Cleanups sites, Department of Defense sites, and Land Disposal program. A search of the DTSC EnviroStor database and the SWRCB GeoTracker was performed on December 30, 2022. The EnviroStor database did not indicate any hazardous waste cleanup sites located on or in the immediate vicinity of the Project site.[14] The GeoTracker database search concluded that there is one active hazardous waste cleanup site on the property of the existing WWTP.[15] Additionally, there are several other waste cleanup sites located within the vicinity of the easement area (see Figure 2-2). Waste sites located on or within one quarter of a mile of the easement area are listed below:

- **Site 77 – Sludge Pit (DOD100094500):** Site 77 is located at the existing City WWTP. The waste site was a pit that was originally dug in 1986 and filled with oily sludge, before being eventually removed and refilled with native soils. While the Navy has determined that the waste site requires no further action or remediation, SWRCB staff disagree and recommend a remedial investigation.
- **AOC 129 – New Asbestos Dump (DOD100096200):** AOC 129 is located approximately 300 feet south of Pond 6 of the existing WWTP. The site contains Per- and Polyfluoroalkyl substances and remains an open case. The Navy is currently reviewing the site to determine the level of remediation required.
- **Site 13 – Oily Waste Disposal Area (DOD100076600):** Site 13 is located approximately 500 feet south of Pond 6 of the existing WWTP. The site previously experienced the dump of oily waste substances. While groundwater testing of the site revealed that contaminants were effectively removed, the case status for Site 13 remains open.
- **Site 7 – Michelson Lab Drainage Ditches (DOD100081200):** Site 7 is located approximately one quarter mile from the western edge of the proposed WWTP expansion area. This site has experienced the dump of chlorinated hydrocarbons and tetrachloroethylene substances coming from the Navy's Michelson Lab. The case status for Site 7 is open, and the Navy is currently reviewing the necessary remediation level for the site.

The existing WWTP uses hazardous materials such as sodium hypochlorite and alum during operations. While a spill of these materials has not previously been documented, the potential exists.

Airports

The Project site is located approximately 1.75 miles southeast of the Navy's Armitage Airfield. This airfield is used by the Navy to test aircraft and their weapon capabilities through the deployment of ordnances at test ranges near to the airfield. Aircraft at the airfield have been documented to cause both subsonic and supersonic booms. The Navy routinely fields complaints due to airfield operations relating to aircraft noise and ordnance use. According to the Naval Air Weapons Station, China Lake Air Installation Compatible Use Zone Study (AICUZ), the Project would be located in Zone 1 of the Armitage Airfield's Baseline Noise Contour, routinely experiencing noise volumes of up to 65 decibels (dB) (see Figure 3-2). While the airfield contains flight paths that go above the Project site, airfield operations are primarily limited to daytime hours.

Sensitive Receptors

Sensitive receptors are groups that would be more affected by air, noise, and light pollution, pesticides, and other toxic chemicals than others. This includes infants, children under age 16, elderly over age 65,

[14] (California Department of Toxic Substances Control 2022)
[15] (California State Water Resources Control Board 2022)

athletes, and people with cardiovascular and respiratory diseases. Locations with high concentrations of these groups would include daycares, residential areas, hospitals, elder care facilities, schools, and parks. The nearest potential location for a sensitive receptor to the existing WWTP is at the US Navy Base China Lake Sierra Vista RV Park, approximately 800 feet to the southeast of the site. The nearest area where there would be a large concentration of sensitive receptors is Richmond Elementary School, which is currently closed, and being rebuilt approximately one mile from the existing WWTP site.

3.9.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.9.3 Impact Analysis

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Would the project 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?

a and b) Less than Significant Impact with Mitigation Incorporated. Construction of the Project would result in the transportation and use of small quantities of hazardous materials associated with the equipment being utilized during construction. Such materials include, but are not limited to, gasoline, diesel, oil, lubricants, and solvents. Appropriate handling and disposal practices would result in low potential for accidental release of hazardous materials during the construction phases; however, there is the potential for small leaks or spills due to refueling of construction equipment. Standard construction and operational BMPs including the installation of regulated spill containment at each tank will minimize the potential for the release of construction-related fuels and other hazardous materials. These BMPs will also control storm water contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials. The Project would also utilize hazardous materials during operations of the facility. Regular deliveries of these materials would be received by the WWTP. Mitigation Measures **HAZ-1**, **HAZ-2**, and **HAZ-3** would ensure that any potential impacts resulting from the spill of a hazardous material during transportation, construction, or operations would be lessened to a less than significant level. **HAZ-1** would result in training and the establishment of BMPs, in addition to the establishment of a Hazardous Substances Control and Emergency Response Plan. **HAZ-2** would result in the requirement to have emergency spill cleanup materials on-site, adjacent to the construction area. **HAZ-3** would result in the creation of a Hazardous Materials Business Plan, setting standards for the handling and storage of hazardous materials on-site. Therefore, impacts would be less than significant with mitigation incorporated.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less than Significant Impact. The Project site is located approximately one quarter mile from the old Richmond Elementary School (southeast). The school is currently closed and being rebuilt approximately one mile away from the existing WWTP site. As discussed above, the Project would involve the use of small amounts of hazardous materials during construction of the Project, including gasoline, diesel, oils, lubricants, and solvents. Additionally, during operation of the Project, the WWTP would utilize hazardous materials – such as sodium hypochlorite. These materials are used in order to break down the wastewater

that is contained at the facility. While the Project would result in the use of hazardous materials, the school site will no longer be within one-quarter mile of an elementary school site. Therefore, impacts would be less than significant.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Less than Significant Impact. A search of the EnviroStor and GeoTracker hazardous waste site inventories was completed on December 30, 2022. While EnviroStor did not identify any hazardous waste sites within one quarter mile of the Project site, GeoTracker listed four sites within this proximity. The sites, which are discussed in further detail above, include Site 77, AOC 129, Site 13, and Site 7. Site 77 is located on the WWTP site and previously was used as a sludge pit but has since been filled with native soil. While the site has several hazardous waste sites on and in its vicinity, each site has been assessed by the Navy. The Navy has taken the appropriate steps and established waste management programs to ensure the health and safety of the WWTP employees. These waste management programs include the ongoing management of hazardous materials and wastes generated at the station, and the cleanup of sites from past waste disposal practices through the ongoing implementation of the Installation Restoration Program.[16] The case investigation status for these four sites remains open, and the Navy continues to work with the SWRCB to ensure that any potential impacts are minimized. Therefore, impacts would be less than significant.

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

No Impact. The Project site is located approximately 1.75 miles southeast of the Armitage Airfield. While the Project activities do not include housing, it would result in WWTP staff working and potentially living within two miles of the airfield. According to the NAWS China Lake AICUZ, the Project site would be located within Zone 1 of the Armitage Airfield's Baseline Noise Contour, routinely experiencing noise volumes of up to 65 dB (see **Figure 3-2**). The Project site is also located in an area that is below the airfield's flight paths. While the Project site is located in an area known to experience higher than normal levels of noise due to airfield operations, the existing WWTP is already located in this area. The expansion of the facility would not change result in a change from the baseline conditions. The site is and would continue to be located in Zone 1 of the Armitage Airfield's Baseline Noise Contour. Therefore, there would be no impact.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. The Project would not create any road closure during construction of the upgraded facility. The Project would result in truck deliveries to and from the Project site which could serve as impediments, however, deliveries would be required to occur within a specific timeframe as determined by the City and Navy. Therefore, impacts would be less than significant.

[16] (Naval Air Weapons Station China Lake 2002).

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. The Project site is not located within a State Responsibility Area (SRA), nor is it located within a very high fire hazard severity zone. [17] [18] The Project would not be located in an area known to be at risk of wildfire. Therefore, there would be no impact.

h) Would the project generate vectors?

Less than Significant with Mitigation Incorporated. The City of Ridgecrest has an active vector control program for the control of mosquitoes in the area. The Public Works Department administers the program. Mitigation measure HAZ-4 would ensure that potential impacts remain less than significant. HAZ-4 would require pre-treatment and adulticiding methods to be employed at the WWTP to control mosquitoes. Impacts would be less than significant with mitigation incorporated.

3.9.4 Mitigation

Mitigation measures **HAZ-1** through **HAZ-4** of the Certified EIR continue to be appropriate to mitigate for potential impacts due to hazards and hazardous materials and will be included as mitigation under the current proposal.

3.9.5 Comparison Analysis

The proposed Project modifications would impact a smaller number of acres and expand the WWTP on its current site. The analysis in the Certified EIR is still valid and with the implementation of the adopted mitigation measures (**HAZ-1**, **HAZ-2**, **HAZ-3, and HAZ-4**) impacts would remain less than significant.

[17] (CALFIRE 2022)
[18] (CALFIRE 2022)

3.10 HYDROLOGY AND WATER QUALITY

Table 3-15: Hydrology and Water Quality Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☒	☐	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

3.10.1 Baseline Conditions

The Project is located in eastern Kern County, within South Lahontan Hydrologic Region. The South Lahontan Hydrologic Region encompasses the area from the drainage divide between the Walker River and Mono Lake Basin to the divide south of the Mojave River. The region is bordered on the east by the Nevada State line and on the west by the crest of the southern Sierra Nevada and San Gabriel Mountains. Although the South Lahontan Hydrologic Region contains various waterways, none are located within the confines of Kern County. Due to this, the Project area solely relies on groundwater at this time.

The Project site is located within the Indian Valley Wells Groundwater Basin, an area of approximately 597 square miles or 382,000 acres.[19] Water resources, their occurrence, quality, and use are complex issues within the region. Groundwater in the area provides an important resource for domestic, agricultural, commercial and industrial use, and is the sole source for municipal, agricultural, and domestic water supply in the Indian Valley Wells Groundwater Basin. The Indian Wells Valley Groundwater Authority (IWVGA) manages the Indian Wells Groundwater Subbasin.

Groundwater

The Indian Wells Valley Groundwater Basin covers approximately 597 square miles in eastern California, which consists of area within Inyo, Kern and San Bernardino Counties.[20] The South Lahontan Hydrologic Region, which is approximately 18,100 square miles in area and consists of 76 groundwater basins, is bounded to the west by Sierra Nevada Mountains, to the north by the watershed divide between Mono Lake and East Walker River drainages, to the east by State of Nevada, and to the south by the San Gabriel and San Bernardino mountains and the divide between watersheds draining south toward the Colorado River and those draining northward. This hydrologic region includes the Owens, Mojave, and Amargosa River systems, the Mono Lake drainage system, and many other internally drained basins.

Indian Wells Valley is characterized by the topography of the Basin and Range Province, which is comprised of isolated, north-trending mountain ranges separated by desert basins. The lowest point of the Indian Wells Valley Groundwater Basin is China Lake at an elevation of 2,150 feet above sea level. The Indian Wells Valley Groundwater Basin is located in the west-central portion of the South Lahonton Hydrologic Region. The Sierra Nevada Range bounds the basin to the west, the Coso Range to the north, the Argus Range to the east, and the El Paso Mountains on the south. China Lake is situated in the central northeastern valley and is the primary natural groundwater discharge point.[21]

The topography of the Project site is characterized by low relief and elevations that gently slope toward China Lake at an approximately slope of 0.4 percent. China Lake is approximately 2.65 miles to the north-northeast of the Project site.

Potable water for the Indian Wells Valley is supplied exclusively by groundwater. Most this water is supplied to area inhabitants by the Indian Wells Valley Water District (IWVWD), Inyokern Community Services District, NAWS China Lake, or by private wells. Public-supply wells in Indian Wells Valley are completed to depths between 240 and 800 feet.[22]

The Indian Wells Valley Groundwater Basin is virtually closed, and there is very little groundwater underflow to or from adjacent valleys. As a closed basin, surface drainage does not “exit” the basin and flow from the surrounding mountains drain toward China Lake, or other small playas in the area. Evapotranspiration (ET) from the China Lake area (playa) areas was the primary outflow from the Indian Wells Valley Groundwater Basin until the about 1950s or 1960s. At this time, groundwater pumping began to exceed ET rates. Prior to this time, ET from the playa was the primary outflow of groundwater from the Indian Wells Valley Groundwater Basin. Current groundwater pumping rates have intercepted water flowing east towards the playa, reducing the amount of ET from the Indian Wells Valley Groundwater Basin.

The Indian Wells Valley Groundwater Basin is in overdraft of its water budget due to overreliance on groundwater pumping. In 2014, with the enactment of the Sustainable Groundwater Management Act

[19] (California Department of Water Resources 2015)
[20] Ibid
[21] Ibid
[22] (United States Geological Survey 2013).

(SGMA), this basin will be required to come into balance by the year 2040. To do this, IWVGA has adopted a Groundwater Sustainability Plan, outlining strategies and policies for achieving water balance within the Indian Wells Valley Groundwater Basin.

Hydrogeology

A comprehensive groundwater monitoring program for Indian Wells Valley was undertaken by the Indian Wells Valley Cooperative Groundwater Technical Advisory Committee and Geochemical Technologies Corporation (Groundwater Management Group) culminating in a final report that was published in March 2008. According to the AB-303 Final Report[23], previous investigators have divided the saturated unconsolidated Quaternary deposits in the valley into two main aquifers (shallow and deep). The shallow aquifer located within the eastern portion of the valley is comprised of young lacustrine deposits and shallow alluvium underlain by lacustrine deposits. The underlying deep aquifer is comprised of the saturated alluvium beneath the shallow aquiver with grain sizes ranging from clay to gravel. The thickness of the deep aquifer is not entirely known as insufficient data exists to completely define the lower boundary; however, it is known to be at least approximately 1,750 feet in the Intermediate Wellfield area[24] between Inyokern and Ridgecrest. The lacustrine deposits have been classified as a "confining clay" by previous geologists and reach across the eastern part of the valley. The confining clay base of the shallow aquifer is not well defined due to the stratigraphic inter-fingering of lacustrine and alluvium deposits.[25]

Groundwater from the shallow aquifer has been characterized as having high concentrations of total dissolved solids. Groundwater from the deep aquifer has been characterized as having total dissolved solids concentrations generally less than 1,000 ppm, which is generally much lower than the total dissolved solids in the shallow aquifer.[26] The drinking water supply in the Indian Wells Valley is supplied solely by the deep aquifer and is used by the NAWS China Lake, by the community water districts, and agricultural and industrial users.[27]

The Groundwater Management Group used funds issued by an AB 3030 grant (local groundwater assistance program) to install and sample eight wells in the Indian Wells Valley in order to obtain information on groundwater where groundwater data was historically lacking. Additionally, the Groundwater Management Group study also included sampling 46 wells for water quality parameters such as: general chemistry, general physical parameters, stable and radio-isotopic parameters. This study was used to develop the hydrogeology of the Indian Wells Valley Groundwater Basin that is presented below.
The four hydrostratigraphic features that have been identified in the Indian Wells Valley Groundwater Basin., include: 1) Fine-Grained Sediment Plug, 2) Gravel Zone, 3) High Gradient, and 4) Playa.

- A Fine-Grained Sediment Plug is located approximately three to four miles east of the Sierra Nevada mountain front and trends north south. The upper contact of this feature begins at depth of approximately 340 feet bgs and sediments may be as much as 1,340 feet thick. The areal extent of this deposit is not well defined due to limited borehole data.

- The Gravel Zone is a west-east trending area of coarse-grained high permeability sediments. This area is located from the mouth of Indian Wells Canyon to approximately the northwest portion of Ridgecrest, extends approximately two miles north south, and fines to the east. This region is referred to the Inyokern and Intermediate Areas and contains high volume production wells. Wells

[23] (Indian Wells Valley Cooperative Groundwater Technical Advisory Committee 2010)
[24] (U.S. Bureau of Reclamation 1993)
[25] (Indian Wells Valley Cooperative Groundwater Technical Advisory Committee 2010)
[26] Ibid
[27] Ibid

within the Ridgecrest city limits are believed to be associated with this Gravel Zone; however, wells in this area have a higher percentage of fines and, therefore, their groundwater production is lower than the wells to the west.

- The High Gradient area extends from the El Paso sub-Basin into the main Indian Wells Valley Groundwater Basin near the southwestern portion of the valley. Groundwater gradients in this area have been measured at approximately 100 feet per mile.
- The Playa feature is located in the area of China Lake. The thickness of these sediments is not known but are likely several tens of feet thick. Deposits are highly micaceous, silt sandy silt, and fine sand with occasional plastic clays. Shallow water beneath China Lake is highly saline and unfit for most uses.

Recharge and Discharge in the Indian Wells Valley Groundwater Basin: The Indian Wells Valley area is drained internally. Runoff from the surrounding mountains drains in the direction of the dry lake beds in the lower portion of the valley.[28]

Three playas which include China Lake, and two smaller playas, Mirror and Satellite Lakes, are situated in the east-central part of the valley. These playas are the primary valley surface water and groundwater discharge points.[29] In the central areas of the Indian Wells Valley, surface elevations range from approximately 2,150 feet above msl in the northeast to 2,400 feet above msl in the southwest.[30]

As discussed previously, the most recent hydrogeologic system conceptual model for the Indian Wells Valley Groundwater Basin is that the basin is closed, and the majority of groundwater inflows are principally from the mountain front recharge off of the Sierra Nevada and subflow from the northern areas of the basin. Basin recharge results from precipitation infiltration, Sierra Nevada runoff, and anthropogenic recharge from excess irrigation and wastewater treatment systems. The approximate annual average recharge within the Indian Wells Valley Groundwater Basin is 7,650 AFY.[31]

In the Indian Wells Valley Groundwater Basin, groundwater is pumped for agricultural, industrial, municipal, and domestic purposes. Approximately 20,800 AFY was pumped in 2020, the last year for which data was available. Municipal and agricultural uses accounted for approximately 32 percent of that total, industrial uses accounted for 12 percent, and private well owners accounted for 24 percent. In general, it is not well documented how much groundwater is pumped by smaller water providers and domestic well owners for potable use and domestic irrigation. As of 1993, the USBR estimated approximately 3,000 private wells existed in the Indian Wells Valley Groundwater Basin. Of that 3,000, it was estimated that approximately 550 of those were operational and were producing approximately 2,099 AFY of groundwater. A total of 1,728 AFY were estimated to have been pumped for residential use in 1996. In 1997, the Indian Wells Valley Groundwater Cooperative Management Group estimated, there were 120 residential cooperative wells and 670 individual domestic wells.[32]

Annual pumping throughout the Indian Wells Valley Groundwater Basin rose from approximately 1,000 AF in 1920 to approximately 6,000 AF by 1950. Prior to the existence of NAWS China Lake in the late 1940s, groundwater was chiefly used for mining operations in Searles Valley. Groundwater for irrigation use was also occurring at this time, however only limited documentation on irrigated acres and volume of pumped

[28] (United States Geological Survey 2013)
[29] (Indian Wells Valley Cooperative Groundwater Technical Advisory Committee 2010)
[30] (California Department of Water Resources 2015)
[31] (Indian Wells Valley Groundwater Authority 2020)
[32] Ibid

groundwater was available. A published hydrogeologic study of the Indian Wells Valley Groundwater Basin estimated that by the late 1950s to early 1960s groundwater pumping equaled or exceeded the sum of natural recharge and subflow. From the 1950s through 2006, the number of groundwater wells increased, however pumping has remained concentrated in the same regions over that timeframe, apart from more production wells being installed in the southwest area of the basin.

Indian Wells Valley Water District: The Project site is not located within the current boundaries of the IWVWD but is located within the IWVWD sphere of influence. The IWVWD covers an area of approximately 37 square miles located in the southeastern part of the Indian Wells Valley. Water from the IWVWD comes from ten wells that pump from the Indian Wells Valley aquifer. Water is pumped from the wells to eleven water reservoirs with a combined storage capacity of about 19.9 million gallons.[33] Water demand is the highest during the summer months when the average water use in the district is approximately 360 mgd. Water demand is the lowest during the winter months when the average monthly water use is approximately 125 million gallons (384 AF).[34]

Aquifer Properties: Properties used to define the aquifer characteristics include hydraulic conductivity, transmissivity, and storage coefficient. Hydraulic conductivity is the property of the aquifer material to transmit water and is expressed in units of feet per day (ft/d). Transmissivity is the hydraulic conductivity multiplied by the thickness of the sediments capable of storing water and is expressed in units of gallons per day per foot or feet squared per day (ft^2/d). Storage coefficient refers to the percentage of water that can be released from the aquifer material pore space and is used for unconfined or water table conditions.[35]

In the development of a groundwater flow model and hydrologic study for the Indian Wells Valley Groundwater Basin, Brown and Caldwell used hydraulic conductivity values ranging from 0.1 ft/d to 100 ft/d. These values were based on geologic logs, pre-existing groundwater modeling studies, and interpretations based on local geology, depositional environments, and groundwater flow regime. The model showed that the areas with the highest hydraulic conductivities are generally located immediately east of the Sierra Nevada. Areas of the Indian Wells Valley Groundwater Basin with lower hydraulic conductivities are localized and distributed throughout the Basin.[36]

Published aquifer testing data report transmissivity values from less than 1,400 ft^2/d to 36,800 and 44,000 ft^2/d to 155,000 ft^2/d. Both sets of values were based on aquifer testing and geologic data. The Brown and Caldwell (2009) model used specific yield ranges of 0.05 to 0.15. Reported well yields in the lower aquifer are more than 1,000 gpm and some wells consistently yield more than 2,000 gpm. The Indian Wells Valley Groundwater Basin has an estimated storage capacity of about 2,200,000-af and 5,120,000-AF. The calculated storage of 2,200,000-AF is based on 1921 water levels as a steady state limit and 200 feet below this level as the economically feasible limit to extract groundwater.[37]

[33] (Indian Wells Valley Water District 2022)
[34] (AECOM Inc 2009)
[35] (AECOM Inc 2009)
[36] (AECOM Inc 2009)
[37] (AECOM Inc 2009)

Groundwater Quality:

Table 3-16. Summary of 2022 Water Quality Data

Summary of 2022 Water Quality Data[38]	
Analyte	Indian Wells Valley Water District General Water Quality (Range values reported in mg/L unless otherwise noted)
Arsenic	ND- 7.5
Bicarbonates (HCO_3)	84-140
Boron	0.200-2.2
Calcium	3.1-37
Chloride	15-220
Fluoride	0.6-1.3
Magnesium	ND-5.4
Nitrate (NO3)	ND-2.8
Nitrate/Nitrite (N)	ND-2.1
Sodium	42-200
Sulfate	23-60
Total Hardness ($CaCO_3$)	7.8-110
Total Dissolved Solids (TDS)	190-580
Gross Alpha Particle Activity (in pCi/L)	ND-4.9
Vanadium	ND-0.056
pH (units)	7.9-9.3

Key: mg/L – milligrams per liter, ND – not detected

Surface Water

In the vicinity of the Project Site, the topography slopes gently downward to the north at a gradient of approximately 0.4 percent towards the China Lake playa. Ground surface elevations at the site range from approximately 2,222 feet above mean sea level (msl) in the south to 2,213 feet above msl in the north.

Surface water in the Indian Wells Valley drains from the surrounding mountains toward China Lake, a dry lake or playa, just north of Ridgecrest, which is located approximately 2.65 miles north of the Project site.

Due to the high temperatures, low precipitation, and permeable soils, local drainage is intermittent and occurs as dry washes. Surface runoff and water discharged from the El Paso Mountains move toward lower altitudes where there are alluvial deposits and gentle slopes. As the surface water descends, seepage into the permeable deposits occurs and evaporation increases.[39]

3.10.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project. Additionally, the following laws and regulations have been enacted in California since the preparation of the Certified EIR.

State

Sustainable Groundwater Management Act of 2014

On September 16, 2014, a three-bill legislative package was signed into law, composed of AB 1739, SB 1168, and SB 1319, collectively known as the SGMA. The Governor's signing message states "a central feature of these bills is the recognition that groundwater management in California is best accomplished locally". SGMA provides a framework for sustainable management of groundwater supplies by local

[38] (Indian Wells Valley Water District 2022)
[39] (AECOM Inc 2009)

authorities, with the potential for state intervention, if necessary, to protect the resource. The act requires the formation of local GSA that must assess conditions in their local water basins and adopt locally based management plans. The groundwater basin that serves Ridgecrest has been designated by the Department of Water Resources as high-priority, placing an emphasis on the need for an adopted groundwater sustainability plan (GSP) for the basin. The Indian Wells Valley Groundwater Basin GSP was approved by the California Department of Water Resources (DWR) and released to the public in January of 2020.[40]

California Streambed Alteration Agreement

California Fish and Game Code Sections 1600–1616 require that any entity that proposes an activity that would substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, must notify CDFW. The CDFW would require a Lake or Streambed Alteration Agreement if the Department determines that the alteration may adversely affect fish and wildlife resources. The Agreement includes conditions necessary to protect those resources. The Agreement applies to any stream, including ephemeral streams and desert washes.

Assembly Bill 746

In January 2018, Assembly Bill 746 went into effect requiring water utilities to collect lead samples in all daycare, preschool, and kindergarten through 12th grade schools on public property to ensure students have access to safe drinking water. If a private school wishes to have their water sampled, the head of the school may also request lead testing from their water provider.

3.10.3 Impact Analysis

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Significant and Unavoidable with Mitigation Incorporated. During Project construction, there may be exposure of pollutants which may degrade water quality. The Project is required to prepare a SWPPP and implement effective erosion control BMPs. The SWPPP will describe stormwater and non-stormwater control measures that will be used to minimize the discharge of pollutants to the maximum extent practicable. This will ensure less than significant impacts during construction.

Groundwater, source water, and influent wastewater statistics are expected to remain the same after construction of the new WWTP improvements and expansion. However, it will differ from the existing facility, as it will be designed from the outset for nitrogen removal and will perform more effectively in BOD and TSS removal. No tertiary treatment and disinfection is proposed at this time.

Effluent from the water treatment system will be contained in percolation ponds, and ponds 8, 9, and 11 would be lined as a part of the Project. By lining these ponds, it will allow them to be fully loaded even during a wet year with a minimal chance of effluent surfacing down gradient of the ponds. In addition, the RWQCB requires the effluent to meet certain concentration levels for certain parameters. Effluent discharge requirements are dictated by the Lahontan RWQCB. Measuring these constituents assures that the treatment plant operates properly to remove necessary pollutants and protects the surface waters and groundwater that receive the effluent. When the effluent total dissolved solids (TDS) concentration is increased in the root zone by evapo-transpiration during irrigation of the golf course at the NAWS site, the concentration in the percolate will be higher than the background at the NAWS site.

[40] (Indian Wells Valley Groundwater Authority 2020)

This impact even with mitigation measures HYD-1, HYD-2, HYD-3, HYD-4, and HYD-5 would be significant and unavoidable.

The Project will not adversely impact the flow of groundwater or groundwater quality; rather it will serve to improve groundwater quality by introducing an improved wastewater treatment process. These improvements would increase the level of treatment to a secondary level with denitrification, reducing the potential impacts to groundwater beneath the site and providing NAWS up to 525 AFY of effluent for support of the Tui Chub and irrigation of the existing golf course. This method of treatment would continue to recharge the groundwater basin with effluent of an improved water quality. However, as discussed in the Certified EIR, the concentrations of TDS would still exceed the concentration in the ground water. The Project will also be required to comply with Indian Wells Valley Water District and RWQCB regulations to minimize the polluted load that will be percolated to the groundwater. By complying with these standards, the proposed Project will minimize impacts to groundwater. Although the adherence to local, State, and federal requirements and the improved secondary treatments process will minimize the impacts associated with water quality standards for TDS impacts will be significant but unavoidable, however mitigation measures as listed below will help to further minimize the impact.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than Significant Impact. Construction and operation of the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Construction of the Project at its deepest point would be 27 feet below surface elevation for the installation of the anaerobic digesters and thus wouldn't disturb or impact groundwater at that depth. The Project would not adversely affect groundwater supplies during construction or operational activities. Implementation of the Project would increase the level of wastewater treatment to a secondary level with denitrification, reducing the potential impacts to groundwater beneath the site and providing NAWS China Lake up to 525 AFY of effluent for support of the Tui Chub and irrigation of the existing golf course. This method of treatment would recharge the groundwater basin with effluent of an improved water quality and provide recycled water thus decreasing the need for groundwater pumping. Therefore, the Project would result in less than significant impacts.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. result in substantial erosion or siltation on- or off-site;

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv. impede or redirect flood flows?

Less than Significant Impact. The Project site consists of vacant and disturbed land that is relatively flat, with a gentle gradient. Construction and operation of the Project would not alter the course of a stream or river, as none exists on site or within the area. The City of Ridgecrest reviews each development project for drainage conveyance and storage of stormwater. Any necessary on-site improvements would be constructed to the standards and specifications outlined by the City. The Project would also be required to complete a SWPPP, which would ensure that erosion and sediment control is maintained. Therefore, any impacts to site drainage patterns would be less than significant.

d) Would the project in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundations?

No Impact. As shown in Figure 3-1, the Project is located approximately 1.02 miles northwest of the nearest 100 Year Flood Zone. The Project site is also located approximately 195 miles east of the nearest coastline and would not be at risk of flood hazards associated with a tsunami. Additionally, there is no large body of water near the site that may result in a seiche during an earthquake event. Thus, no impacts related to the release of a pollutant in a flood hazard, tsunami, or seiche zone would occur as a result of the Project.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less than Significant Impact. The Project would be required to comply with all applicable federal, State, and local water quality standards. The Project is consistent with the planned land use designation for the site and would not significantly increase water demand as addressed in the Indian Wells Valley Water District Urban Water Management Plan. Project implementation would actually provide recycled water as the City has already contractually committed approximately 2,000 AFY of WWTP effluent to IWVGA for recycling purposes.[41]

Groundwater would not be extracted as a part of the Project. Implementation of the Project would provide an improved source of recycled water supply for irrigation, thereby reducing pumping demands and drawdown impacts on the Indian Wells Valley Groundwater Basin, which is impacted by decreasing water levels. As a result, the Project would be consistent with the goals of the GSP for the Indian Wells Valley Groundwater Basin, which was completed in accordance with SGMA.

The Project would not conflict with a water quality control plan or sustainable groundwater management plan. Therefore, impacts would be less than significant.

3.10.4 Mitigation

Mitigation measures **HYD-2**, **HYD-3, HYD-4**, and **HYD-5** of the Certified EIR continue to be appropriate to mitigate for potential impacts to hydrology and water quality and will be included as mitigation under the current proposal. The mitigation measure **HYD-1** for hydrology and water quality contained within the Certified EIR shall be replaced within the following mitigation measure. **HYD-1** contained herein uses the same mitigating language as **HYD-1** of the Certified EIR; however, it has been updated to reflect the discontinued watering of the alfalfa fields near the former City WWTP site.

[41] (Indian Wells Valley Water District 2021)

HYD-1 The City shall prepare and implement an irrigated land nutrient management plan for the golf course. This will help insure that nutrients (N), water and fertilizer will be applied at agronomic rates only and thus do not adversely affect groundwater.

Even with mitigation measures **HYD-1**, **HYD-2**, **HYD-3**, **HYD-4**, and **HYD-5**, impacts to effluent TDS concentration, would still be considered Significant and Unavoidable due to the fact that the effluent water even after treatment would still have higher concentration of TDS than the groundwater.

3.10.5 Comparison Analysis

The proposed Project modifications would result in a better functioning WWTP that would be able to process wastewater more effectively and efficiently. Furthermore, no additional wastewater treatment ponds would be constructed at the City site, and therefore the areas with potential to be impacted by construction of wastewater treatment ponds would be lessened than what was previously analyzed under the Certified EIR. The analysis in the Certified EIR is still valid and with the implementation of **HYD-1**, **HYD-2**, **HYD-3**, **HYD-4**, and **HYD-5** impacts to TDS would still remain significant and unavoidable.

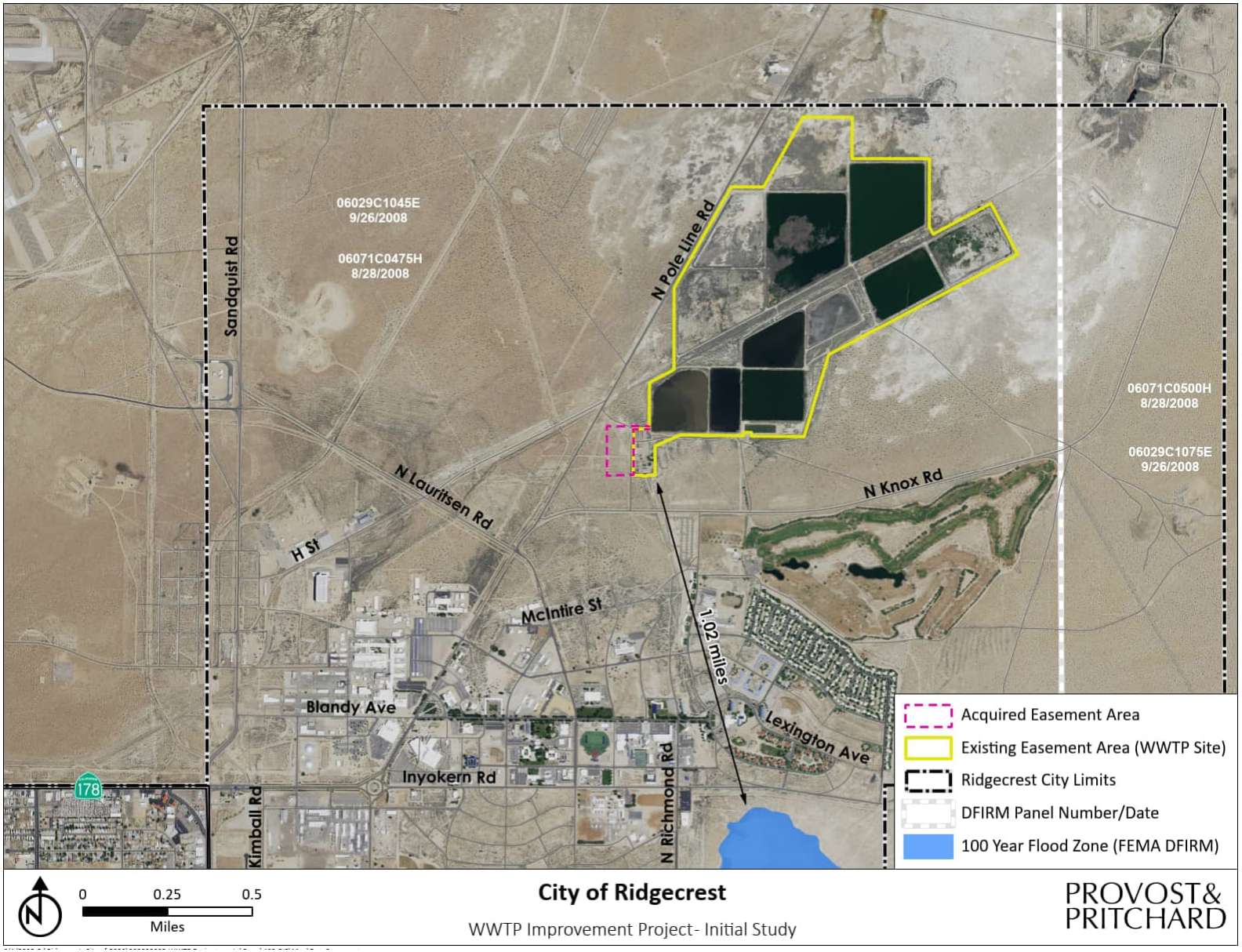


Figure 3-1: FEMA Map

3.11 LAND USE AND PLANNING

Table 3-17: Land Use and Planning Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Physically divide an established community?	☐	☐	☐	☒
g) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

3.11.1 Baseline Conditions

The Project site is located northeast of the intersection of Knox Road and Pole Line Road on NAWS China Lake. The site is an approximately 352-acre easement granted by the Navy for the City to operate the WWTP. The Project would utilize an additional 7.67 acres of land to the west of the current facility to complete the upgrade and expansion of the existing WWTP, and the construction of pond 12. This land would be added to the existing easement between the Navy and the City for construction of the improved WWTP.

3.11.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.11.3 Impact Analysis

a) Would the project physically divide an established community?

No Impact. The Project, which consists of improvements to the existing WWTP, and ultimate expansion of the existing facility would occur on the existing 352-acre easement used to operate the WWTP and would require the development of approximately 7.67 acres of land to the west of the current facility for the facility expansion and the construction of pond 12. There are no established communities within the 352-acre easement granted to the City by the Navy to operate the WWTP. As a result, the Project does not have the potential to divide an established community. There would be no impact as a result of the Project.

b) Would the project cause a significant environmental conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The Project site is subject to various long-range plans and development codes. Land use plans, policies, and regulations that are applicable to the site include the following:

- CLUMP for NAWS China Lake
- City of Ridgecrest General Plan

- NAWS China Lake AICUZ Study
- NAWS China Lake Integrated Natural Resources Management Plan
- Kern County Airport Land Use Compatibility Plan

Based on the land use designations, zoning, policies, and development standards identified in the Regulatory Setting section for each of the respective documents, no inconsistencies with policies, codes or other regulations were identified. Therefore, this portion of the Project is consistent with the above noted documents. No impact would occur.

3.11.4 Mitigation

Mitigation measure **LU-1** contained within the Certified EIR has been deemed to be no longer applicable to the current Project. No new mitigation measures are necessary.

3.11.5 Comparison Analysis

The Certified EIR analyzed the construction of effluent disposal ponds on the City site. These locations could have potentially impacted park space on City property. The proposed Project modifications no longer include any locations on City property. The analysis in the Certified EIR is still valid and because no construction would take place on City property, mitigation measure **LU-1** would not be required for the modified Project.

3.12 MINERAL RESOURCES

Table 3-18: Mineral Resources Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.12.1 Baseline Conditions

The Project site is located in eastern Kern County, on NAWS China Lake. The Kern County General Plan, states that the Project site is not located on land that has been identified as containing mineral resources.[42] According to the California Department of Conservation, there are no active mines, active wells, or mineral resources located on the Project site.[43] [44] [45] The Project would be located at the existing WWTP and on an easement adjacent to the existing WWTP to the west. The area in which new facilities would be constructed is currently vacant and under ownership of the Navy. The nearest soil and gravel extraction site is located approximately five miles to the southwest of the Project site.

3.12.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.12.3 Impact Analysis

a) Would the project 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?

No Impact. The Project site is not known to contain a mineral resource that would be of value to the region and the residents of the state. The construction and operation of the upgraded WWTP would not result in the loss of a known mineral resource. Therefore, there would be no impact.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The Project is not located on a site that is known to contain locally important minerals, nor is it located in an area that has been designated for mineral resource conservation by any land use plan.

[42] (Kern County 1982)
[43] (California Department of Conservation 2016)
[44] (California Department of Conservation 2020)
[45] (California Department of Conservation 2022)

The project would not result in the loss of any locally important minerals. Therefore, there would be no impact.

3.12.4 Comparison Analysis

The proposed Project modifications would not disturb, recover, or harvest any mineral resources as part of Project activities. The analysis in the Certified EIR is still valid and there would be no impacts.

3.13 NOISE

Table 3-19: Noise Impacts

Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.13.1 Baseline Conditions

The Project would be located at the current City of Ridgecrest WWTP. The current facilities at the WWTP emit constant humming and related noise emitted from equipment at the WWTP. While the WWTP emits constant levels of noise due to its equipment, this equipment is located approximately 800 feet from the nearest use and is not audible at this distance. The Project site is located approximately 1.75 miles southeast of the Navy's Armitage Airfield. This airfield is used by the Navy to test aircraft and their weapon capabilities through the deployment of ordnances at test ranges near to the airfield. Aircraft at the airfield have been documented to cause both subsonic and supersonic booms, contributing to varying levels of increased noise within the area. According to the AICUZ, the Project would be located in Zone 1 of the Armitage Airfield's Baseline Noise Contour, routinely experiencing noise volumes of up to 65 dB (see Figure 3-2). While the airfield contains flight paths that go above the Project site, airfield operations are primarily limited to daytime hours.

While none exist at the current WWTP, high levels of noise present the possibility of sensitive receptor groups being affected. The nearest potential location for a sensitive receptor to the existing WWTP is at the US Navy Base China Lake Sierra Vista RV Park, approximately 800 feet to the southeast of the site. The nearest area where there would be a large concentration of sensitive receptors is the Richmond Elementary School, which is currently closed and being relocated approximately one mile to the southeast of the existing WWTP.

The site is located away from other uses and is not directly adjacent to a public roadway. Operations at the existing WWTP include the use of equipment that emit constant levels of noise and humming during their use.

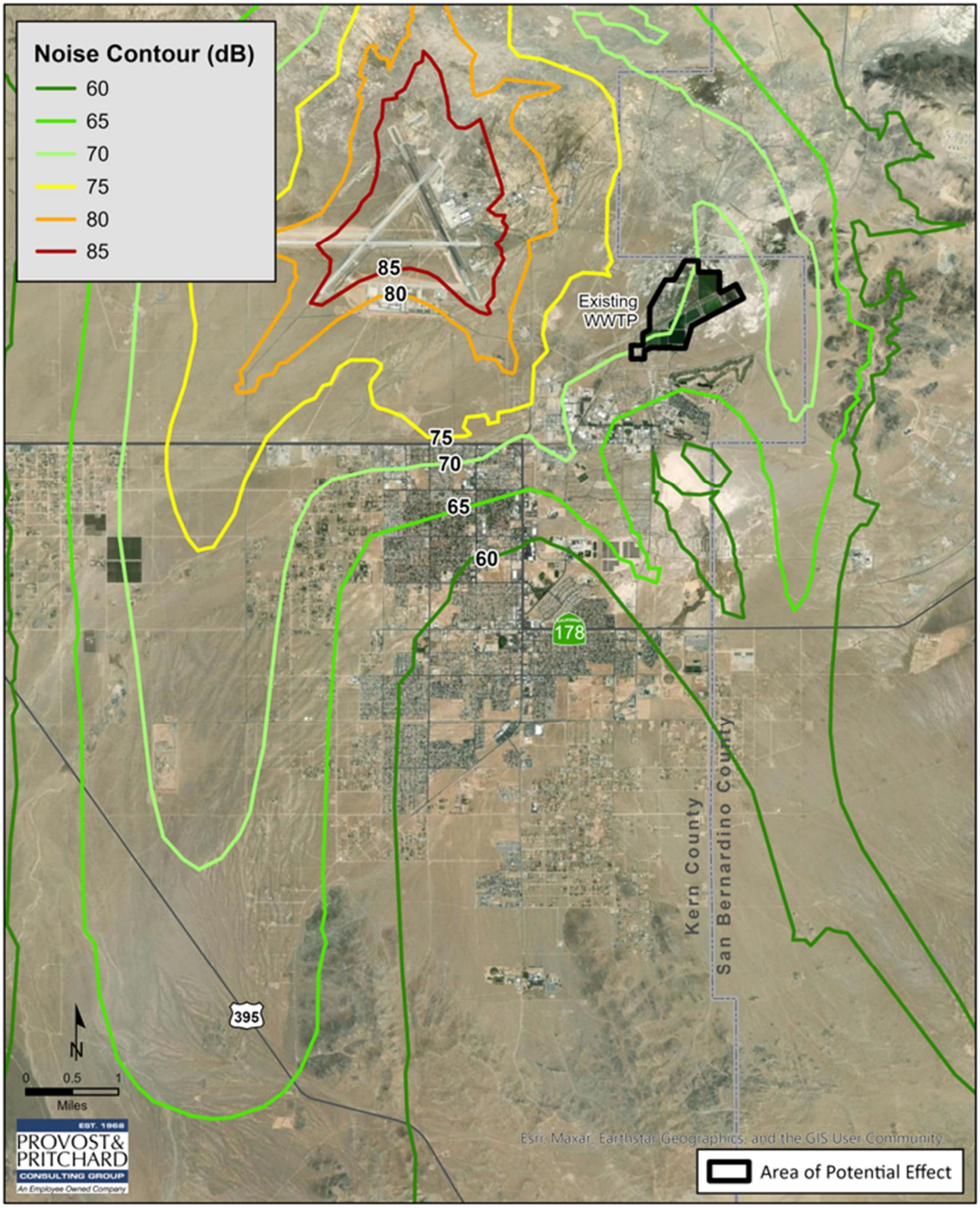


Figure 3-2: Noise Contour Map

3.13.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.13.3 Impact Analysis

a) Would the project 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?

Less than Significant Impact. The Project would result in the generation of temporary construction noise that would exceed applicable noise standards. Noise generation would result from the construction activities associated with the Project, which would require excavation, cut and fill, rough and finish grading, trench work, forming and pouring concrete forms and foundations, pipe and metal cutting, installation and assembly of equipment, pipes, pumps, valves and mechanical equipment. Construction would also require the use of generators, air compressors, and pneumatic powered tools. Construction noise would vary greatly depending on the construction activity performed, type of specific equipment, condition of equipment used, and layout of the construction site. Table 3-20 and Table 3-21 below show the typical noise levels resulting from construction phases and equipment.

Table 3-20: Typical Construction Phase Noise Levels

Typical Construction Phase Noise Levels	
Construction Phase	**Noise Level (dBA, Leq)[1]**
Ground Clearing	84
Excavation	89
Foundations	78
Building Erection	85
Finishing	89
[1]Average noise levels 50 feet from the noisiest source and 200 feet from the rest of the equipment associated with a given construction phase. Noise levels correspond to commercial projects in a typical urban ambient noise environment. Source: Bolt, Beranek and Newman, U.S. EPA, 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971	

Table 3-21: Typical Noise Levels from Construction Equipment

Typical Noise Levels from Construction Equipment	
Construction Phase	**Noise Level (dBA, Leq at 50 feet)**
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76

Typical Noise Levels from Construction Equipment	
Construction Phase	Noise Level (dBA, Leq at 50 feet)
Dump Truck	88
Pile Driver	101
Rock Drill	98
Pump	76
Pneumatic Tools	85
Backhoe	85
Source: Cunniff, 1977; Bold et al. 1971.	

The nearest sensitive receptor areas to the Project site are located approximately one quarter mile to the southeast at the United States Navy Base China Lake Sierra Vista Recreational Park and the China Lake Golf Course. According to the NAWS China Lake AICUZ, portions of this area are located within Zone 1 of the Armitage Airfield's Baseline Noise Contour and regularly experience noise levels up to 65 dB. Table 3-22 below shows estimated noise levels at the nearest point of the noise-sensitive receptors for each phase of construction, assuming noise levels are as described in the preceding two tables, and that construction noise is reduced by 6 dB for each doubling of distance:

Table 3-22: Estimated Construction Noise Levels at Sensitive Receptors

Estimated Construction Noise Levels at Sensitive Receptors	
Construction Phase	Noise Level at Nearest Sensitive Receptor (dBA Leq)[1]
Ground Clearing	54
Excavation	59
Foundation	48
Finishing	59
[1]Leq refers to equivalent continuous sound level.	

According to the State of California Governor's Office of Planning and Research 2003 General Plan Guidelines, noise exposure in the 50 to 60 dB range is considered to be "normally acceptable" for schools, golf courses, and other recreation type areas.[46] Therefore, short-term impacts to these receptors from construction noise would be less than significant. Additionally, while noise during operation of the facility is expected, the new facility would not result in substantially increased levels of noise being generated than what currently exists on the City's existing facilities. Therefore, impacts resulting from noise generated during operational activities of the new WWTP would be considered less than significant.

b) Would the project result in generation of excessive ground borne vibration or ground borne noise levels?

Less than Significant Impact. Construction activities would utilize equipment that would temporarily result in the generation of ground borne vibration originating at the Project site. Construction at the Project site would require excavation, cut and fill, rough and finish grading, trench work, forming and pouring concrete forms and foundations, pipe and metal cutting, installation and assembly of equipment, pipes, pumps, valves and mechanical equipment. Construction would also require the use of generators,

[46] (State of California Govenor's Office of Planning and Research 2003)

air compressors and pneumatic powered tools. Construction vibration would vary greatly depending on the construction activity performed, type of specific equipment, condition of equipment used, layout of the construction site. Similar to the generation of noise resulting from Project construction, vibration levels would diminish with distance from its origin point. Due to the distance from the United States Navy Base China Lake Sierra Vista Recreational Park and the China Lake Golf Course, vibration levels are not expected to result in significant impacts. Therefore, impacts would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Project site is located approximately 1.75 miles southeast of the Armitage Airfield. While the Project does not propose any housing, it would result in WWTP staff working near the airfield. The expansion of the facility would not change result in a change from the baseline conditions. The site is and would continue to be located in Zone 1 of the Armitage Airfield's Baseline Noise Contour. Therefore, there would be no impact.

3.13.4 Mitigation

Mitigation Measures **N-1** through **N-3** contained within the Certified EIR have been deemed to be no longer applicable to the current Project. No new mitigation measures are necessary.

3.13.5 Comparison Analysis

The proposed Project modifications would impact a smaller number of acres and would not involve any construction on City property. The proposed Project would install new equipment and would be built at the same location as the existing WWTP. Noise and vibration levels from the airstrip would not change as a result of the project; however, with the implementation of new equipment and new well insulated building per CBC code, WWTP noise would be reduced. In addition, the proposed Project modifications no longer include any locations on City property. The analysis in the Certified EIR is still valid and because no construction would take place on City property, mitigation measures **N-1** through **N-3** would not be required.

3.14 POPULATION AND HOUSING

Table 3-23: Population and Housing Impacts

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

3.14.1 Baseline Conditions

According to the California Department of Finance, the population of the City of Ridgecrest was approximately 28,061 in January 2022[47]. The City of Ridgecrest General Plan notes that population in the community is strongly linked to changes in employment at Naval Air Weapons Station NAWS China Lake. Between 2000 and 2014, the City experienced a population increase of 4.0 percent.[48] Additionally, as the closest urban area to NAWS China Lake, Ridgecrest enjoys a symbiotic relationship with the installation. The Navy is the largest employer in the Indian Wells Valley, providing a significant economic thrust for the Valley and adding to the economic base of the City of Ridgecrest. China Lake provides direct employment for 620 military personnel and full-time employment for 4,100 civilians.[49] Additionally, the installation provides employment for 1,734 on-board and off-site contractors.[50] In return, the City of Ridgecrest provides housing, support services, and a range of community services to these employees.

3.14.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.14.3 Impact Analysis

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

Less than Significant Impact. Project implementation would provide additional peak capacity within the City's wastewater treatment and disposal system, thus indirectly leading to population growth in the area. The purpose of the Project is to upgrade and expand the existing WWTP. This will allow the system

[47] (California Department of Finance 2023)
[48] (United States Census Bureau 2022)
[49] (Department of Defense 2023)
[50] Ibid

to accommodate anticipated growth within both the City and at NAWS China Lake per the City of Ridgecrest General Plan and the NAWS China Lake Comprehensive Land Use Management Plan (CLUMP). The City of Ridgecrest 2030 General Plan Update EIR assumed full buildout of the General Plan planning area by 2030, with a resulting population of 50,000. While the CLUMP does not specifically address population growth within the base, it does acknowledge that off-base planning efforts and land use policies will result in development, thereby resulting in a population increase. Therefore, while population growth and related development may occur as an indirect result of Project implementation, the growth and development has previously been contemplated and is in fact part of the impetus for the Project. Impacts would be less than significant.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project would be located in the same physical location as the existing WWTP. The upgrade and ultimate expansion of the WWTP would require the development of approximately 7.67 acres of land to the west of the current facility. This land would be added to the existing easement between the Navy and the City for construction of the improved WWTP. Neither the existing location nor the land that will be utilized for the expansion contain housing or is planned for residential development. As a result, there would be no impact.

3.14.4 Comparison Analysis

The proposed Project modifications would not generate population growth that has not already been analyzed by the City's General Plan. No land designated for housing would be utilized for construction of the proposed Project. The analysis in the Certified EIR is still valid, and impacts would remain unchanged from the analysis in the Certified EIR.

3.15 PUBLIC SERVICES

Table 3-24: Public Services

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☐
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☒	☐

3.15.1 Baseline Conditions

Fire Protection: According to the City of Ridgecrest General Plan, the City does not provide its own fire services.[51] Fire protection services for the City of Ridgecrest are provided by Kern County through the Kern County Fire Department (KCFD) through an agreement between the two jurisdictions. Kern County Fire Stations 74 and 77 are located within the city limits. In addition to the two Kern County Fire Stations, the City has a mutual aid agreement with NAWS China Lake, which operates its own fire station for the installation, China Lake Fire Department (CLFD). The CLFD is located at 1700-1798 North Lauritsen Road on NAWS China Lake, approximately one mile south of the Project site.

Police Protection: According to the City of Ridgecrest General Plan, the City provides its own police services. In addition to the City of Ridgecrest Police Department, NAWS China Lake is served by the China Lake Police Department. The China Lake Police Department is located at 800 Inyokern Road on NAWS China Lake, approximately one mile south of the Project site. The City of Ridgecrest Police Department is located at 100 West California Avenue, approximately 3.35 miles southwest of the Project site.

Schools: According to the City of Ridgecrest General Plan, the Sierra Sands School District serves the Ridgecrest area with elementary schools (kindergarten through sixth grade), middle schools (seventh through eighth grade) and high school (ninth through twelfth).

Parks: The City of Ridgecrest is responsible for providing parks for the general public of Ridgecrest. The City's Parks and Recreation Department is responsible for maintaining these facilities. According to the Ridgecrest General Plan Park Inventory there are five sites designated as parks and seven sites designated

[51] (City of Ridgecrest 2009)

as sports complexes, special use facilities, or community centers.[52] Solar Park is the closest park facility located approximately 0.9 miles southwest of the Project site.

Other Public Facilities: Other public facilities found in the City of Ridgecrest include libraries, hospitals, transportation, etc.

3.15.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.15.3 Impact Analysis

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i. Fire Protection:

No Impact. CLFD provides fire protection services to NAWS China Lake. KCFD provides fire protection and emergency medical services to the City of Ridgecrest. The closest fire station to the Project site is the CLFD located approximately one mile south. Project development would not induce population growth in the area and would not require construction of new or expanded CLFD or KCFD fire stations. There would be no impact.

ii. Police Protection:

No Impact. The Project would not result in the development of any new residential, commercial, or industrial use that would substantially increase the potential for incidents requiring police services. Construction of the Project is not expected to significantly increase response times to the site or result in an increase in the demand for these protection services or require any additional law enforcement facilities. As a result, there would be no adverse physical impacts associated with the provision of new or physically altered police facilities. No impact would occur in this regard. In the event that an incident occurs, the existing police services from the China Lake Police Department (CLPD), and the City of Ridgecrest Police Department would be adequate. Therefore, there would be no impact.

iii. Schools:

No Impact. The purpose of the Project is to upgrade and expand the City's outdated WWTP facility and provide environmentally sound wastewater disposal to City residents and businesses. Implementation of the Project will not result in an increase of student populations in the City or NAWS China Lake. No new housing or population in the City or NAWS China Lake would be required as a result of the Project which would require additional educational facilities. Therefore, the Project would have no impact.

iv. Parks:

No Impact. The need for additional parkland is primarily based on an increase in population to an area. Given that the Project would not increase the population of the City or NAWS China Lake, the Project

[52] (City of Ridgecrest 2009)

would not burden any parks in the surrounding area beyond capacity by generating additional recreational users. Therefore, the Project would not require the construction or expansion of park and recreational facilities and would also not result in an increase in demand for parks and recreation facilities in the surrounding area. There would be no impact.

v. Other public facilities:

Less than Significant Impact. The Project would not induce the appreciable use of other public facilities within Ridgecrest, NAWS China Lake, and Kern County, such as libraries, hospitals, and other services. As discussed above, the Project would not result in an increase in the local population or substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause a significant environmental impact in order to maintain acceptable service ratios for any of the public services. Therefore, the Project would have a less than significant impact.

3.15.4 Comparison Analysis

The proposed Project modifications would not increase impacts to Public Service impacts. The Certified EIR analyzed the construction of effluent disposal ponds on the City site. These locations could have potentially impacted park space on City property. The proposed Project modifications no longer include any locations on City property. The analysis in the Certified EIR is still valid and because no construction would take place on City property, mitigation measure **LU-1** would not be required for the modified Project.

3.16 RECREATION

Table 3-25: Recreation Impacts

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

3.16.1 Baseline Conditions

According to the City of Ridgecrest 2030 General Plan, the City offers a variety of recreational opportunities through its Parks and Recreation Department. The City operates 12 recreational facilities consisting of parks, sports complexes, special use facilities, and community centers totaling 134 acres.[53] Based on the City of Ridgecrest 2020 population of 27,959 people, the City maintains/manages 4.79 acres of parkland per 1,000 residents.

Parks: Parks in the City of Ridgecrest range from as small as 0.5 acres to parks as large as 56 acres. Parkland in the City includes parks owned and operated by the City as well as one park that is owned by Kern County and operated by the City (Leroy Jackson Park Sports Complex/ Petroglyph Park).

Sport Complexes & Special Use Facilities: The City of Ridgecrest has a variety of sports complexes to serve youth and adult recreational sports programs and leagues. These sports complexes include about 68 acres of baseball fields, football fields, tennis courts, and soccer fields. In addition, the City also operates two special purpose facilities including a skate park and community pool.

Community and Senior Centers: Ridgecrest has a multifunctional community center (the Kerr McGee Community Center) and a senior center (Ridgecrest Senior Center) that provide services to the residents of Ridgecrest as well as the unincorporated parts of the Indian Wells Valley.

In addition to the City, the CLUMP for NAWS China Lake identifies a variety of recreational activities have been accommodated on NAWS lands over the past 50 years. While most of these activities will continue to be supported by the Navy, others may be temporarily or permanently discontinued. The following is an active list of recreational opportunities on the NAWS: golfing, gymnasiums, camping, bird watching, hiking, equestrian, off-road vehicles, and cultural and natural resource tours.

[53] (City of Ridgecrest 2009)

3.16.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.16.3 Impact Analysis

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

No Impact. Implementation of the Project would improve the capacity of the existing WWTP system to accommodate existing and planned growth in the City of Ridgecrest. No housing would be constructed as part of the Project. Therefore, implementation of the Project would not increase the use of existing neighborhood or regional parks in the Project vicinity. Implementation of the Project would not have an adverse effect on existing park facilities and would not generate a demand for additional recreational facilities. There would be no impact as a result.

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

No Impact. The Project does not include recreational facilities. The Project will involve improvements and expansion of an existing WWTP. As there is no direct population growth resulting from Project implementation, construction or expansion of nearby recreational facilities will not be necessary. There would be a less than significant impact.

3.16.4 Comparison Analysis

The Certified EIR analyzed the construction of effluent disposal ponds on the City site. These locations could have potentially impacted park space on City property. The proposed Project modifications no longer include any locations on City property. The analysis in the Certified EIR is still valid and because no construction would take place on City property, mitigation measure **LU-1** would not be required for the modified Project.

3.17 TRANSPORTATION

Table 3-26: Transportation Impacts

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

3.17.1 Baseline Conditions

Ridgecrest's existing roadway system serves local and regional travel, with local streets primarily serving residential commuter trips and Highways 14, 395, and 178 serving regional travel. Highway 178 is designated as a Scenic Corridor by the Ridgecrest General Plan and functions as a major entry point to the city.[54]

The existing WWTP is located in a 352-acre easement, inside NAWS China Lake Naval Base. Primary access to the site would be through the main base entrance off Inyokern Road, additionally a commercial entrance through Sandquist Road is available for material and equipment deliveries and is north of the Inyokern Rd and China Lake Blvd intersection, both part of Highway 178 that runs through the city.

Vehicle miles traveled (VMT) Travel to and from the site after the Project is completed would remain consistent with baseline VMT since the Project does not propose any new habitable structures or a significant increase in operational or maintenance staff as a result of the Project. VMT may increase slightly during construction related to contractor employee and equipment trips, however, this slight increase would be transient and temporary, and as noted above VMT would return to baseline existing conditions after construction is complete.

1. Major transit corridors within Ridgecrest include State highways and roadways that serve inter-county and intra-county travel include:
    a. Major North-South Travel Corridors. There are eight north-south travel corridors within the Ridgecrest area: Jacks Ranch Road, Brady Street, Mahan Street, Downs Street, Norma Street, College Heights Boulevard, China Lake Boulevard and Gateway Boulevard.

[54] (City of Ridgecrest 2009)

b. Major East-West Travel Corridors. There are seven major east-west travel corridors within the Ridgecrest area: Inyokern Road (Highway 178), Drummond Avenue, Ridgecrest Boulevard, Bowman Road, Ward Avenue, Las Flores, and Springer Avenue.

c. Highway 178. The route is on streets heavily used for local traffic. The route makes two right angle turns in the City of Ridgecrest. Several stoplights must be negotiated along the route. The route is the main east-west thoroughfare in the area.

d. Highway 395. Highway 395 begins in Hesperia, California at the junction with Interstate 15 and continues north to the Canadian border, traversing high desert land, hilly areas east of the Sierra Nevada Mountains. Plants indigenous to the area along the route have good scenic qualities when wildflowers are in bloom. Highway 395 lies outside Ridgecrest but is important because it intersects with China Lake Boulevard and provides the primary route into and out of the City.

e. State Route 14 (SR 14). SR 14 is a north-south state highway traversing the Mojave Desert to the west of Ridgecrest. Connecting Highway 395 in Inyokern to Interstate 5 in Santa Clarita, SR 14 provides access from the southern coastal cities in California to interior high desert areas, including Reno, Nevada.

3.17.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project. Additionally, the following plan has been adopted since the preparation of the Certified EIR.

Local

Kern Council of Governments 2022 Regional Transportation Plan

The 2022 Regional Transportation Plan is a 26-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County.

3.17.3 Impact Analysis

a) Would the project conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact. Traffic to and from the Project site would temporarily increase on Inyokern Road and Sandquist Road as a result of construction material, equipment, and worker trips. Construction-related material haul trips and vehicle travel to and from site would periodically increase traffic along the roadways identified above. It is estimated that construction would generate approximately 3.3 trips per weekday and 2.7 trips per weekend day during the construction period. Operational activities associated with vehicle trips would be similar to existing operations at the WWTP. Considering the average type and volume of traffic near the NAWS that are associated with nearby military, residential, and recreational activities, construction-related material haul trips are considered to be generally consistent. Additionally, there are no existing pedestrian or bicycle transportation facilities within the immediate area of the Project site. Therefore, there would be no impact.

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

Less than Significant Impact. CEQA Guidelines Section 15064.3(b) applies to land use and transportation projects that would be expected to increase vehicle miles driven during their operations. The Project site

is not located within 0.5 miles of either an existing major transit stop or a stop along an existing high quality transit corridor. For construction activities, CEQA Guidelines Section 15064.3(b)(3) allows a qualitative analysis to be conducted. The Project would result in a temporary increase in VMT during construction due to worker trips to the site, the delivery of materials, and trips generated by construction vehicles on the site. The temporary increase in VMT during construction would not be expected to increase VMT over the long term and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). Therefore, impacts would be less than significant.

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

Less Than Significant Impact with Mitigation Incorporated. Construction of the Project would occur entirely within the City's easement with the Navy and no changes to the existing access driveway are proposed. The Project does not include any design features that would affect traffic safety, nor would it cause incompatible uses on local roads. Once operational, the Project would generate a negligible increase in traffic due to maintenance staff commuting to and from the site. Mitigation measures TR-6 and TR-7, as laid out in the Certified EIR, would ensure that potential impacts remain less than significant. Impacts would be less than significant with mitigation incorporated.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. Construction of the Project would not result in inadequate emergency access. Improvements would occur within the existing footprint of the WWTP and the additional 7.67 acres west of the WWTP granted to the City. Emergency access to the site would remain unchanged. Emergency access in the area would be maintained throughout construction. Impacts would be less than significant.

3.17.4 Mitigation

Mitigation Measures **TR-1**, **TR-2**, **TR-3**, **TR-4**, **TR-5**, and **TR-8**contained within the Certified EIR have been deemed to be no longer applicable to the current Project. However, mitigation measures **TR-6** and **TR-7** of the Certified EIR continue to be appropriate to mitigate for potential impacts due to transportation and will be included as mitigation under the current proposal. No new mitigation measures are necessary.

3.17.5 Comparison Analysis

The Certified EIR analyzed the construction of effluent disposal ponds and pipelines within the City. These locations could have potentially impacted roadway traffic during construction. The proposed Project modifications no longer include any locations on City property. The analysis in the Certified EIR is still valid and because no construction would take place on City property nor in County ROW or SR 178, mitigation measures **TR-1**, **TR-2**, **TR-3**, **TR-4**, **TR-5**, and **TR-8** would not be required for the modified Project. In addition, with the implementation of the other adopted mitigation measures (**TR-6** and **TR-7**), impacts would remain less than significant

3.18 TRIBAL CULTURAL RESOURCES

At the time the Certified EIR was prepared, Tribal Cultural Resources was not a required analysis and was not included. The CEQA Guidelines as adopted December 28, 2018, now include Tribal Cultural Resources in the CEQA Checklist. Accordingly, a complete checklist has been included in this Addendum.

Table 3-27: Tribal Cultural Resources Impacts

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

3.18.1 Baseline Conditions

The Project site is located in eastern Kern County, in an area that is within the traditional territory of the Koso tribe (California Shoshone). The Koso territory spanned approximately 1,500 miles across the California desert from the Sierra Nevada Crest to the west to the deserts of Nevada to the east. The Koso territory was roughly bound to the north by the Mono Tribe and Owens Lake, while it was bound to the south by the territory of the Kawaiisu Tribe in the Mojave Desert region (see Appendix B). As discussed in Section 3.5.1, several previous cultural resource surveys have been conducted which encompassed the Project site. Within these previous surveys, two resources were identified, neither of which were that of a Native American Tribe. Applied Earthworks conducted a cultural survey for the Project APE on February 13-16, 2023, and did not identify any new unidentified cultural resources, tribal or otherwise.

Native American Outreach

The NAHC was contacted in October 2022. NAHC was provided with a brief description of the Project and a map showing its location and requested that they perform a search of the Sacred Lands File to determine if any Native American resources have been recorded in the immediate Project area. The NAHC identifies, catalogs, and protects Native American cultural resources -- ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC is also charged with ensuring California Native American tribes' accessibility to ancient Native American cultural resources on public lands, overseeing the treatment and disposition of inadvertently discovered Native American human remains and burial items, and administering the California Native American Graves Protection and Repatriation Act, among many other powers and duties. NAHC provided a current list of Native American Tribal contacts in the Project area to notify of the proposed project. Letters to these tribes were sent in February 2023, with no responses received. The list of tribes contacted, and their representative are contained within Appendix B.

3.18.2 Applicable Regulations

This resource section was not previously contained within the Certified EIR. The following rules and regulations will apply to the current Project. The rules and regulations of the cultural section contained within the Certified EIR shall also be applicable to this section.

State

Assembly Bill 52: Native American Historic Resource Protection Act

AB 52, codified at PRC Section 21080.3.1, et seq., sets forth a proactive approach intended to reduce the potential for delay and conflicts between Native American and development interests. Projects subject to AB 52 are those that file a notice of preparation for an EIR or notice of intent to adopt a negative or mitigated negative declaration on or after July 1, 2015. AB 52 adds Tribal Cultural Resources to the specific cultural resources protected under CEQA. Under AB 52, a Tribal Cultural Resource is defined as a site, feature, place, cultural landscape (must be geographically defined in terms of size and scope), sacred place, or object with cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources. A Native American Tribe or the lead agency, supported by substantial evidence, may choose at its discretion to treat a resource as a Tribal Cultural Resource. AB 52 also mandates lead agencies to consult with tribes, if requested by the tribe, and sets the principles for conducting and concluding consultation.

Native American Heritage Act

Also relevant to the evaluation and mitigation of impacts to cultural resources is the Native American Heritage Act of 1976 which established the NAHC and protects Native American religious values on state property (see PRC Section 5097.9).

Disposition of Human Remains

When an Addendum identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native American groups or individuals as identified by the NAHC as provided in PRC Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials. Furthermore, Health and Safety Code Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

California Native American Graves Protection and Repatriation Act of 2001

Health and Safety Code Sections 8010-8011 establish a State repatriation policy intent that is consistent with and facilitates implementation of the California Native American Graves Protection and Repatriation Act (NAGPRA). NAGPRA strives to ensure that all California Indian human remains, and cultural items are treated with dignity and respect. It encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. It also states the intent for the state to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.

3.18.3 Impact Assessment

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

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

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

a and b) Less than Significant Impact with Mitigation Incorporated. The City of Ridgecrest, as the lead agency, has not received any formal requests for notification from any Native American Tribes, pursuant to AB 52. Additionally, a Sacred Lands File search completed for the Project APE, dated December 2, 2022, did not identify any tribal cultural resources within the APE. Outreach letters and follow-up emails were sent to tribal organizations on the NAHC contact list, requesting information on resources or expressions of concern, however no responses were received. Less than significant impacts, with mitigation incorporated, to tribal resources are expected. Mitigation Measures **CUL-1** and **CUL-2**, described in Section 3.5.4, would ensure that impacts remain less than significant in the event cultural materials or human remains are unearthed during excavation or construction activities.

3.18.4 Mitigation

CR-1 and **CR-2** of the Certified EIR would diminish any potential impacts to tribal cultural resources in the event that any were uncovered as a result of the Project.

3.18.5 Comparison Analysis

This resource topic was added to the CEQA Guidelines Appendix G Checklist template in the adopted amendments in December 2018 as a result of additional legislation. The Certified EIR was not subject to this topic. As discussed above the proposed Project modifications would comply with the original mitigation measures in the Cultural Resources section, which would reduce any impacts to Tribal Cultural Resources to less than significant.

3.19 UTILITIES AND SERVICE SYSTEMS

Table 3-28: Utilities and Service Systems Impacts

Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

3.19.1 Baseline Conditions

Wastewater Services/Facilities: The City of Ridgecrest WWTP currently has a permitted capacity of 3.6 mgd, with a daily maximum discharge of 3.6 mgd (average daily flow). Treated water is percolated into the underlying aquifer through the treatment ponds located at the NAWS site, currently nine of the eleven ponds are in operation. Additionally, recycled water that has undergone treatment is used for irrigation at the China Lake Golf Course. The Navy disinfects the effluent before it is used for irrigation purposes. Under the City's contract with the Navy to operate the WWTP, the Navy allotted 525 AFY of treated water, which is further treated within a sand filter prior to disinfection by the Navy and then used for irrigation purposes.

Water: IWVWD is responsible for providing potable water to the City of Ridgecrest. IWVWD currently serves a population of about 35,800 people through approximately 12,600 service connections.[55]

The sole source of potable water supply in the Indian Wells Valley is groundwater, with a current annual groundwater extraction of about 27,740 AF. The approximate annual average recharge within the Indian

[55] (Indian Wells Valley Water District 2022)

Wells Valley Groundwater Basin is 7,650 AFY.[56] Overall, groundwater levels are generally declining at a rate of 1 to 2 feet per year depending on the specific area of the groundwater basin.

Solid Waste: Within the Ridgecrest area, solid waste collection service is provided by Kern County Waste Management Department, which operates the Ridgecrest Recycling & Sanitary Landfill at 3301 Bowman Road in Ridgecrest, CA. The total estimated maximum permitted capacity of the landfill is approximately 10,500,000 (cubic yards). There is approximately 5,037,428 (cubic yards) or 47.97% of remaining capacity at the Ridgecrest Recycling & Sanitary Landfill.[57]

Storm Water Drainage: Storm water within the site currently percolates into the ground. There are no storm water retention basins on site.

3.19.2 Applicable Regulations

The regulatory setting in the Certified EIR remains applicable to the current Project.

3.19.3 Impact Analysis

a) Would the project 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 with Mitigation Incorporated. The Project would involve improvements to and expansion of the existing, outdated, 3.6 mgd (average daily flow) capacity WWTP. The Project does not propose any uses that would create additional demand for domestic water nor would the Project result in an increase in wastewater. The Project would increase the capacity of the existing WWTP in order to better serve the needs of the city and NAWS China Lake as population grows. Potential impacts relating to the construction and operation of the proposed Project has been discussed throughout this document. The Project includes mitigation for impacts related to the need for new water or wastewater treatment facilities and would therefore have a less than significant impact with mitigation incorporated.

Additionally, while the expansion to the WWTP will increase impervious surface area, the Project design would include curb and gutter, with area drains / catch basins that will connect to proposed stormwater retention basins.

Electricity is provided by SCE and natural gas by Pacific Gas & Electric and the Project would connect to existing off-site infrastructure. Therefore, the Project would not require or result in the construction of new or expanded water, wastewater treatment or stormwater drainage, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects. Less than significant impacts are anticipated in this regard.

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

Less than Significant Impact. The IWVWD provides water and water treatment for 38 square miles in the Indian Wells Valley (including Ridgecrest). Projected water uses for 2020 was 8,255 AFY, and for 2040 the

[56] (Indian Wells Valley Groundwater Authority 2020)
[57] (California Department of Resources Recycling and Recovery 2022)

projection is 9,311 AFY.[58] DWR has designated the Indian Wells Valley Groundwater Basin as a basin in critical overdraft. Overdraft in the Indian Wells Valley Groundwater Basin has been shown through several undesirable results, primarily the lowering of groundwater levels, the degradation of water quality, and the reduction of groundwater in storage throughout the basin.

Natural surface waters are not used as a drinking water supply source in the Indian Wells Valley Groundwater Basin. Approximately 2,490 AF of recycled water was produced by the existing WWTP during Water Year 2021 and was used for: China Lake Golf Course, NAWS turf and irrigated areas, agricultural irrigation, partial maintenance of the Mojave Tui Chub habitat, and discharge to the existing evaporation/percolation ponds.[59]

Water would be used on-site during construction for dust suppression and similar activities. The small amount of water that would be used would not change the existing water entitlements. Additionally, there would not be a substantial increase in water usage as a result of the negligible staff increase to operate the WWTP once improvements are completed.

Following completion of the Project, the WWTP would also continue to provide the NAWS China Lake Golf Course with secondary treated water. At this time, the use of recycled water elsewhere throughout NAWS China Lake is not proposed. The treatment ponds that are thought to be creating suitable habitat for the Mojave Tui Chub would be allowed to continue to seep and provide habitat at the Lark Seep. Therefore, any impact would be less than significant.

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The City of Ridgecrest is the wastewater treatment provider and is the Project's proponent. The Project would replace the existing, outdated, 3.6 mgd (average daily flow) capacity wastewater treatment plant in order to increase efficiency and improve service. Improvements to the existing WWTP would result in the expansion of the facility and would be estimated to provide sufficient capacity to serve City growth through approximately 2052. The previously certified EIR analyzed an average daily flow of 3.6 mgd, and a maximum month flow of 4.0-mgd. Therefore, the environmental baseline would be maintained, and no impact would occur.

d) Would the project 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?

Less Than Significant Impact. The Project would generate solid waste during construction. Waste generated from the Project would be routed to the Ridgecrest Recycling & Sanitary Landfill. The Ridgecrest Recycling & Sanitary Landfill has a maximum capacity of 10,500,000 cubic yards and a remaining capacity of 5,037,428 cubic yards.[60] The landfill has sufficient capacity to accommodate the Project's solid waste disposal needs. Operational generated waste would not change as a result of the Project. Therefore, impacts would be less than significant.

[58] (Indian Wells Valley Water District 2021)
[59] (Indian Wells Valley Groundwater Authority 2022)
[60] (California Department of Resources Recycling and Recovery 2022)

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. The Project would comply with all federal, State, and local laws and regulations related to the collection and disposal of solid waste. Therefore, no impact would occur.

3.19.4 Comparison Analysis

The Project does not propose any uses that would create additional demand for domestic water nor would the Project result in an increase in wastewater. The analysis in the Certified EIR is still valid, and impacts would remain unchanged from the analysis in the Certified EIR.

3.20 WILDFIRE

At the time the Certified EIR was prepared, Wildfire was not a required analysis and was not included. The CEQA Guidelines adopted December 28, 2018, now include Wildfire in the CEQA Checklist. Accordingly, a complete checklist has been included in this Addendum.

Table 3-29: Wildfire Impacts

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrollable spread of wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

3.20.1 Baseline Conditions

The Project site is located on NAWS China Lake, a federally owned location that is designated by CALFIRE as a Federal Responsibility Area (FRA).[61] The site is not located in the vicinity of a State Responsibility Area (SRA) and is served by the Navy for its fire protection needs. The nearest SRA to the site is located approximately 12.5 miles to the west. Additionally, the Project site is located approximately 24.5 miles southeast of the nearest very high fire hazard severity zone.[62]

3.20.2 Applicable Regulations

This resource section was not previously contained within the Certified EIR. The following rules and regulations will apply to the current Project.

[61] (CALFIRE 2022)
[62] (CALFIRE 2022)

Federal

Federal Emergency Management Agency

FEMA is an agency within the United States Department of Homeland Security, created via Executive Order 12127 on April 1, 1979, by President Carter. A second Executive Order 12148 signed on July 20, 1979, accorded the agency with the missions of emergency management and civil defense. In order to receive assistance through FEMA in the event of a disaster, a state's governor must declare a state of emergency and formally request a federal government response.

Disaster Mitigation Act of 2000

The Disaster Mitigation Act of 2000 requires a State mitigation plan as a condition of disaster assistance. There are two different levels of State disaster plans: "Standard;" and "Enhanced." States that develop an approved Enhanced State Plan, which includes California, can increase the amount of funding available through the Hazard Mitigation Grant Program. The act has also established new requirements for local hazard mitigation plans.

National Fire Plan

The National Fire Plan was developed under Executive Order 11246 in August 2000, following a landmark wildland fire season. Its intent is to actively respond to severe wildland fires and their impacts on communities while ensuring sufficient firefighting capacity for the future. The plan addresses firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability

State

California Fire Plan

The Strategic California Fire Plan is the State's road map for reducing the risk of wildfire. In compliance with the California Fire Plan, individual California Department of Forestry and Fire Protection (CAL FIRE) units are required to develop Fire Management Plans for their areas of responsibility. These documents assess the fire situation within each of CAL FIRE's 21 units and six contract counties. The plans include stakeholder contributions and priorities and identify strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work with the local fire problem. The plans are required to be updated annually.

Wildland-Urban Interface Building Standards

Title 24, Part 9 of the 2022 California Fire Code establishes standards and requirements for construction in relation to the prevention of wildfire. These codes include provisions for ignition-resistant construction standards in the wildland urban interface.

California Office of Emergency Service

Through the California Emergency Services Act of 1970, the California Office of Emergency Service provides the basis for local emergency preparedness. The Office of Emergency Services is responsible for preparing the California State Emergency Plan and for coordinating and supporting emergency services conducted by local governments. The responsibility for immediate response to an emergency, such as fires, landslides, earthquakes or riots, rests with local government agencies and segments of the private sector, with support services provided by other jurisdictions and/or State and federal agencies. In accordance with their normal operating procedures, the initial response to an emergency will be made by local Fire, Law Enforcement, Medical or Maintenance (Public Works) districts or departments.

California Fire and Building Code

The 2022 Fire and Building Code establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to

provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

Local

County of Kern Emergency Operations Plan

The County of Kern Emergency Operations Plan (2022) analyzes potential hazards and risks to the County of Kern, while setting an operational hierarchy detailing the level of responsibility for departments within the County. The plan assesses resource management, preparedness, emergency operations, and communications in the event of an emergency situation.

County of Kern Multi-Hazard Mitigation Plan

The purpose of a Local Hazard Mitigation Plan is to reduce or eliminate long-term risk to human life and property resulting from hazards. A Local Hazard Mitigation Plan recognizes risks before they occur, as well as identifies resources, information, and strategies for emergency response. Kern County, with participation from 47 jurisdictions, is the lead agency on the Multi-Hazard Mitigation Plan. In 2021, FEMA approved the Multi Hazard Mitigation Plan, which includes information that pertains to the City in the areas of health, infrastructure, housing, government, environment, and land use.

3.20.3 Impact Analysis

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

a-d) No Impact. The Project site is located on a relatively flat area of the NAWS China Lake northeast of the City of Ridgecrest. The site is served by the Navy for its fire protection services due to its location within an FRA. The nearest SRA is located approximately 12.5 miles to the west. Additionally, the site is not located on or within the vicinity of a very high fire hazard severity zone. The nearest such area is located approximately 24.5 miles to the northwest of the Project site. Therefore, there would be no impact.

3.20.4 Comparison Analysis

This resource topic was added to the CEQA Guidelines Appendix G Checklist template in the adopted amendments in December 2018 as a result of additional legislation. The Certified 2016 EIR was not subject to this topic. As discussed above the proposed Project modifications would not create wildfire impacts.

3.21 CEQA MANDATORY FINDINGS OF SIGNIFICANCE

Table 3-30: Mandatory Findings of Significance Impacts

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

3.21.1 Statement of Findings

The adopted *2016 Environmental Impact Report for the New Wastewater Treatment Plant on Two Alternatives Project* determined that there would be less than significant impacts for items a), b), and c) as noted above provided that the recommended mitigation measures were adopted. Mitigation Measures of the Certified EIR remain applicable to the proposed Project, unless stipulated otherwise. For instance, mitigation measures **LU-1**, **N-1**, **N-2**, **N-3**, **TR-1**, **TR-2**, **TR-3**, **TR-4**, **TR-5**, and **TR-8** from the 2016 EIR have been deemed to be no longer applicable to the current Project (as discussed in the respective sections of the Addendum). Mitigation measures are laid out in the Mitigation, Monitoring, and Reporting Program as shown in **Chapter 5**. In addition to the approved mitigation measures in the 2016 EIR, the following mitigation measures will be implemented as a result of the analysis in this Addendum.

Cultural Resources

The mitigation measures for cultural resources contained within the Certified EIR shall be replaced within the following mitigation measures. Both **CR-1** and **CR-2** contained herein use the same mitigating language as **CR-1** and **CR-2** of the Certified EIR, however they have been updated to reflect the appropriate jurisdiction.

CR-1 If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be ceased and NAWS China Lake shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System. The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to NAWS China Lake for review and approval a report of the findings and method of curation or protection of the resources. Further grading or sitework within the area of discovery shall not be allowed until the preceding steps have been taken.

CR-2 If human remains are uncovered, or in any other case where human remains are discovered, the Kern County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.

CHAPTER 4 DETERMINATION

The appropriate CEQA document for the changes to the Project since the existing EIR was certified, would be an Addendum as outlined in the CEQA Guidelines Section 15164. An addendum to a previously certified EIR is prepared if some changes in the adopted project are proposed and none of the conditions in CEQA Guidelines Section 15162 would occur. As demonstrated in the preceding Environmental Impact Analysis section, the proposed New Wastewater Treatment Plant Modified Project would not result in, or require, changes to previous impact determinations or mitigation requirements as identified in the *2016 Environmental Impact Report for the New Wastewater Treatment Plant on Two Alternatives Project* (SCH No. 2015061095). The modified Project would not result in any new additional significant impacts, nor would it substantially increase the severity of previously anticipated significant impacts. Rather, all of the impacts associated with the Project are within the envelope of impacts addressed in the Certified EIR and do not constitute a new or substantially increased significant impact. Based on this determination, the modified Project does not meet the requirements for preparation of a Subsequent or Supplemental EIR pursuant to Section 15162 of the CEQA Guidelines.

Mitigation Measures of the Certified EIR remain applicable to the proposed Project, unless stipulated otherwise. For instance, mitigation measures **LU-1**, **N-1**, **N-2**, **N-3**, **TR-1**, **TR-2**, **TR-3**, **TR-4**, **TR-5**, and **TR-8** from the 2016 EIR have been deemed to be no longer applicable to the current Project (as discussed in the respective sections of the Addendum). Additionally, mitigation measures (such as **AES-1**, **HYD-1**, **CR-1**, and **CR-2**) have been updated for this Project to reflect that all construction will now take place on the NAWS site through an easement that the Navy has granted to the City, no part of the Project will take place within the City limits. Mitigation measures that remain applicable from the Certified EIR have been included in their entirety in Chapter 5 Mitigation, Monitoring, and Reporting Program.

CHAPTER 5 MITIGATION, MONITORING, AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Addendum for the Project in the community Ridgecrest. The MMRP lists mitigation measures recommended in the Addendum for the Project and identifies monitoring and reporting requirements. The applicable mitigation measures were carried over from the Certified EIR (SCH #2015061095). The previously Certified EIR referenced Alternatives 1 and 2; however, these mitigation measures are applicable to the modified Project and therefore the mitigation measure language referring to the alternatives has been modified to state "Project". Any mitigation language that referenced the City WWTP site has been removed, as all construction will now take place on the NAWS site through an easement that the Navy has granted to the City. Additionally, the mitigation language regarding the alfalfa field irrigation has been struck through as that is no longer part of the Project.

Table 5-1: Mitigation, Monitoring, and Reporting Program presents the mitigation measures identified for the Project. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, AIR-2 would be the second mitigation measure identified in the Air Quality analysis of the Addendum.

The first and second columns of *Table 5-1: Mitigation, Monitoring, and Reporting* Program identifies the mitigation measure. The third column, entitled "When Monitoring is to Occur," identifies the time the mitigation measure should be initiated. The fourth column, "Agency Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last columns will be used by the Lead and Responsible Agencies to ensure that individual mitigation measures have been complied with and monitored.

Table 5-1: Mitigation, Monitoring, and Reporting Program

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
		Aesthetics			
AES-1	In accordance with the Comprehensive Land Use Management Plan for NAWS China Lake, the proposed Project shall preserve existing natural aesthetic resources (vegetation) and re-establish natural vegetation around each site where feasible, install eco-friendly xeriscape landscaping and gateway features at main facility entrances that are visible from sensitive receptors and public rights-of-way. The City shall prepare professional landscaping and lighting plans for the facility in compliance with the aforementioned land use plan.	Prior to and during construction	City of Ridgecrest	Landscape and Lighting Plan Submittal	
AES-2	Prior to construction of any proposed structures, all proposed lighting shall be indicated on site plans. The lighting plan shall incorporate lighting that directs light pools downward to prevent glare on adjacent and surrounding areas that meet minimum security and safety requirements.	Prior to construction	City of Ridgecrest	Landscape and Lighting Plan Submittal	
		Air Quality			
AQ-1	The following measures for the control of construction-generated PM shall be implemented: a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads. b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available. c. Reduce and/or phase the amount of the disturbed area (e.g., grading, excavation) where possible.	During construction	City of Ridgecrest and EKAPCD	EKAPCD Authority to Construct Permit	

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	d. All disturbed areas shall be sufficiently watered or stabilized by an EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available. e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or nearby occupied structures. f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips, g. All active and inactive disturbed surface areas shall be compacted, where feasible. h. Limit equipment and vehicle access to disturbed areas. i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities. j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust. k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust. l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering. m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum				

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114. n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways. o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-out/deposition of soil onto nearby paved roadways. p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available. q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g. portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD. r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints. s. Off-road equipment shall be maintained and properly tuned in accordance with manufacturer recommendations. t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible. u. Alternatively fueled equipment (e.g. electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available. v. All on-road and off-road equipment shall be fitted with emission control devices (e.g. diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations.				

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.				
AQ-2	A Fugitive Dust Control Plan shall be prepared for the proposed Project to ensure consistency with the EKAPCD Rule 402 for the control and reduction of fugitive dust. The Fugitive Dust Control Plan shall include measures to control nuisance caused by fugitive dust during the operation of the WWTF, as well as during construction, and shall address surface soil erosion and loss of topsoil. The Fugitive Dust Control Plan shall be submitted to EKAPCD and approved by EKAPCD prior to commencement of construction activities.	Prior to commencement of construction activities	EKAPCD	Submit Fugitive Dust Control Plan to EKAPCD.	
AQ-3	An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed project to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation and appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.	Prior to Operation	City of Ridgecrest & EKAPCD	Submit OCMP to the EKAPCD.	
Biological Resources					
Le Conte's Thrasher and Other Nesting Migratory Birds					
BIO-1	a. Avoidance. In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season if feasible, or between September 1 and January 31. b. Pre-construction surveys. If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities. c. Establish buffers. Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing and will be maintained until the biologist has determined that the young have fledged.	Prior to construction actives	City of Ridgecrest	Pre-construction Survey Report	
Desert Tortoise					

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
BIO-2	Pre-construction surveys will be conducted in suitable desert tortoise habitats on the Project site prior to the beginning of ground disturbance, construction activities, and/or any Project activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS *Desert Tortoise Field Manual*. Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses), the Project applicant will consult with the USFWS and CDFW for guidance on how to proceed. The agencies will likely require "take authorization" in the form of a Biological Opinion (BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the Project to lawfully proceed. The Project applicant will implement all measures recommended by the USFWS and/or CDFW during the aforementioned consultation or stipulated by the Project's BO and ITP, if issued. These measures may include compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.	Prior to ground disturbance, construction activities, or other activities likely to disturb desert tortoise	City of Ridgecrest	Pre-construction Survey Report/Memo	
Burrowing Owls					
BIO-3	A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of Project impact areas, where accessible. If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet will be established around all active owl nests. The buffer areas will be enclosed with temporary fencing, and construction equipment and workers will not enter the enclosed setback areas. Buffers will remain in place for the duration of the breeding season. After the breeding season (i.e. once all	Prior to construction	City of Ridgecrest	Survey memo submitted to the City.	

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	young have left the nest), passive relocation of any remaining owls may take place as described below. During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development will either be avoided by a minimum distance of 150 feet or passively relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist.				
Mojave Ground Squirrels					
BIO-4	Protocol level surveys will be conducted in desert scrub and alkali flat habitats of the Project site prior to the beginning of ground disturbance, construction activities, and/or any Project activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's *Mohave Ground Squirrel Survey Guidelines* (July 2010) and will consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Survey results will be submitted to the CDFW. Negative results of these surveys are valid for one year, following which the surveys will be repeated if construction has not commenced. Should surveys find Mohave ground squirrel on site, the Project applicant will consult with CDFW for guidance on how to proceed. CDFW will likely require "take authorization" in the form of an Incidental Take Permit (ITP). The Project applicant will implement all measures recommended by CDFW during the aforementioned consultation and/or stipulated by the Project's ITP, if issued. These measures may include compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.	Prior to construction	City of Ridgecrest	Survey memo submitted to the City.	

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
American Badger					
BIO-5	A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the Project site. Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed, or the den has been abandoned.	Prior to construction	City of Ridgecrest	Survey memo submitted to the City.	
Erosion Control Plan					
BIO-6	Preparation of erosion control plan. Prior to the start of construction, an erosion control plan will be prepared, Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. The site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing onsite erosion and the concomitant deposition of sediment in onsite and offsite drainages. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of the erosion control plan will include the following: a. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three. b. b. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures 1 above, but they may include any number of additional measures appropriate for this particular site and this particular Project Alternative, including grease traps in parking areas, regular site inspections.	Prior to construction	City of Ridgecrest	Erosion Control Plan submitted to the City.	
Cultural Resources					
CR-1	If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be	During construction	City of Ridgecrest	On-going site monitoring	

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	ceased and NAWS China Lake shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System. The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to NAWS China Lake for review and approval a report of the findings and method of curation or protection of the resources. Further grading or sitework within the area of discovery shall not be allowed until the preceding steps have been taken.				
CR-2	If human remains are uncovered, or in any other case where human remains are discovered, the Kern County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.	During construction	City of Ridgecrest	On-going site monitoring	
Hazards and Hazardous Materials					
HAZ-1	An environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper best management practices implementation, to all field personnel associated with construction activities. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g. identification of potentially hazardous substances) and shall include a review of all site-specific plans. A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the City along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an	Prior to construction	City of Ridgecrest	Environmental Training Program	

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	emergency response program to ensure quick and safe cleanup of accidental spills. Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted.				
HAZ-2	Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the Project's Hazardous Substances Control and Emergency Response Plan. Operation of the pumps and pipelines associated with the Project would not require the storage and use of hazardous materials. The expanded wastewater treatment facility would use sodium hypochlorite and alum (aluminum sulfate), both of which are classified as hazardous substances. In addition, small quantities of fuel and related materials would be used and stored as part of Project operations. Appropriate safety measures, such as controlled access and secondary containment, shall be provided. For the Project this shall include the preparation and implementation of the following Hazardous Materials Business Plan, as detailed in mitigation measure **HAZ-3** below.	Prior to construction and operation	City of Ridgecrest	On-going site monitoring	
HAZ-3	During proposed Project operations, the City shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layouts, and emergency response and notification procedures for a spill or release.	During operation	City of Ridgecrest	Hazardous Materials Business Plan	
HAZ-4	Pre-treatment and adulticiding methods shall be employed at the WWTP to control mosquitoes. Pooling water sources around the WWTP such as large puddles from storms and irrigation tail water shall be treated as it accumulates. Adulticiding shall be accomplished in accordance with Best Management Practices which may include fogging the area where severe mosquitoes occur.	During operation	City of Ridgecrest	On-going site monitoring	
	Hydrology and Water Quality				
HYD-1	The City shall prepare and implement an irrigated land nutrient management plan for the golf course. This will help insure that nutrients	Prior to operation	City of Ridgecrest/NAWS	Nutrient Management Plan	

Mitigation, Monitoring, and Reporting Program					
Item	Mitigation Measure	When Monitoring is to Occur	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance
	(N), water and fertilizer will be applied at agronomic rates only and thus do not adversely affect groundwater.				
HYD-2	The City shall prepare and implement a groundwater study at the site to determine if groundwater monitor wells are needed for the long-term assessment of groundwater impacts from the percolation ponds and construct new monitor wells as indicated and approved by the RWQCB.	Prior to operation	City of Ridgecrest & RWQCB	Groundwater Study submitted to RWQCB	
HYD-3	The City shall implement best practicable treatment and control (BPTC) technology to mitigate impacts from TDS and nitrogen on the shallow groundwater. BPTC is to be determined with the submittal of the anti-degradation analysis per SWRCB Resolution 68-16 in the Report of Waste Discharge submitted for a Waste Discharge Permit.	During Operation	City of Ridgecrest & RWQCB	Submit for a Waste Discharge Permit	
HYD-4	Prepare a Storm Water Pollution Prevention Plan (SWPPP) for construction of the chosen alternative, in accordance with the specifications in the current Construction General Permit.	Prior to commencement of construction activities	City of Ridgecrest	Prepare a SWPPP	
HYD-5	Identify and conform with construction and post-construction Best Management Practices for storm water management, and implement those BMPs to minimize erosion, promote groundwater recharge, and protect ephemeral streams from pollution.	Prior to commencement of construction activities	City of Ridgecrest	On-going site monitoring	
Transportation					
TR-6	Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilize County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.	Prior to and during construction	City of Ridgecrest, Kern County Public Works Department	Submit for any necessary Transportation Permits	
TR-7	Project construction timing may coincide with neighboring projects. Coordinate construction traffic with the City of Ridgecrest and Kern County Public Works Departments to avoid possible conflicts during the project construction phases.	Prior to and During Construction	City of Ridgecrest, Kern County Public Works Department	On-going site monitoring	
Tribal Cultural Resources					
	See **CR-1**		City of Ridgecrest		
	See **CR-2**		City of Ridgecrest		

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Appendix A: *2016 Environmental Impact Report (EIR) for the New Wastewater Treatment Plant on Two Alternatives Project*

City of Ridgecrest

New City Wastewater Treatment Plant
Final Environmental Impact Report
(State Clearinghouse No. 2015061095)

Ridgecrest, California
June 2016

Prepared for:
City of Ridgecrest
100 West California Avenue, Ridgecrest, CA 93555

Prepared by:
Provost & Pritchard Consulting Group
1800 30th Street, Suite 280, Bakersfield, CA 93301

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1 Errata to the Draft EIR

1.1 Note to the Reviewer

In accordance with Section 15082 of the California Environmental Quality Act (CEQA) Guidelines, the City of Ridgecrest prepared and circulated a Notice of Preparation for public comment to the State Clearinghouse of the Governor's Office of Planning and Research, responsible agencies, and other interested parties for a 30-day review period. Subsequently, a Draft Environmental Impact Report (EIR) was prepared and, in accordance with CEQA, circulated for a 45-day public comment period from April 15, 2016 through May 31, 2016. It should be noted that printing issues resulted in the circulation of two versions of the DEIR. Initial copies of the DEIR, which will be identified as "Version 1", were circulated to a number of local, State, and federal agencies, interested individuals or organizations. A second version of the DEIR, containing corrections for the printing errors, was circulated on the same day (April 15, 2016) to the State Clearinghouse, and will be referred to as "Version 2". Versions 1 and 2 contained identical textual content and were circulated for the public review period of April 15, 2016 through May 31, 2016. The only difference between the two versions is the page numbering. Therefore, the pages referenced in these Errata will be equivalent to those in Version 2, the corrected version, which is also attached to this Final Environmental Impact Report (FEIR).

The purpose of these Errata is to correct factual inaccuracies or typographical errors, or to provide clarifying information in the FEIR for the City of Ridgecrest's New City Wastewater Treatment Plant Project and cover revisions to City responses to comments letters and FEIR analysis sections. These revisions do not result in new significant environmental impacts, do not constitute new information, and do not alter the conclusions of the environmental analysis.

Revisions to the Draft EIR are shown below as excerpts from the Draft EIR text. Added or modified text is underlined (example), while deleted text will have a strike out (~~example~~) through the text, as the example below shows.

> ~~Text from EIR~~ Text from EIR.

To avoid redundancy, it should be assumed that additions, modifications, or deletions of text within Section 3 of the Final EIR, where applicable, are reflected in Section ES-1, Executive Summary, and Section 6, Mitigation Monitoring and Reporting Program. Changes are listed where appropriate, by section or chapter.

In conformance with Section 15121 of the State CEQA Guidelines, the Final EIR, technical appendices and reports thereof, together with the Errata, are intended to serve as documents that will generally inform the decision-makers and the public of environmental effects of the project. These Errata, combined with the Mitigation Monitoring and Reporting Program and Response to Comments comprise the Final EIR.

1.2 Changes Incorporated Into the Final EIR Text

Executive Summary

Changes or revisions to mitigation measures noted in the Errata result in similar changes to the Executive Summary and Section 6, Mitigation Monitoring and Reporting Program, respectively.

Section 1. Introduction

The text on page 1-2 has been amended to add the following text to the list of permitting agencies:

- Caltrans District 9

The text on page 1-4 shall be amended to read as follows:

ES.5.2 Notice of Availability ~~Completion~~ of the Draft EIR and Public Review Period
Upon completion of the Draft EIR (DEIR), another public notice announcing the availability ~~completion~~ of the Draft EIR for review and comment~~, called a Notice of Completion (NOC)~~ was filed in accordance with CEQA with the Governor's Office of Planning and Research - State Clearinghouse and the Kern County Clerk, mailed to interested public agencies, individuals and organizations on April 15, 2016 to initiate a 45-day DEIR public review period. The review period runs from April 15, 2016 through May 31, 2016. Comments submitted should be in writing, if possible and submitted to the City prior to the end of the comment period. Comments should be directed to:

Section 2. Proposed Project Alternatives

No changes or revisions to Section 2, Proposed Project Alternatives, of the Draft EIR are necessary.

Section 3. Impact Analysis

The following text will be added to **Section 3.3.5**, on page 3-29, following Mitigation Measure AQ-1:

AQ-2: A Fugitive Dust Control Plan shall be prepared for the proposed Project to ensure consistency with the EKAPCD Rule 402 for the control and reduction of Fugitive Dust. The Fugitive Dust Control Plan shall include measures to control nuisance caused by fugitive dust during the operation of the WWTF, as well as during construction, and shall address surface soil erosion and loss of topsoil. The Fugitive Dust Control Plan shall be submitted to EKAPCD and approved by EKAPCD prior to commencement of construction activities.

The following text, found in **Section 3.3.6** on page 3-35, shall be amended as follows:

~~**AQ-2:**~~ **AQ-3:** An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project Alternatives to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation and appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.

Mitigation Measure ~~AQ-2~~ AQ-3 would require the preparation of an odor control plan. Implementation of the OCMP would help to minimize and control odorous emissions from the facility. In addition, the OCMP would also help to ensure compliance with applicable EKAPCD Rule 419 for the control of nuisance impacts. With mitigation, this impact would be considered less than significant.

Section 3.3.7, on page 3-35, shall be amended to read as follows:

3.3.7 References

Section 15050 of the CEQA Guidelines provides that an EIR may incorporate, by reference, all or portions of another document that is a matter of public record or is generally available to the public. Where all or part of another document is incorporated by reference, the incorporated language shall be considered to be set forth in full as part of the text of the EIR being prepared. The following documents were incorporated by reference in this section.

Comprehensive Land Use Management Plan (CLUMP) for Naval Air Weapons Station China Lake, California, May 2005.

See Air Quality & GHG Impact Assessment prepared by Ambient Air Quality & Noise Consulting (Appendix B).

Section 3.8.4.4, on page 3-96, shall be amended to read as follows:

Alternatives 1 and 2: **Less Than Significant.** The City and NAWS Sites are both located in the vicinity of NAWS China Lake runways. Related to safety within the vicinity of the airport land use plan, the AICUZ states that the Navy identifies Accident Potential Zones (APZs) around its runways based on historical data for aircraft mishaps. The Navy recommends land uses that concentrate large numbers of people – such as apartments, churches, and schools – be located outside of APZs. In addition, the FAA and military have defined flight safety zones (imaginary surfaces) below aircraft arrival and departure flight tracks and surrounding the airfield. For the safety of the aircraft, the heights of structures and vegetation are restricted in these zones. All ~~aircraft safety zones~~ APZs associated with NAWS China Lake ~~the Station~~ lie within the NAWS China Lake facility boundaries, therefore no hazards will be posed regarding the City Site. The NAWS China Lake Site is not located within either an APZ or a designated safety zone, indicating that there is minimal risk to any workers that may be involved with construction or operation under either Alternative 1 or 2. Further, the proposed WWTP is not a land use that concentrates large numbers of people, therefore impacts related to the hazards due to the safety of residents and/or pilots of aircraft are Less Than Significant.

The following text will be added on page 3-97, following **Section 3.8.4.7**:

VIII-i) The proposed Project may generate vectors.

Alternatives 1 and 2: **Potentially Significant – Less than Significant With Mitigation Incorporated.** The City of Ridgecrest has an active vector control program for the control of mosquitoes in the area. The Public Works Department administers the program. The following mitigation measures shall ensure that potential impacts remain less than significant.

Mitigation Measures

HAZ-4: Pre-treatment and adulticiding methods shall be employed at the WWTP to control mosquitoes. Pooling water sources around the WWTP such as large puddles from storms and irrigation tail water shall be treated as it accumulates. Adulticiding shall be accomplished in accordance with Best Management Practices which may include fogging the area where sever mosquitoes occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

The following text, found in **Section 3.9.2.2** in the first bullet point of page 3-115, shall be amended as follows:

- Beneficial Uses: Groundwater beneficial uses designated for this portion of the Lahontan Basin are contained in the Basin Plan and include agricultural (AGR) and municipal (MUN) uses. However, in 2015 the MUN use was removed from the groundwater underlying the NAWS

The following text will be added to the end of **Section 3.9.6**, on page 3-125:

HYD-4: Prepare a Storm Water Pollution Prevention Plan (SWPPP) for construction of the chosen alternative, in accordance with the specifications in the current Construction General Permit..

HYD-5: Identify and conform with construction and post-construction Best Management Practices for storm water management, and implement those BMPs to minimize erosion, promote groundwater recharge and protect ephemeral streams from pollution.

The No Project Alternative analysis contained in **Section 3.9.6 IX-a**, on page 3-125, shall be amended as follows:

> No Project Alternative: **No Impact.** The No Project Alternative would result in no ~~change to the existing environment.~~ action being taken to change the location or the components of the City's existing wastewater treatment system. The City's 2015 Wastewater Treatment Facility Plan states that even certain deficiencies at the existing plant were to be corrected to the extent feasible, the overall plant would still contain many of its original, outdated, and/or obsolete components. The system would continue to operate as it currently does. Groundwater, source water, and effluent wastewater statistics would be expected to remain the same. Therefore, the environmental baseline would be maintained and **No Impact** would occur.

The text on page 3-125, under **Section 3.9.6 IX-b**, shall be amended to read as follows:

> No Project Alternative: **No Impact.** The No Project Alternative would result in no ~~change to the existing environmental.~~ action being taken to change the location or the components of the City's existing wastewater treatment system. The City's 2015 Wastewater Treatment Facility Plan states that even certain deficiencies at the existing plant were to be corrected to the extent feasible, the overall plant would still contain many of its original, outdated, and/or obsolete components. The system would continue to operate as it currently does. Groundwater, source water, and effluent wastewater statistics would be expected to remain the same. Therefore, the environmental baseline would be maintained and **No Impact** would occur.

The text on page 3-127, under **Section 3.9.6 IX-f**, shall be amended as follows:

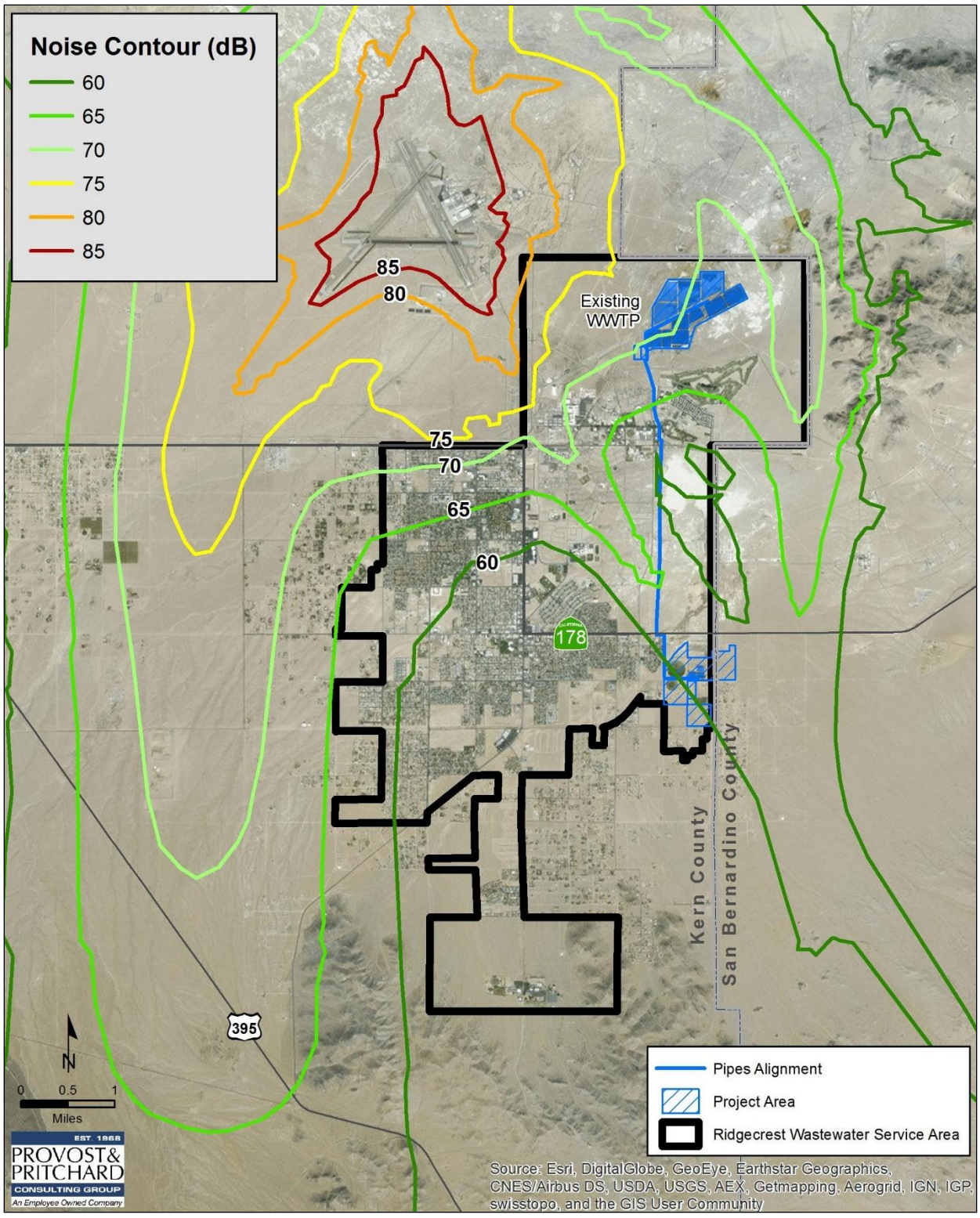
> No Project Alternative: **No Impact.** The No Project Alternative would result in no ~~change to the existing environmental.~~ action being taken to change the location or the components of the City's existing wastewater treatment system. The City's 2015 Wastewater Treatment Facility Plan states that even certain deficiencies at the existing plant were to be corrected to the extent feasible, the overall plant would still contain many of its original, outdated, and/or obsolete components. The system would continue to operate as it currently does. Groundwater, source water, and effluent wastewater statistics would be expected to remain the same. Therefore, the environmental baseline would be maintained and **No Impact** would occur.

The third and fourth paragraphs of **Section 3.12.2**, on page 3-147, under the "Naval Air Weapons Station China Lake Air Installation Compatible Use Zone (AICUZ) Study" heading, have been amended as follows:

The AICUZ outlines noise and safety issues in relation to both the baseline (current) and prospective operational conditions of the base as laid out in the 2004 Environmental Impact Statement (EIS) for Proposed Military Operational Increases and Implementation of Associated Comprehensive Land Use and Integrated Natural Resources Management Plans. The proposed action in the EIS acts as a basis for the program laid out in the ~~2007~~ 2011 AICUZ. The installation's cooperation with local government agencies is outlined in the introduction to the AICUZ, which states the responsibility of the Navy to inform and cooperate with the planning departments of Kern and San Bernardino Counties along with the City of Ridgecrest. The 2011 AICUZ is an updated draft released following the interim 2007 AICUZ; the main changes to the report were concerning the impact of the addition of Joint Strike Fighters to China Lake NAWS. ~~As noted above, this study is an interim report, and after further evaluation, including the impact of the Joint Strike Fighter, an updated AICUZ may be released.~~

The AICUZ includes ~~As part of the AICUZ study, the Navy proposed~~ an expansion of the traditional AICUZ planning area, called a Military Influence Area (MIA), to address the higher safety risks in these areas.

Figure 3-8, on page 3-150, shall be removed and replaced as shown below:



The reference for **Figure 3-8**, on page 3-150, shall be amended as follows:

> China Lake Naval Air Weapons Station Air Installation Compatible Use Zone Study, Figure 5-3 ~~5-2~~, Page 5-13 ~~5-7~~

The second reference listed in **Section 3.12.9**, on page 3-163, shall be amended as follows:

> China Lake Naval Air Weapons Station Air Installation Compatible Use Zone Study
> Adopted Date: April 2011 ~~5/30/2007~~
> http://www.chinalakeleis.com/system/assets/34/original/nawscl_aicuz_final_2011.pdf
> ~~http://www.navair.navy.mil/nawcwd/nawcwd/downloads/environmental_news/aicuz_naws_china_lake/FINAL_China_Lake__AICUZ_MAY_07_3.pdf~~
> Access Date: 6/16/2016 ~~6/15/2015~~

The text of the second paragraph of **Section 3.16.2.1**, on page 3-175, shall be amended as follows:

> ~~Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003 (SAFETEA): The Bush Administration's SAFETEA bill offers proposals to make our highways safer. Enactment of this bill would be an important step in reducing highway fatalities and injuries, and providing greater flexibility to State and local governments to use these funds consistent with a comprehensive strategic highway safety plan. The President's proposal would provide funding for highway and safety programs and for public transportation programs from fiscal year 2004 through fiscal year 2009.~~
>
> Fixing America's Surface Transportation (FAST) Act: On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains the focus on safety, keeps intact the established structure of the various highway-related programs we manage, continues efforts to streamline project delivery and, for the first time, provides a dedicated source of federal dollars for freight projects. With the enactment of the FAST Act, states and local governments are now moving forward with critical transportation projects with the confidence that they will have a federal partner over the long term.

The text in **Section 3.16.2.2**, on page 3-176, shall be amended as follows:

~~The proposed Project~~ Components of Alternatives 1 and 2 would cross the State Route 178 right-of-way. Either Alternative would be subject to applicable Caltrans standards, including but not necessarily limited to traffic-control measures (e.g. flagging, lane diversion, etc), acquisition of encroachments permits, and/or construction standards, as appropriate. ~~do not front a state highway, nor would it generate significant amounts of vehicle traffic that could potentially impact state facilities. Therefore, no state regulations are applicable to the proposed Project Alternatives.~~

Figure 3-9, on page 3-178, shall be removed and replaced as shown below:

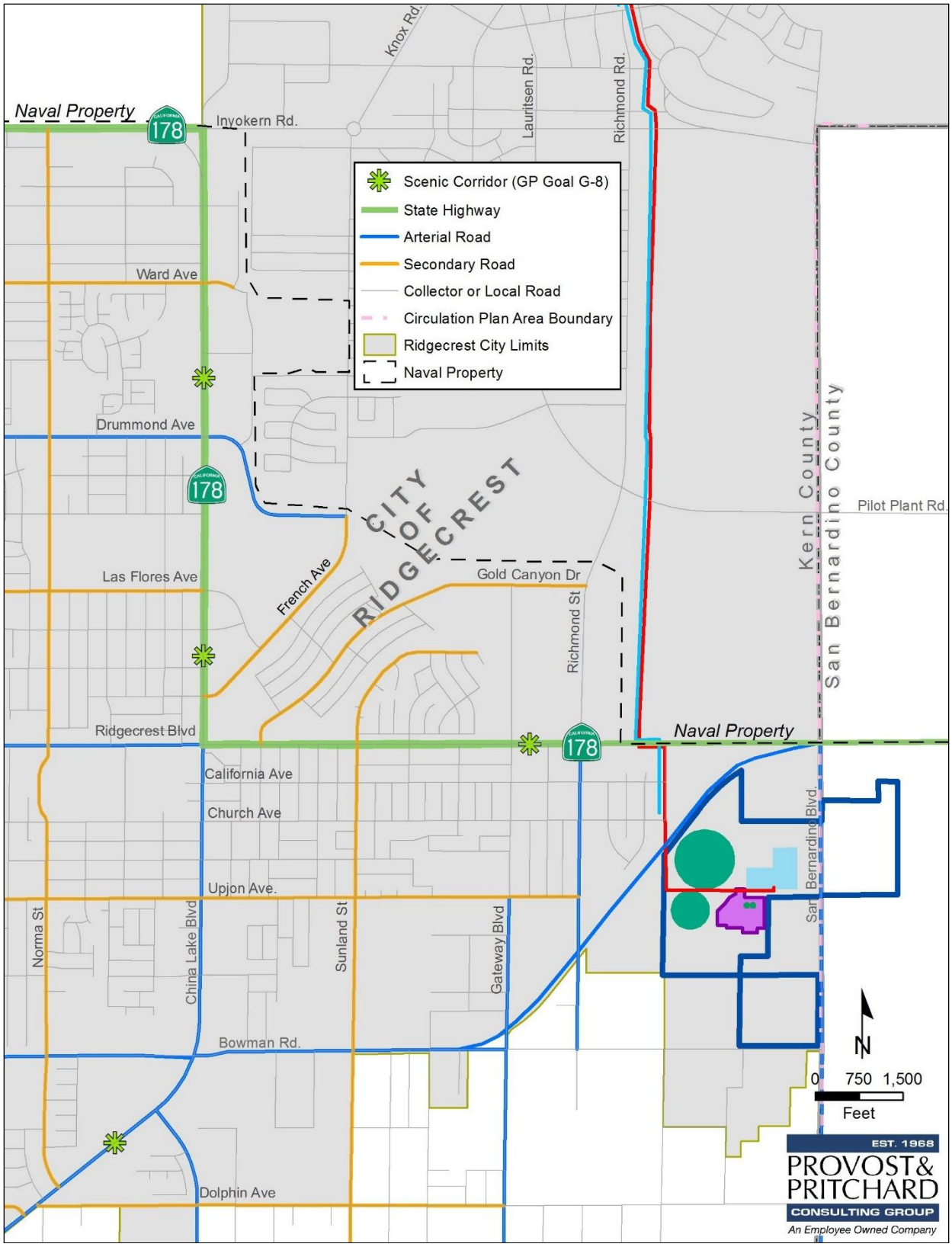
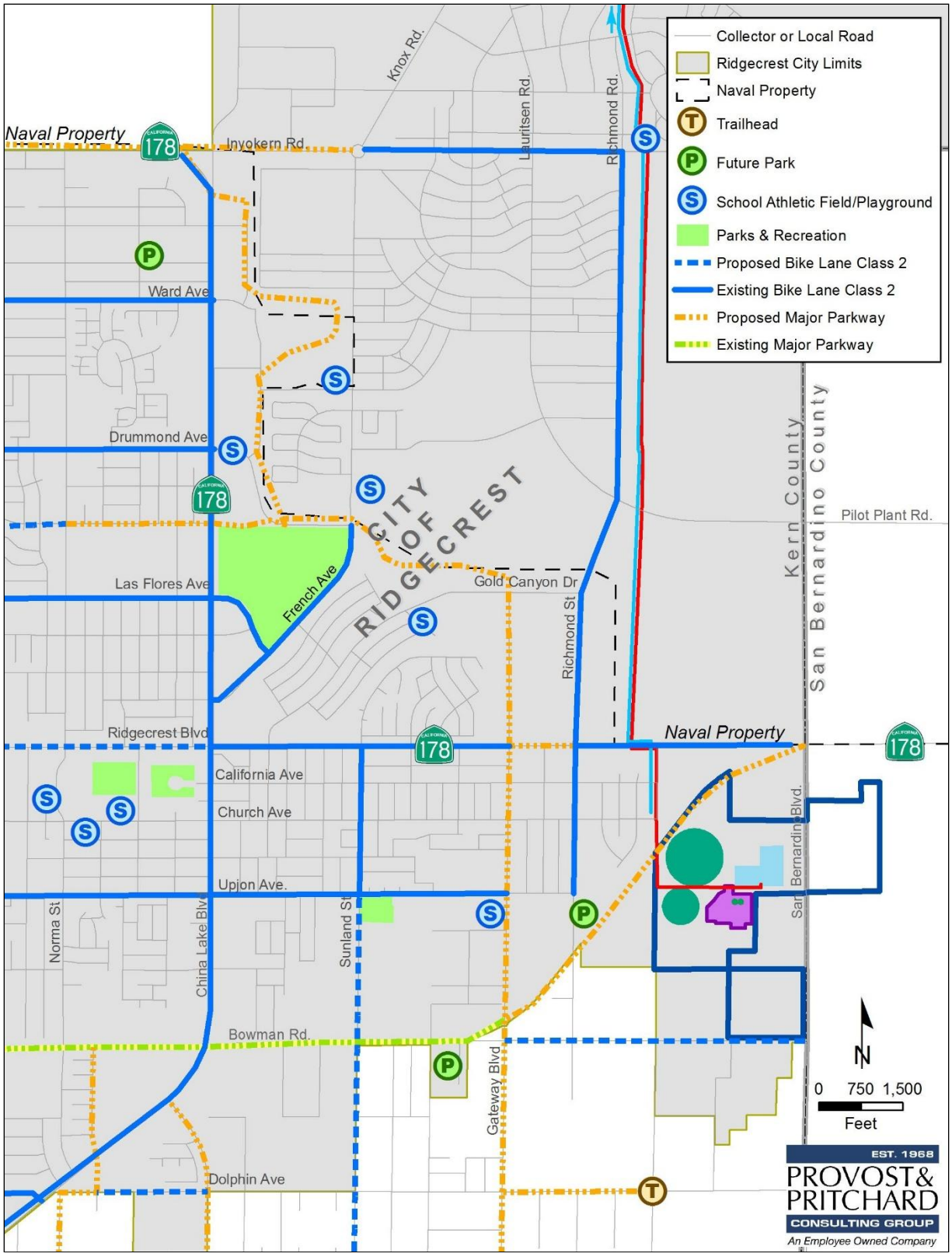


Figure 3-10 on page 3-179, shall be removed and replaced as shown below:



The following new mitigation measures shall be added to **Section 3.16.3** on page 3-183, following mitigation measure TR-2:

TR-3 Provide a Traffic Control Plan to the Kern County Public Works Department, Building & Development Division and/or Caltrans District 9, respectively, for any construction that may take place within each agency's right-of-way and/or that may affect operations of the respective agency's roadway(s). The Plan shall address the routes, duration and manner of traffic control that will be implemented to accommodate construction related traffic.

TR-4 Enter into a secured agreement with the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.

TR-5 Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits shall be obtained from the Kern County Public Works Department, Permits Engineer.

TR-6 Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilized County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.

TR-7 Project construction timing may coincide with other neighboring projects. Coordinate construction traffic with The City of Ridgecrest and Kern County Public Works Departments to avoid possible conflicts during the project construction phases.

TR-8 Any traffic control activity on SR 178 shall meet Caltrans standards and shall be accompanied by an encroachment permit issued by Caltrans.

The impact analysis in **Section 3.17.3.2**, on page 3-190, shall be amended as follows:

Alternatives 1 and 2: ~~**Potentially Significant Impact- Significant and Unavoidable.**~~ **Less Than Significant.** The existing WWTP has a permitted capacity of 3.6 mgd by the Lahontan Regional Water Quality Control Board (Regional Board). Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. Potential impacts relating to the construction and operation of the proposed Project under both alternatives has been discussed throughout this document. ~~While mitigation is sufficient for many impacts, there are impacts where feasible mitigation could not be identified. Therefore, the proposed Project Alternatives would result in significant and unavoidable impacts~~. The Project under Alternatives 1 and 2 provides mitigation for impacts related to the need for new water or wastewater treatment facilities and would therefore have a Less than Significant effect.

The text in **Section 3.17.3.2**, on page 3-190, shall be amended as follows:

~~**XVII-b) Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**~~

~~Alternatives 1 and 2:~~ ~~**Potentially Significant Impact- Significant and UnavoidableLess Than Significant.**~~ ~~The existing WWTP has a permitted capacity of 3.6 mgd by the Lahontan Regional Water Quality Control Board (Regional Board). Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. Potential impacts relating to the construction and operation of the proposed Project under both alternatives has been discussed throughout this document. While mitigation is sufficient for many impacts, there are impacts where feasible mitigation could not be identified. Therefore, the proposed Project Alternatives would result in significant and unavoidable impacts.~~

Section 4. Cumulative Impact Assessment

No changes or revisions to Section 4, Cumulative Impact Assessment, of the Draft EIR are necessary.

Section 5. Other Mandatory CEQA Sections

No changes or revisions to Section 5, Other Mandatory CEQA Sections, of the Draft EIR are necessary.

Section 6. Mitigation Monitoring and Reporting Program

Changes or revisions to mitigation measures noted in the Errata result in similar changes to the Executive Summary and Section 6, Mitigation Monitoring and Reporting Program (MMRP), respectively. The revised MMRP is located in Section 3 of this Final EIR.

1.3 Effects of Corrections and Additions

The above Errata document additional changes to the EIR (comprising the Draft EIR and Final EIR). As demonstrated by the following discussion, the modifications to the EIR do not result in new significant impacts and do not warrant recirculation of the EIR.

CEQA Guidelines Section 15088.5 requires that an EIR that has been available for public review, but not yet certified, be recirculated only if significant new information has been added to the EIR. Pursuant to CEQA Guidelines Section 15088.5(c), the entire document need not be circulated if revisions are limited to specific portions of the document. The relevant portions of CEQA Guidelines Section 15088.5 read as follows:

a. A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation include, for example, a disclosure showing that:

    1. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

2. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to the level of insignificance.
3. A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
4. The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

b. Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

The information contained in these Errata merely clarifies, amplifies, or makes insignificant changes to the information that has already been presented in the EIR. In addition, the modifications to the EIR are not significant because the EIR is not changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the Project. Based on the above, the clarifications to the EIR would not result in any new significant impacts or a substantial increase in the severity of any impact already identified in the EIR. None of the conditions in Section 15088.5 of the CEQA Guidelines is met and recirculation is not required.

2 Responses to Public Comment

2.1 Introduction

The following are responses to comments received during the public review period of the draft environmental impact report (Draft EIR), prepared for the New City Wastewater Treatment Plant (Project). The Draft EIR was circulated for public review from April 15, 2016 through May 31, 2016. Nine comment letters were received:

A. Eastern Kern Air Pollution Control District;

B. California Department of Transportation (Caltrans) District 9;

C. Kern County Public Works Department;

D. Mr. Don McKernan, Bowman Road resident;

E. Lahontan Regional Water Quality Control Board;

F. Stan Rajtora, Ph.D., Ridgecrest resident;

G. Eastern Kern County Resource Conservation District; and

H. San Bernardino County, Department of Public Works.

I. National Public Lands News.com

While these comments resulted in minor changes to the EIR, none of the comments identified a new, unavoidable significant effect, nor did they result in a finding that the proposed mitigation measures in the EIR will not reduce potential effects to less than significant levels. Instead, the minor changes serve merely to clarify and expand upon information in the EIR. Accordingly, pursuant to CEQA Guidelines Section 15073.5, recirculation of the EIR is not required.

2.2 Letter A: Eastern Kern Air Pollution Control District

Letter A

Eastern Kern
Air Pollution Control District

Glen E. Stephens, P.E.
Air Pollution Control Officer

April 21, 2016

City of Ridgecrest
Attn: John Bracken, Wastewater Supervisor
100 W. California Avenue
Ridgecrest, CA 93555

SUBJECT: Draft Environmental Impact Report (EIR) for New City Wastewater Treatment Plant

Dear Mr. Bracken:

A/1 Eastern Kern Air Pollution Control District (District) acknowledges receipt of the draft EIR for New City Wastewater Treatment Plant. Thank you for providing a copy of this document to the District.

A/2 Upon review of the draft EIR, the proposed project whether Alternative 1 or Alternative 2 will require a District approved Fugitive Dust Emissions Control Plan pursuant to Section V.D of District Rule 402 prior to grading and construction activities. The District has no further comments.

Should you have any questions, please contact Wunna Aung at (661) 862-5250 or aungw@co.kern.ca.us.

Sincerely,

Glen E. Stephens, P.E.
Air Pollution Control Officer
GES:WA

Administrative Office: 2700 "M" Street, Suite 302, Bakersfield, CA 93301-2370
Phone (661) 862-5250 – Fax (661) 862-5251
www.kernair.org – ekapcd@co.kern.ca.us

Response A/1

Comment noted.

Response A/2

Comment noted. Preparation of a Fugitive Dust Control Plan (Rule 402) is a regulatory requirement of the Eastern Kern Air Pollution Control District, and is discussed on Page 3-21 under Local Regulatory Setting for Air Quality. As stated on page 3-29, "Incorporation of the proposed Mitigation Measure **AQ-1** would reduce fugitive dust emissions by approximately 50 to 61 percent." **AQ-1** includes provisions that would reduce emissions of diesel PM from on-road vehicles and off-road equipment. Implementation of **AQ-1** would also ensure compliance with applicable EKAPCD rules and regulations, including Rule 402, which imposes limitations on visible dust emissions at offsite locations. AQ-2 ensures compliance with Rule 419 related to nuisance impacts; that Mitigation Measure has been reassigned the designation **AQ-3.** For clarity, new Mitigation Measure AQ-2 has been added to ensure compliance with Rule 402:

AQ-2: A Fugitive Dust Control Plan shall be prepared for the proposed Project to ensure consistency with EKAPCD Rule 402 for the control and reduction of Fugitive Dust. The Fugitive Dust Control Plan shall include measures to control nuisance cause by fugitive dust during the operation of the WWTF, as well as during construction, and shall address surface soil erosion and loss of topsoil. . The Fugitive Dust Control Plan shall be submitted to EKAPCD and approved by EKAPCD prior to commencement of construction activities.

2.3 Letter B: Department of Transportation, District 9

Letter B

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 9
500 SOUTH MAIN STREET
BISHOP, CA 93514
PHONE (760) 872-0785
FAX (760) 872-0678
TTY 711
www.dot.ca.gov

Serious drought.
Help save water!

May 2, 2016

Mr. John Bracken
City of Ridgecrest
100 West California Avenue
Ridgecrest, California 93555

File: Ker-178-104
DEIR
SCH: #2015061095

New Ridgecrest Wastewater Treatment Plant – Draft Environmental Impact Report (DEIR)

Dear Mr. Bracken:

B/1 The California Department of Transportation (Caltrans) District 9 appreciates being able to comment on the DEIR for the proposed wastewater treatment plant to service the City and China Lake Naval Air Weapons Station. Thank you for the phone communication, on April 21, 2016. As I mentioned, our July 13, 2015, Notice of Preparation comment letter was not included in the DEIR; hence I emailed you it with the right-of-way maps enclosures. The following incudes all of our comments:

B/2
- **Alternative 1** – shows the existing sewer lines (force and gravity mains) are to remain as is. This line appears to enter State Route (SR) 178 right-of-way (R/W) near Richmond Road, then parallels SR 178 until Lumill Street, where it then crosses under SR 178.

  We have a record of the permit issued in 1975 for construction of this line. However, since then, the SR 178 R/W width has changed and now the line is likely within current R/W. The permit denotes the crossing at Lumill St. (and Ward St.), when the original construction occurred, but does not include any longitudinal section between Richmond Rd. and Lumill St.

  Please verify the location of the existing line in relation to SR 178 R/W (see enclosed maps). An updated permit may be necessary for the longitudinal line.

B/3
- **Alternative 2** – includes both abandoning a gravity main and constructing a force main in the vicinity of, and crossing SR 178 near Lumill St. An encroachment permit will be required with traffic control and construction methods via the Caltrans Encroachment Permit Manual. Please see:

  http://www.dot.ca.gov/trafficops/ep/docs/Chapter_5.pdf

  http://www.dot.ca.gov/trafficops/ep/docs/Chapter_6.pdf

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B/4
- Section 1.4 **Use of the EIR** - Caltrans District 9 should be added to the list of permitting agencies.

B/5
- Section 3.16.2.1 **Regulatory Setting, Federal -** Some information is outdated. Fixing America's Surface Transportation (FAST) Act is the current federal transportation funding and authorization bill.

B/6
- Section 3.16.2.2 **Regulatory Setting, State** - Alternative 2, does affect a state highway (SR 178), hence, Caltrans standards are applicable.

B/7
- Section 3.16.2.3 **Regulatory Setting, Local Roadway Classification and Standards** - Several places should be updated. Inyokern Road, North China Lake Boulevard and East Ridgecrest Boulevard are SR 178.

B/8
- Sections 3.16.5.3 and 6 **Mitigation Monitoring and Reporting Program, Mitigation Measure TR-1** - Any traffic control activity on SR 178 shall meet Caltrans standards with an encroachment permit.

- For Caltrans Encroachment Permit information, please contact Stephen Winzenread at (760) 872-5222 or stephen.winzenread@dot.ca.gov.

We value a cooperative working relationship with the City concerning project related State highway issues. Please contact me at (760) 872-0785, with any questions.

Sincerely,

GAYLE J. ROSANDER
External Project Liaison

Enclosures

c: State Clearinghouse
Mark Reistetter, Caltrans D-9

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 9
500 SOUTH MAIN STREET
BISHOP, CA 93514
PHONE (760) 872-0785
FAX (760) 872-0678
TTY 711
www.dot.ca.gov

Serious Drought.
Serious drought.
Help save water!

July 13, 2015

Mr. John Bracken
City of Ridgecrest
100 West California Avenue
Ridgecrest, California 93555

File: Ker-178-104
NOP DEIR
SCH: #2015061095

New Ridgecrest Wastewater Treatment Plant – Notice of Preparation (NOP) of a Draft Environmental Impact Report

Dear Mr. Bracken:

The California Department of Transportation (Caltrans) District 9 appreciates being able to comment during the NOP phase for the proposed wastewater treatment plant to service the City and China Lake Naval Air Weapons Station. We offer the following:

- The NOP states the existing sewer line is proposed to remain as is - for all project alternatives. From the map provided, this line appears to enter State Route (SR) 178 right-of-way (R/W) near Richmond St., then parallels SR 178 until Lumill St., where it then crosses under SR 178.

  We have a record of the permit issued in 1975 for construction of this line. However, since then, the SR 178 R/W width has changed and now the line is likely within current R/W. The permit denotes the crossing at Lumill St. (and Ward St.), when the original construction occurred, but does not include any longitudinal section between Richmond and Lumill Streets.

  Please verify the location of the existing line in relation to SR 178 R/W (see enclosed maps). An updated permit may be necessary for the longitudinal line. For further permit information you may contact Stephen Winzenread at 760-872-5222 or stephen.winzenread@dot.ca.gov.

We value our cooperative working relationship with the City concerning project related State highway issues. Please contact me at (760) 872-0785, with any questions.

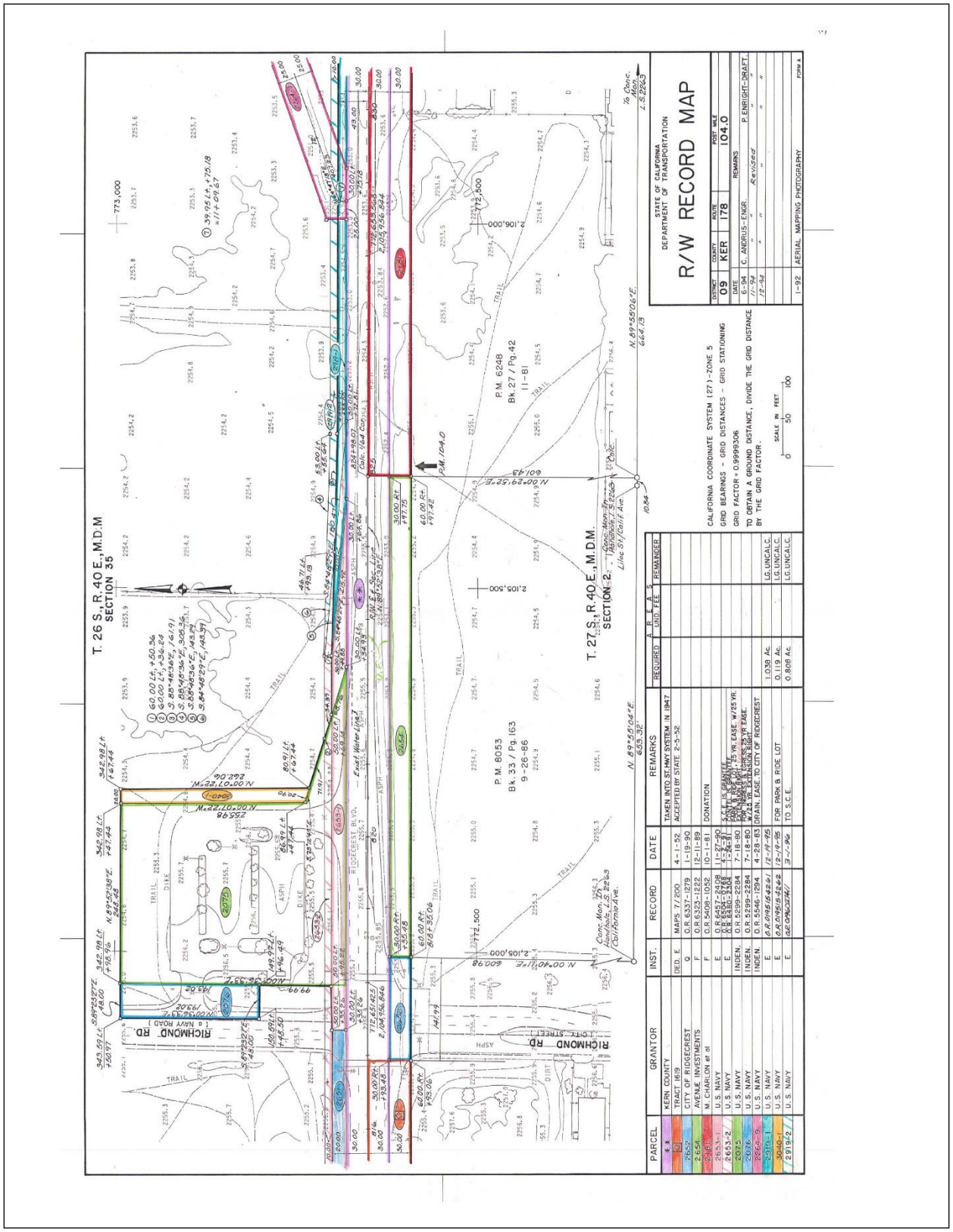
Sincerely,

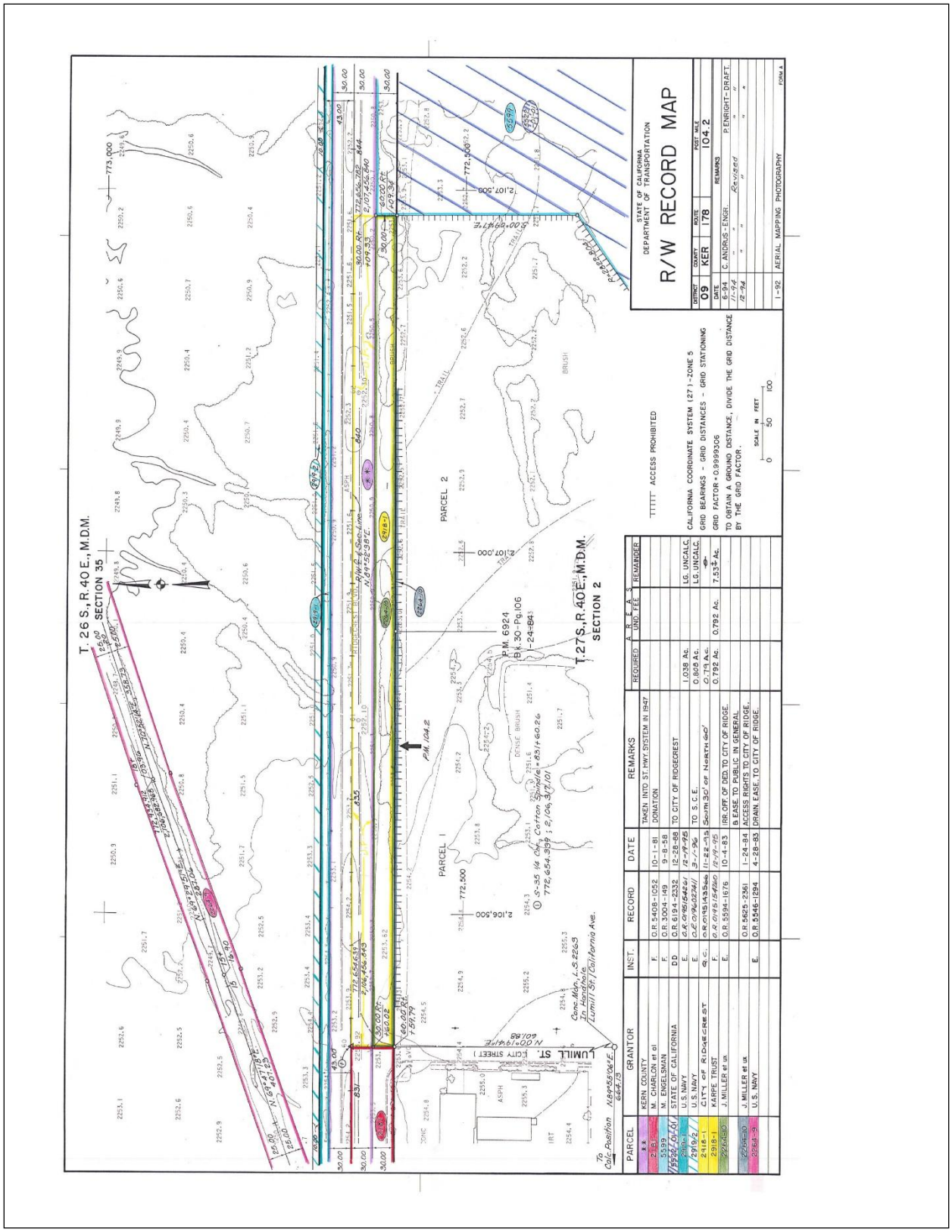
GAYLE J. ROSANDER
Local Development-Intergovernmental Review

Enclosures

c: State Clearinghouse
Mark Reistetter, Caltrans D-9

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"


R/W RECORD MAP
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
T. 26 S., R. 40 E., M.D.M.
SECTION 35
T. 27 S., R. 40 E., M.D.M.
SECTION 2
P.M. 104.0
P.M. 6248
Bk. 27 / Pg. 42
11 - 81
P.M. 8053
Bk. 33 / Pg. 163
9 - 26 - 86
RIDGECREST BLVD.
RICHMOND RD.
OLD STATE HWY. 395
(NAVY ROAD)
CALIFORNIA COORDINATE SYSTEM (27) - ZONE 5
GRID BEARINGS - GRID DISTANCES - GRID STATIONING
GRID FACTOR = 0.99993306
TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY THE GRID FACTOR.
SCALE IN FEET
0 50 100
DISTRICT 09
COUNTY KER
ROUTE 178
POST MILE 104.0
DATE 6-94
BY C. ANDRUS - ENGR
REMARKS P. ENRIGHT - DRAFT
11-94 " " Revised " "
12-96 " " " "
1-92 AERIAL MAPPING PHOTOGRAPHY
FORM A
PARCEL
GRANTOR
INST.
RECORD
DATE
REMARKS
AREAS REQUIRED
AREAS UNDIV. FEE
REMAINDER
KERN COUNTY
TRACT 1619
DED. E
MAPS 7/200
4-1-52
ACCEPTED BY STATE 2-3-52
CITY OF RIDGECREST
Q
O.R. 6337-1279
1-19-90
AVENUE INVESTMENTS
F
O.R. 6323-1222
12-11-89
M. CHARLTON et al
F
O.R. 5408-1052
10-1-81
DONATION
U.S. NAVY
E
O.R. 6457-2308
11-27-90
U.S. NAVY
E
O.R. 6480-2304
1-24-91
U.S. NAVY
INDEN.
O.R. 3299-2284
7-18-60
U.S. NAVY
INDEN.
O.R. 3299-2284
7-18-60
U.S. NAVY
INDEN.
O.R. 3299-2284
7-18-60
U.S. NAVY
E
O.R. 5546-1264
4-29-83
U.S. NAVY
E
O.R. 6965-642 &1
12-19-95
1.038 Ac.
L.G. UNCALC.
U.S. NAVY
E
O.R. 6965-642 &2
12-19-95
0.119 Ac.
L.G. UNCALC.
U.S. NAVY
E
O.R. 6965-642 &3
12-19-95
0.808 Ac.
L.G. UNCALC.
2919-2
U.S. NAVY
E
O.R. 6965-642 &4
3-1-96
TO S.C.E.



PARCEL	GRANTOR	INST.	RECORD	DATE	REMARKS	AREAS REQUIRED	AREAS UND. FEE	REMAINDER
**	KERN COUNTY				TAKEN INTO ST. HWY. SYSTEM IN 1947			
2181	M. CHARLTON et al	F.	O.R. 5408-1052	10-1-81	DONATION			
5399	M. ENGELSMAN	F.	O.R. 3004-149	9-8-58				
75282-20-01	STATE OF CALIFORNIA	D	O.R. 6194-2332	12-28-88	TO CITY OF RIDGECREST	1.038 Ac.		
2918-1	U.S. NAVY	E.	O.R. 6185-1445	12-19-95		0.808 Ac.	LG. UNCALC.	
2412-1	U.S. NAVY	E.	O.R. 6340-2241	3-1-96	TO S.C.E.		LG. UNCALC.	
2918-1	CITY OF RIDGECREST	Q.C.	O.R. 6018-1438	11-22-96	South 30' of North 60'	0.794 Ac.		
2918-1	KARPE TRUST	E.	O.R. 6018-1460	12-31-96		0.792 Ac.	7.53± Ac.	
2256-10	J. MILLER et ux	E.	O.R. 5594-1676	10-4-83	IRR. OFF OF SED. TO CITY OF RIDGE. & EASE. TO PUBLIC IN GENERAL			
2256-10	J. MILLER et ux		O.R. 5625-2361	1-24-84	ACCESS RIGHTS TO CITY OF RIDGE.			
2264-9	U.S. NAVY	E.	O.R. 5546-1294	4-28-83	DRAIN. EASE. TO CITY OF RIDGE.			

DATE	BY	REMARKS
6-6-94	C. ANDRUS - ENGR.	P. ENRIGHT - DRAFT.
11-94	" "	Revised " "
12-94	" "	" "

Response B/1

Comment noted.

Response B/2

Comment noted. Prior to construction, the City will coordinate with Caltrans to ensure that updated and/or new encroachment permits are obtained as applicable.

Response B/3

Comment noted.

Response B/4

Comment noted. The text on page 1-2 has been amended as follows:

- Caltrans District 9

Response B/5

Comment noted. The text on page 3-175 has been amended as follows:

~~**Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003 (SAFETEA):** The Bush Administration's SAFETEA bill offers proposals to make our highways safer. Enactment of this bill would be an important step in reducing highway fatalities and injuries, and providing greater flexibility to State and local governments to use these funds consistent with a comprehensive strategic highway safety plan. The President's proposal would provide funding for highway and safety programs and for public transportation programs from fiscal year 2004 through fiscal year 2009.~~

Fixing America's Surface Transportation (FAST) Act: On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains the focus on safety, keeps intact the established structure of the various highway-related programs we manage, continues efforts to streamline project delivery and, for the first time, provides a dedicated source of federal dollars for freight projects. With the enactment of the FAST Act, state and local governments are now moving forward with critical transportation projects with the confidence that they will have a federal partner over the long term.

Response B/6

Comment noted. The text on page 3-176 has been amended as follows:

3.16.2.2 State

Components of Alternatives 1 and 2 would cross the State Route 178 right-of-way. Either Alternative would be subject to applicable Caltrans standards, including but not necessarily limited to

traffic-control measures (e.g. flagging, lane diversion, etc.), acquisition of encroachments permits, and/or construction standards, as appropriate.

Response B/7

Comment noted. Figures 3-9 and 3-10 have been corrected to reflect the comments. Also, refer to Errata.

Response B/8

Comment noted. As seen in C/1 below, the text on page 3-182 and Mitigation Measure TR-1 shall be amended as follows:

TR-1: During construction, fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof. . Any traffic control activity on SR 178 shall meet Caltrans standards with an encroachment permit.

Additionally, the following new Mitigation Measures shall be implemented:

TR-3 Provide a Traffic Control Plan to the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway and Caltrans District 9, that addresses the routes, duration and manner of traffic control that will be implemented to accommodate construction-related traffic.

TR-4 Enter into a secured agreement with the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.

TR-5 Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits shall be obtained from the Kern County Public Works Department, Permits Engineer.

TR-6 Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilized County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.

TR-7 Project construction timing may coincide with other neighboring projects. Coordinate construction traffic with The City of Ridgecrest and Kern County Public Works Departments to avoid possible conflicts during the project construction phases.

TR-8 Any traffic control activity on SR 178 shall meet Caltrans standards and shall be accompanied by an encroachment permit issued by Caltrans.

2.4 Letter C: Kern County Public Works Department

Letter C

KERN COUNTY
PUBLIC WORKS DEPARTMENT
CRAIG M. POPE, P.E., DIRECTOR

ADMINISTRATION & ACCOUNTING
OPERATIONS & MAINTENANCE
BUILDING & DEVELOPMENT
ENGINEERING

2700 "M" STREET
BAKERSFIELD, CA 93301-2370

Phone: (661) 862-8850
FAX: (661) 862-8905
Toll Free: (800) 552-5376 Option 5
TTY Relay: (800) 735-2929

May 16, 2016

Ref: 8-4.7 Draft Environmental Impact Report
New City Wastewater Treatment Plant

City of Ridgecrest
Attn: John Bracken, Wastewater Supervisor
100 W. California Avenue
Ridgecrest, CA 93555

Subject: New City Wastewater Treatment Plant (State Clearinghouse #2015061095)

Dear: Mr. Bracken,

C/1

This Department has reviewed section 3.16 Transportation/Traffic as part of the subject project draft environmental impact report and concurs with the findings. However we recommend the follow be added to mitigation measure TR-1:

1. Provide a Traffic Control Plan to the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway and Caltrans District 9, that addresses the routes, duration and manner of traffic control that will be implemented to accommodate construction related traffic

2. Enter into a secured agreement with the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.

3. Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits may be obtained from our Permits Engineer.

4. Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilize County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.

5. Project construction timing may coincide with other neighboring projects. Coordinate construction traffic to avoid possible conflicts during the project construction phases.

Thank you for the opportunity to comment on this project, if you have any questions or comments please contact me at (661) 862-8869 or paulc@co.kern.ca.us. Also, contact the California Department of Transportation District 9 regarding this project.

Sincerely,

Paul Candelaria
Engineer II

Response C/1

Comment noted. The text on page 3-182 and Mitigation Measure TR-1 shall be amended as follows:

TR-1: During construction, fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof. Any traffic control activity on SR 178 shall meet Caltrans standards with an encroachment permit.

Additionally, the following new Mitigation Measures shall be implemented:

TR-3 Provide a Traffic Control Plan to the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway and Caltrans District 9, that addresses the routes, duration and manner of traffic control that will be implemented to accommodate construction related traffic.

TR-4 Enter into a secured agreement with the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.

TR-5 Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits shall be obtained from the Kern County Public Works Department, Permits Engineer.

TR-6 Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilized County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.

TR-7 Project construction timing may coincide with other neighboring projects. Coordinate construction traffic with The City of Ridgecrest and Kern County Public Works Departments to avoid possible conflicts during the project construction phases.

TR-8 Any traffic control activity on SR 178 shall meet Caltrans standards and shall be accompanied by an encroachment permit issued by Caltrans.

2.5 Letter D: Mr. Don McKernan, Bowman Road Resident

Letter D

May 16, 2016

City of Ridgecrest
100 W. California Avenue
Ridgecrest, CA 93555

Attn: John Bracken, Wastewater Supervisor

In response to DEIR mailed April 15, 2016, my objections to the Alternate 2 site are:

D/1 1. Odor pollution of surrounding area. (We get odor now with one pond.)

D/2 2. Increased insect and coyote population.

D/3 3. Increased cost to operate pipeline, plumbing and security issues.

D/4 4. Does this DEIR also cover the race track operation on the City 's land in this area – noise, dust, safety (no fence), and road closers. No EIR has been done on this before.

D/5 I oppose the location of Alternate 2.

Sincerely,

Don J. McKernan
Bowman Road Resident

Response D/1

Comment noted. To address odor pollution, Mitigation Measure AQ-2 requires preparation of an Odor Control Mitigation Plan (OCMP). Said Odor Control Plan will control odors generated by the proposed Project that have the potential to result in odor pollution.

Response D/2

The Commenter presents concerns related to insect and vector control at the proposed WWTP. This comment represents a valid concern. Accordingly, we have added language as follows:

> **VIII-i) The proposed Project may generate vectors.**
>
> Alternatives 1and 2: **Potentially Significant– Less Than Significant With Mitigation Incorporated.** The City of Ridgecrest has an active vector control program for the control of mosquitoes in the area. The Public Works Department administers the program. The following mitigation measures shall ensure that potential impacts remain less than significant.
>
> **HAZ-4:** Pre-treatment and adulticiding methods shall be employed at the WWTP to control mosquitoes. Pooling water sources around the WWTP such as large puddles from storms and irrigation tail water shall be treated as it accumulates. Adulticiding shall be accomplished in accordance with Best Management Practices which may include fogging the area where severe mosquitoes occur.
>
> No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.
>
> With regards to the coyote population, coyotes are a common species found throughout California. As such, they are not a species that is considered sensitive, or at risk of becoming a threatened or endangered species. Any negative impacts that the project could have on this species would be considered less than significant. Furthermore, there are no known elements of the project that would cause local populations of coyotes to increase, such that there would be increased predation on other locally occurring special status species. For these reasons, the project will have a less than significant effect on the coyote population and changes in predation pressure on locally occurring species.

Response D/3

Comment noted. The City of Ridgecrest has taken into consideration all costs related to the construction and operation of pipelines, plumbing and security for the proposed Wastewater Treatment Plant and has found that the benefits of operating the plant outweigh the costs.

Response D/4

For purposes of clarification, the area described by the Commenter as the "race track" is discussed in the DEIR as the existing off-road vehicle park. The DEIR analyzes potential impacts related to removal of the facility as part of development of the new WWTP in Section 3.10, Land Use and Planning, Section 3.13, Population and Housing, Section 3.14, Public Services, Section 3.15, Recreation, and Section 3.13, Utilities

and Service Systems. However, continued operation of the off-road vehicle park is not a component of this Project, and is not addressed within the DEIR.

Response D/5

Comment noted.

2.6 Letter E: Lahontan Regional Water Quality Control Board

Letter E

California Water Boards

Edmund G. Brown Jr., Governor
Matthew Rodriquez, Secretary for Environmental Protection

Lahontan Regional Water Quality Control Board

May 18, 2016

WDID No. 6B150116001

John Bracken, Wastewater Supervisor
100 W. California Avenue
Ridgecrest, CA 93555
Email: jbracken@ridgecrest-ca.gov

Comments on the Draft Environmental Impact Report, City of Ridgecrest, New City Wastewater Treatment Plant, Ridgecrest, Kern County, State Clearinghouse No. 2015061095

E/1 The California Regional Water Quality Control Board, Lahontan Region (Water Board) staff reviewed the Draft Environmental Impact Report (DEIR) for the City of Ridgecrest (City), New City Wastewater Treatment Plant. The DEIR was prepared by the Provost & Pritchard Consulting Group on behalf of the City and submitted in compliance with provisions of The California Environmental Quality Act (CEQA). Water Board staff, acting as a responsible agency, is providing these comments to specify the scope and content of the environmental information germane to our statutory responsibilities pursuant to CEQA Guidelines, California Code of Regulations, title 14, section 15096. Based on our review of the DEIR, we have determined that, the DEIR is generally complete but requires clarification and expansion of ideas in a few areas as explained below.

Existing Wastewater Plant

E/2 The existing City wastewater treatment plant is located on China Lake Naval Air Weapons Station (NAWS) with recycled water delivered to the NAWS, China Lake golf course and to an irrigation site located on City owned land at its former wastewater treatment plant site, southeast of the City. The wastewater plant currently treats about 2.6 million gallons per day (mgd) of sewage collected from both from the City and NAWS. Additionally, the City disposes of sewage biosolids to its irrigation site. The remaining effluent is discharged to 11 percolation ponds adjacent to the current wastewater plant, which is located on the NAWS facility. The Water Board regulates these discharges under the following orders.

WDID No.	Site Name	Board Order No.
6B150116001	Ridgecrest Wastewater Treatment Facility	R6V-2000-056
6B159101001	Biosolids Site	00-10-DWQ
6B159101002	Ridgecrest Reclamation Irrigation Site	R6V-93-0086
6B150703001	USNWC Golf Course Reclamation Facility	84-036

Amy L. Horne, PhD, chair | Patty Z. Kouyoumdjian, executive officer
2501 Lake Tahoe Blvd., So. Lake Tahoe, CA 96150 | 14440 Civic Dr., Ste. 200, Victorville, CA 92392
e-mail Lahontan@waterboards.ca.gov | website www.waterboards.ca.gov/lahontan

Recycled paper

E/3 Around the existing percolation ponds, groundwater monitoring data indicate that drinking water maximum contaminant levels (MCLS) are exceeded for Total Dissolved Solids, and the related constituents, chloride and electrical conductivity. However, the Water Board de-designated the Municipal Beneficial Use for groundwater beneath the current disposal percolation ponds, and therefore, exceedances of MCLs at this location are not exceedances of the water quality objectives.

Proposed Alternatives

E/4 The project is to construct a replacement wastewater treatment plant to service both City and NAWS flow. Two alternative project locations were considered. Both alternatives will incorporate nutrient removal, and increase the permitted capacity of average day maximum month flow to 4.0 mgd and later to 5.4 mgd and treat effluent total nitrogen to 10 mg/L. The City of Ridgecrest is currently looking at two sites to build the new wastewater treatment plant. The first alternative would build the plant on the south western corner of the 355 acre easement leased from the Navy. The second alternative would build a plant on both sides of San Bernardino Boulevard between Church and Bowman Road on approximately 180 acres, maintaining the 12 acres of wastewater ponds. At some point in the future for both alternatives, the City may intend to expand the new treatment plant and include tertiary treatment for treating up to 1.8 mgd of secondary effluent to title 22 recycled water standards for reuse.

Water Board's Authority

E/5 All groundwater and surface waters are considered waters of the State. Surface waters include streams, lakes, ponds, and wetlands, and may be ephemeral, intermittent, or perennial. All waters of the State are protected under California law. State law assigns responsibility for protection of water quality in the Lahontan Region to the Lahontan Water Board. Some waters of the State are also waters of the U.S. The Federal Clean Water Act (CWA) provides additional protection for those waters of the State that are also waters of the U.S.

The *Water Quality Control Plan for the Lahontan Region* (Basin Plan) contains policies that the Water Board uses with other laws and regulations to protect the quality of waters of the State within the Lahontan Region. The Basin Plan sets forth water quality standards for surface water and groundwater of the Region, which include designated beneficial uses as well as narrative and numerical objectives which must be maintained or attained to protect those uses. The Basin Plan can be accessed via the Water Board's web site at http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml.

General Comments

E/6 Water Board staff accepts the water quality impact analysis for this project. Water Board staff believes that text addressing Resolution 68-16, mitigation measures, and the degradation analysis addressing the Salt and Nutrient Management Plan will be the most important items that will need to be submitted along with, or prior to, the Report of Waste Discharge.

Specific Comments

E/7 1. (Page 29 / ES-13) For Impact IX-c, the three significance and mitigation measure columns are not completed. Please complete this table. The Water Board's authority under the Water Code considers receiving waters to be water of the state. The City should prepare a storm-water pollution prevention plan, identify construction and post-construction best management practices (BMPS), and implement those BMPs to minimize erosion, promote groundwater recharge, and protect ephemeral streams from pollutants.

E/8 2. (Page 186 / 3-74) Section 3.8.3 A feasibility study should be made comparing chlorine and UV. If UV is selected, formation of trihalomethanes and other disinfection byproducts in groundwater is prevented. This potential impact was not, and should be, evaluated.

E/9 3. (Page 207 / 3-95 & Page 212 / 3-100) "The beneficial uses of ground waters of the Indian Wells Valley Groundwater Basin are municipal [supply]." According to Resolution R6V-2015-0005 the Water Board removed the Municipal (MUN) designation to ground waters located beneath the Salt Wells Valley and those within the shallow groundwater (above the top of the low-permeability lacustrine clay sediments) in the eastern Indian Wells Valley groundwater basins. Attached is a map showing locations where the MUN use was removed.

E/10 4. (Page 210 / 3-98) "The Water Board imposed a requirement that consistent salt and nutrient management plans be prepared for each basin and sub-basin in California. Such plans must include a significant storm-water use and recharge component." An NPDES construction stormwater permit is not required since there are no Waters of the United States near the project. Water Board staff recommends the preparation of a stormwater pollution prevention plan (SWPPP) with best management practices (BMPS).

E/11 5. "The Water Board regulates site-specific groundwater recharge projects that use recycled water, emphasizing that such projects must not lower the water quality within the groundwater basin." For new projects, a degradation analysis is required for satisfying State Board Resolution 68-16. Include in the DEIR an analysis describing the effects of recharge with respect to salt and nutrient loading to underlying groundwater.

E/12 6. (Page 216 / 3-104) "When the effluent TDS concentration is increased in the root zone by evapo-transpiration during irrigation of the golf course and the NAWS site or the alfalfa fields at the City site, the concentration in the percolate will be higher than the background at both the NAWS and City sites. These impacts are determined to be Significant but Unavoidable." Water Board staff agrees, and would like the City to propose in the DEIR mitigation measures for this impact, that may include, but is not limited to, continued submission of graphs showing analytical data that demonstrate these trends and demonstration of how this impact is addressed in a salt and nutrient management plan.

E/13

7. (Page 216 / 3-104) "Natural disinfection resulting from the subsurface transport down through the soil will effectively remove coliform from both the incidental percolate and the alfalfa percolate at the City WWTP site, resulting in **Less Than Significant** impacts for coliform at this location." While this may be true, the current Board Order 6-93-86 I.C. requires disinfection and future recycled water reuse applications for landscape irrigation may continue to require irrigation as well.

E/14

8. (Page 207 / 3-95) Please clarify under the bullet for Beneficial Uses that the MUN use for some groundwater is removed, based on (Page 212 / 3-100) Section 3.9.4 Water Quality Standards especially beneath the Alternative 1, but not Alternative 2 site.
http://www.waterboards.ca.gov/lahontan/board_decisions/adopted_orders/2015/docs/r6v_2015_0005.pdf

E/15

9. (Page 310 / 6-12) "HYD-3 The City shall construct best practicable treatment and control (BPTC) technology to mitigate impacts from TDS and nitrogen on the shallow groundwater. BPTC is to be determined with the submittal of the anti-degradation analysis per SWRCB Resolution 68-16 in the Report of Waste Discharge submitted for a Waste Discharge Permit." Water Board staff will use the degradation analysis to assess the appropriate level of degradation to water quality in the selected project area when revising waste discharge requirements. Pollution is not allowed. For the DEIR to be complete the degradation analysis should be included.

E/16

10. (Page 17 / ES-1) Section ES.2 Reference is made to 12 acres of wastewater disposal ponds at the former wastewater plant site. Per Order 6-00-56, finding 7, these ponds are not authorized for current disposal, but are authorized per Order 6-93-86. Both locations, the 355 acre easement leased from the Navy and the 12 acres at the former City site, are considered for the new plant. The groundwater degradation associated with continued effluent disposal at both locations should be evaluated under mitigation measure HYD-3.

REQUEST FOR REVISED REPORT OF WASTE DISCHARGE

E/17

The California Water Code (CWC) requires the Water Board to regulate discharges of waste to land or waters of the State to protect the designated beneficial uses. Any person discharging waste or proposing to discharge waste that could affect the quality of waters of the State must file a report of waste discharge (ROWD) with the Water Board (CWC, section 13260). The ROWD must fully describe the proposed discharge and be filed with the Water Board at least 140 days before the discharge occurs (CWC, section 13264). Failure to file a complete ROWD before discharging, or discharging without regulatory authorization, may result in substantial civil or criminal penalties (CWC, section 13261).

Water Board staff has determined that the proposed Project is an expansion of the activities currently regulated by the Water Board under the Board Order and requests that the City of Ridgecrest submit a revised Report of Waste Discharge (ROWD) providing information necessary to revise the WDRs for the new Ridgecrest Wastewater Treatment Plant. The revised ROWD must contain complete information on all proposed and existing activities that may affect water quality. Be sure to include information required for compliance with any permit which you intend to seek coverage under. Specifically, the following information must be submitted with the revised ROWD for the new Ridgecrest Wastewater Treatment Plant.

E/17

1. Complete Form 200. The person legally responsible for the Facility, such as the General Manager, must sign the Form 200 and not the engineer, architect, consultant, or other delegated person. An electronic copy of Form 200 can be accessed online at http://www.waterboards.ca.gov/lahontan/publications_forms/forms/index.shtml.

2. Government Code section 84308(c) requires all applicants for WDRs to include a statement disclosing any contributions made by the applicant to any Water Board member, if the contribution(s) amounted to $250 or more. For your information, the current Water Board members are: Amy Horne, Keith Dyas, Eric Sandel, Peter Pumphrey, Don Jardine, and Kimberly Cox.

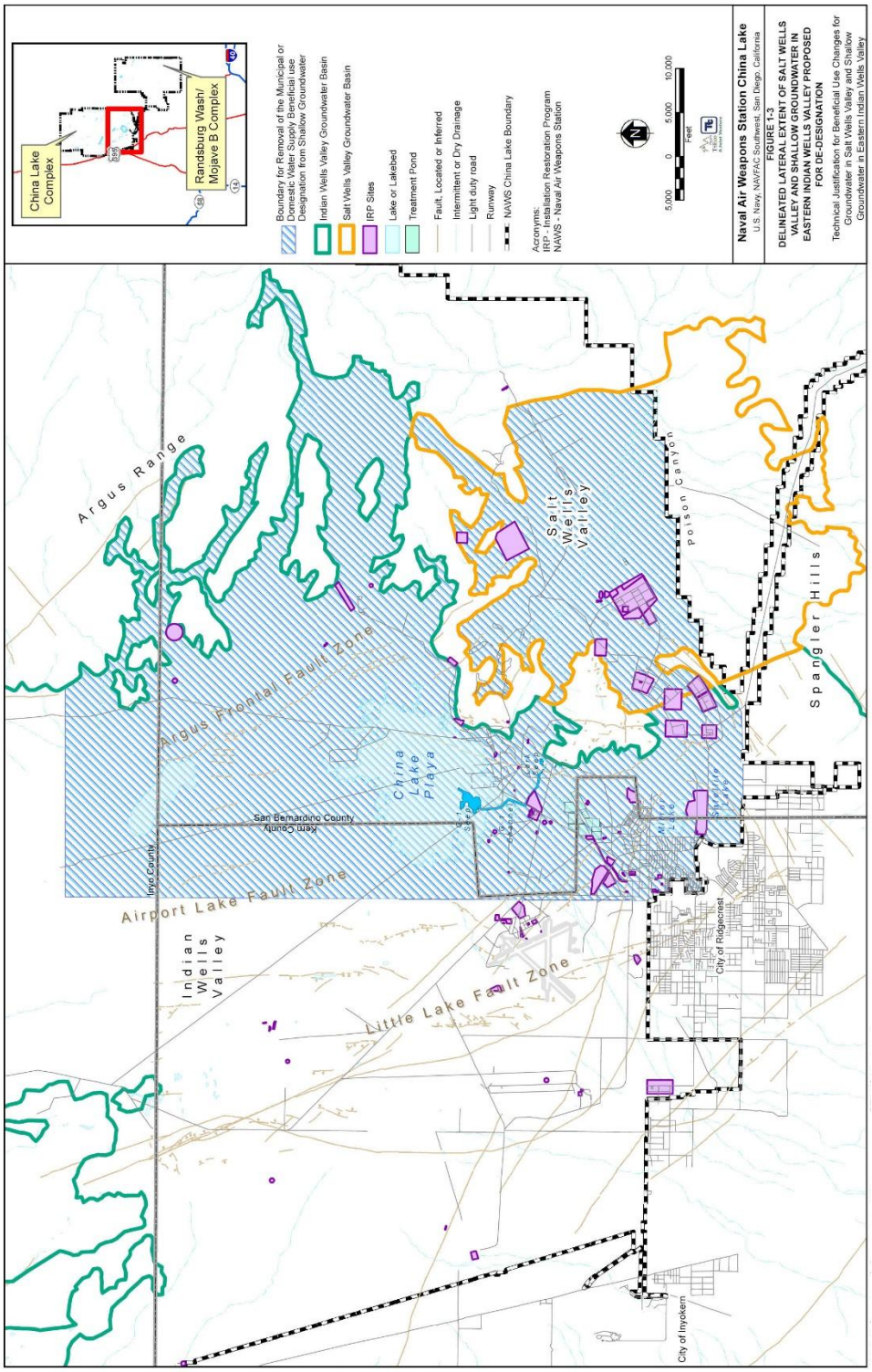
If you have any questions, please contact me at (760) 241-3408 Cephas.Hurr@waterboards.ca.gov or Jehiel Cass at (760) 241-2434 Jehiel.Cass@waterboards.ca.gov if you have any questions regarding this comment letter.

Cephas Hurr
Water Resources Control Engineer

Enclosure: Figure 1-3 Delineated Lateral Extent of Salt Wells Valley and Shallow Groundwater in Eastern Indian Wells Valley Proposed for De-Designation

cc (w/enclosure): Terry Schroepfer, tschroepfer@ppeng.com
Robert Tucker, robert.tucker@waterboards.ca.gov
Jehiel Cass, jehiel.cass@waterboards.ca.gov

CHurr\Ridgecrest DEIR JWC CHH 05172016


China Lake Complex
Randsburg Wash/ Mojave B Complex
Boundary for Removal of the Municipal or Domestic Water Supply Beneficial use Designation from Shallow Groundwater
Indian Wells Valley Groundwater Basin
Salt Wells Valley Groundwater Basin
IRP Sites
Lake or Lakebed
Treatment Pond
Fault, Located or Inferred
Intermittent or Dry Drainage
Light duty road
Runway
NAWS China Lake Boundary
Acronyms:
IRP - Installation Restoration Program
NAWS - Naval Air Weapons Station
5,000 0 5,000 10,000
Feet
Naval Air Weapons Station China Lake
U.S. Navy, NAVFAC Southwest, San Diego, California
FIGURE 1-3
DELINEATED LATERAL EXTENT OF SALT WELLS VALLEY AND SHALLOW GROUNDWATER IN EASTERN INDIAN WELLS VALLEY PROPOSED FOR DE-DESIGNATION
Technical Justification for Beneficial Use Changes for Groundwater in Salt Wells Valley and Shallow Groundwater in Eastern Indian Wells Valley
Argus Range
Salt Wells Valley
Poison Canyon
Spangler Hills
Argus Frontal Fault Zone
China Lake Playa
San Bernardino County
Kern County
Inyo County
Airport Lake Fault Zone
Indian Wells Valley
Little Lake Fault Zone
City of Ridgecrest
City of Inyokern

Response E/1

Comment noted.

Response E/2

Comment noted.

Response E/3

Comment noted.

Response E/4

Comment noted.

Response E/5

Comment noted.

Response E/6

Comment noted.

Response E/7

Comment noted. As described by Impact IX-c of the DEIR the Significance Before Mitigation is Less Than Significant. Mitigation Measure HYD-4 would be implemented and therefore the Significance After Mitigation remains Less Than Significant.

The Commenter requests addition of mitigation measures requiring a Storm Water Pollution Prevention Plan during construction, and adherence to construction-related storm water Best Management Practices. Both of these are regulatory requirements whether or not they are included in the DEIR, but we have added two mitigation measures accordingly:

HYD-4 Prepare a Storm Water Pollution Prevention Plan (SWPPP) for construction of the chosen alternative, in accordance with the specifications in the current Construction General Permit.

HYD-5 Identify and conform with construction and post-construction Best Management Practices for storm water management, and implement those BMPs to minimize erosion, promote groundwater recharge, and protect ephemeral streams from pollution.

Response E/8

A preliminary evaluation comparing chlorine and UV disinfection was completed with the Facility Planning study. Because the effluent is not and is not proposed to be filtered, chlorine disinfection was the most cost-effective form of disinfection and is the preferred method of disinfection. No filtration is under consideration for this project, though the City may consider higher treatment levels and additional recycling

options in the future. Accordingly, the DEIR does not consider UV disinfection, which is not practical for unfiltered effluent. No change to the DEIR is required.

Response E/9

Comment noted.

Response E/10

See response to Comment E/7. A SWPPP will be required.

Response E/11

Refer to Appendix E, Groundwater Impact Assessment, Section 7.2 for an analysis of the effects of recharge with respect to salt and nutrient loading to underlying groundwater. The request for a complete anti-degradation analysis in accordance with Water Board guidelines is premature at this time. Such an analysis, including a discussion of best practical treatment and control (BPTC) and economic benefit to the people of the State of California, will be submitted as a supplement to a new Report of Waste Discharge, which will be prepared and submitted to the Water Board after the City has selected a site for the new WWTP. That analysis will focus on the selected site, and will contain economic analysis information that is not germane to this environmental document. No change to the DEIR is required.

Response E/12

Comment noted. While the suggested reporting does not constitute mitigation, the City would be required to continue to submit groundwater monitoring reports, and reports showing trends in groundwater quality, in accordance with the Mitigation and Monitoring Plan issued by the Water Board as part of any new Order arising out of a subsequent Report of Waste Discharge. No additional mitigation measures are required.

A salt and nutrient management plan is required by Mitigation Measure HYD-1

Response E/13

Comment noted.

Response E/14

Comment noted. This section has been modified to read: "Groundwater beneficial uses designated for this portion of the Lahontan Basin are contained in the Basin Plan and include agricultural (AGR) and municipal (MUN) uses. However, in 2015 the MUN use was removed from the groundwater underlying the NAWS China Lake Site. The MUN designation was not removed from the City Site, so the criteria for evaluating discharges at the NAWS China Lake site and at the City Site are different.

Response E/15

Please refer to response to comment E/11.

Response E/16

Comment noted. Groundwater degradation is discussed for both sites in Appendix E, Groundwater Impacts Analysis, Section 7.

Response E/17

Comment noted. The City will submit a revised Report of Waste Discharge (RWD) after certification of the Final EIR and selection of a site for the new WWTP. See also, response to comment E/7.

2.7 Letter F: Stan Rajtora

Letter F

May 28, 2016
1239 E. Belle Vista Avenue
Ridgecrest, CA 93555

Mr. John Bracken
City of Ridgecrest
100 West California Avenue
Ridgecrest, CA 93555

Subject: Comments on the New WWTP Draft EIR

Dear Mr. Bracken:

I thank the City of Ridgecrest for this opportunity to comment on the WWTP EIR.

F/1 In general, I believe this EIR is premature due to current design deficiencies, jurisdictional issues, and financial concerns related to the new WWTP.

F/2 1) California has several new laws related to water conservation and water recycling. The current preliminary design does not comprehend the spirit of the new laws. Neither the WWTP facility plan nor the draft EIR is clear regarding reuse of secondary treated water, and the documents are even less informative regarding the reuse of tertiary treated water. Ridgecrest has an opportunity now to invest in a WWTP that is truly forward looking in the face on significant water shortages in California. The preliminary design does not do that. The design for water recycling and the environmental impacts need to be clear.

F/3 2) Ridgecrest continues to spend money on a preliminary design and environmental documents for a design where one possible site is on Navy property where the City of Ridgecrest has no permanent easement. The preliminary design is budgeted to cost 2.4M dollars. It is my understanding the Navy is planning on performing an Environmental Assessment rather than an Environmental Impact Study for the creation of the easement. The cost of the AE is insignificant compared to what the city is spending on the preliminary design and environmental documents. This is occurring before we know the Navy is serious about partnering with the city. The Navy needs to make a commitment before the city spends additional money on a joint project.

F/4 3) The Ridgecrest ratepayers are paying a totally disproportionate amount of the revenue for the current WWTP compared to the Navy. Over the last eleven years the Navy has generated roughly 31% of the processed effluent and the Ridgecrest ratepayers have generated roughly 69% of the processed effluent. Yet the Navy over the same time period has contributed less than 9% of the revenue and the Ridgecrest ratepayers have contributed over 91% of the wastewater fund revenue. This inequity in Navy pavements needs to be studied and the cause for it corrected prior to entering any new financial agreements with the Navy.

Following my review of the WWTPFP I sent the City of Ridgecrest multiple comments on the WWTPFP. Many of the questions and comments submitted on November 4, 2015 have not been addressed by the city. Ignoring public input is not beneficial for the public or the city.

Detailed comments to the DEIR are presented in the attachment.

Sincerely,

Stan Rajtora, PhD

Stan Rajtora, May 28,2016
General Comments:

F/5 1. The draft EIR states the DEIR is for a Ridgecrest WWTP, but none of the alternatives actually provides a design that is truly a city WWTP. All the alternatives indicate that the city will be partnering with the Navy. The WWTP facility plan did not even investigate the reinstallation of the effluent lift at the north end of town that would allow the effluent from the northern portion of the town to be combined with the effluent from the southern portion of the town. Yet, we do not have a permanent easement for the Navy land, and as important we do not have a commitment from the Navy to pay its share of the capital funding. An alternative project needs to be provided that does not assume the Navy is willing to partner with us. We cannot force the Navy to partner with us if they do not want to. Without a city only alternative, the existing DEIR will have to be totally redone if the Navy decides they cannot or will not partner for whatever reason.

F/6 2. Neither Alternative 1 nor Alternative 2 include the Phase 2 upgrade or tertiary processing. That is not a problem as long as the WWTP site selection is the city site. If the site selection is the Navy property we need to have the Navy easement comprehend both the full tertiary treatment facility and the increased capacity secondary facility. Not including both the tertiary facility and the increased capacity secondary facility in the Navy easement and the DEIR puts us at risk. Performing preliminary design now and completing the environmental document now for the eventual capability significantly reduces the future risk to expansion. This DEIR should include an alternative for the Navy site that includes both tertiary treatment and the 5.4 MGD treatment capacity. The current documentation shows the Phase 2 5.4 MGD capacity to be needed around 2030. That will be only ten or eleven years after the new WWTP goes into operation. The DEIR comment that phase 2 is speculative (see page 2-10) is not correct. The effort to do a preliminary design is very small, but at the same time is a major risk reducer. According to the WWTPFP the disposal ponds are not easily expandable, which creates a significant problem for the Navy site.

F/7 3. Neither Alternative 1 nor Alternative 2 includes a well-defined plan for recycling either secondary treated water or tertiary treated water. All alternatives need to be fully described in Chapter 2: Project alternatives. Two additional alternatives need to be added to include a well-defined recycled water plan for the already identified Alternative 1 and Alternative 2. The IWV has been deemed to be in "critical" overdraft. Ignoring the reuse of recycled water is not consistent with California's new groundwater sustainability goals.

F/8 3a. The Lahontan input to the NOP states that California is placing more emphasis on beneficial use of recycled water. The existing Alternative 1 and Alternative 2 alternatives ignore the Lahontan input. The Ridgecrest General Plan has a policy (see OSC-6.4, page 7-14 of GP) that states, "The city shall investigate methods of expanded reuse or tertiary treatment of wastewater …" That Ridgecrest policy is also being ignored. It actually makes sense to have a long-range plan before spending $4M on Band-Aids that may or may not be compatible with the lone-range plan. According to the WWTPFP the $4M expense for new disposal ponds only provides a 3.6 MGD capacity. Additional expense would be needed to get to the 5.4 MGD capacity.

F/9 3b. Both the 2015 WWTPFP and the DEIR put a lot of emphasis on building new wastewater disposal ponds in addition to using all existing wastewater disposal ponds. Paragraphs 2.2.2.3 and 2.2.3 of the DEIR give lip service to a tertiary treatment capability, but neither fully describes a tertiary treatment plant with distribution system rather than a wish list. The new wastewater disposal ponds are very expensive. We need to recycle and reuse our wastewater, not simply waste it. According to the WWTPFP the disposal ponds are not easily expandable. I asked in my WWTPFP comments dated November 4, 2015 what impact the tertiary facility would have on the need for additional costly disposal ponds. I have yet to receive a reply to my simple question.

F/10 3c. Figure 2-6 of the DEIR shows an effluent force main (operating backward) transferring effluent from the Ridgecrest WWTP to the NAWSCL wastewater disposal ponds. If the WWTP design fully incorporated tertiary treatment or high quality secondary treatment there should be no need to use the 20-inch line for transferring effluent back to the Navy disposal ponds. The 20-inch force main could be used to replace the new 16-inch proposed force main intended to transfer effluent from the Navy site to the city site. That would save the project the cost of the new force main, $5.5M dollars. It may also save us $4M in wastewater disposal pond costs.

F/11 3d. Figure 2-6 of the DEIR also shows effluent going from the city ponds to the alfalfa crop. We spend tens of thousands of dollars per year to operate thirty-tree acres of alfalfa irrigation. This is exactly what we do not need. The recycled water needs to be treated and sold as a commodity to offset the increased cost of the new WWTP. We need to be making money from the recycled water rather than loosing money. The recycled water that is shipped to the Navy is also a commodity and needs to be sold. The easement or contractual agreement between the city and the Navy needs to guarantee the Navy pays for recycled water it uses.

F/12 3e. The city has not to this date worked closely with the Indian Well Valley Water District. The distinction between wastewater and drinking water to this date has been quite clear. Now the distinction is becoming less and less clear. Lack of involvement by the IWVWD has led to design solutions that do not recognize either the benefit of new sewer treatment technologies or the changing of public opinion, i.e., both indirect and direct potable reuse. An outdated perspective regarding wastewater is constraining the city's thinking. We desperately need to adapt our current thinking onto a path that will provide long-term environmental benefit and sustainability.

F/13 4. The DEIR should include an alternative site north of HW178 and south of Pilot Plant Road on land whose ownership could be transferred from the Navy to the city. The city received a letter from its contractor, Provost & Pritchard, stating that approach would create years of delay. That may be the case if the Navy used an Environmental Impact Statement as the environmental document. The Navy will be using an EA for the current WWTP upgrade, which should only take a few months. If the Navy used a similar strategy transferring the land north of HW 178 to the city, it could be done quickly. A city EIR takes much less time than a Navy EIS. This new site would have multiple major benefits. The site and access to the site would be controlled by the city. The site would give adequate room for any expansion both short term and long term. The site would be further away from residential areas than the current alternatives. The land north of HW 178 may not be subject to MUN beneficial use requirements. The site would also provide better security than Alternative 2 and be higher above the flood plain than Alternative 1.

Specific Comments:

F/14 5. Impact VIII-e and Impact VIII-f indicate that no safety risk is imposed on the project area or the surrounding area by an airport land use plan. This is in complete contradiction of the current Ridgecrest 2030 General Plan EIR. The GP EIR states that aircraft operations of NAWSCL do impose significant safety hazards in the planning area near NAWSCL. This impact is exacerbated by both closeness to NAWSCL and location relative to the flight corridors. The GP EIR states the safety impact is **significant and unavoidable** (see Impact 3.10-1). This DEIR should show a figure of the MIA overlay on top of the proposed WWTP area. Both Alternative 1 and Alternative 2 WWTP sites lie directly below the Navy flight corridor.

F/15 5a. The general plan and EIR are clear the mitigation imposed by the city does not address aircraft safety risk, but rather reduces 'the potential severity of an aircraft accident'. Destruction of a critical component of the WWTP due to an aircraft accident would create a significant environmental impact for the City of Ridgecrest and also severely impact the mission of the Navy. The Ridgecrest Planning commission recently voted unanimously that the military sustainability

F/15 goals imposed by the Ridgecrest General Plan are the highest priority of the planning commission. Alternative sites not located under a Navy flight corridor need to be investigated. A discussion with the Navy regarding a change to the flight corridor would be appropriate.

F/16 6. Impact IX-a and Impact IX-f identify a **significant but unavoidable** impact. This is due to the percolation of poor quality water into higher quality water. No discussion is presented regarding the potential of tertiary treatment prior to percolation or tertiary treatment as a step in marketing the recycled water that would avoid percolation entirely. The DEIR does not discuss the levels of secondary treatment defined in the WWTPFP or the sale of the processed water as a commodity. Both avenues of mitigation need to be explored. California has a large number of indirect potable reuse projects and is studying the potential for direct potable reuse. The Groundwater Sustainability Agency that is being formed may put a surcharge on water pumped from the aquifer. An IWVWD surcharge as little as fifty cents per unit of water (100 cubic feet) could make tertiary treated water very competitive.

F/17 6a. It appears the city is proposing a project that creates a potential environmental impact when it can probably be mitigated. In addition, the elimination of the wastewater disposal ponds could potentially save the project up to $4M. The tertiary treatment would also potentially eliminate the need for the new proposed 16-inch force main at a potential savings of $5.5M. Conversely, the mitigation measures proposed for Impact IX-a amount to an ongoing undetermined expense.

F/18 7. Impact IX-e and impact IX-g indicate there is no risk due to flooding. That is an oversimplification, and FEMA data is not always reliable in our area. Alternative 1 is located near the very lowest point in the IWV. Alternative 1 is advantageous primarily due to gravity flow of the sewage toward the WWTP. Floodwaters will also flow in the direction of the Alternative 1 WWTP. The flooding of the WWTP could contaminate the area around the WWTP. The flooding of 1984 as well as other flooding incidents should be reviewed to ensure that appropriate design consideration has been given to avoid such contamination.

F/19 8. Impact XII-e assumes the noise environment has no impact. Unfortunately, the environmental baseline or setting utilized in the DEIR is well out of date. The DEIR addresses the NAWSCL 2004 EIS, while the current environmental baseline is the NAWSCL 2015 EIS. The DEIR calls out the 2007 AICUZ while the 2015 EIS references the 2011 AICUZ. The 2011 AICUZ was developed to anticipate the increased noise levels of the F-35 aircraft expected in the near future and has noise levels several dB higher than the 2007 AICUZ. Finally, the noise contours shown in

F/20 on page 3-150 of the DEIR are not the noise contours of either the 2007 AICUZ footprint or the 2011 AICUZ footprint. I believe it is from the 1977 AICUZ study. That makes the DEIR environmental setting thirty-four years out of date. The noise impacts need to be revisited using the future environment of the 2011 AICUZ.

Response F/1

Comment noted.

Response F/2

The Commenter mentions new laws related to water conservation and water reuse, but does not state the specific laws referenced. Currently adopted California laws related to water conservation do not apply to wastewater treatment facilities. Furthermore, California does not currently have adopted laws that mandate water recycling. Chapter 2.2.2.3 of the DEIR discusses the tertiary treatment process to the extent that the project's processes have been designed; it is not the City's intention that this DEIR be relied upon for future installation of a tertiary-level recycled water system. The DEIR identifies the proposed reuse of secondary treated water generated by the wastewater treatment facility to be for use within landscape irrigation areas of the City, at the alfalfa fields, and at the existing golf course.

Response F/3

CEQA Guidelines Section 15222 states "If a Lead Agency finds that an EIS or Finding of No Significant Impact for a project would not be prepared by the federal agency by the time when the Lead Agency will need to consider an EIR or Negative Declaration, the Lead Agency should try to prepare a combined EIR-EIS or Negative Declaration-Finding of No Significant Impact. To avoid the need for the federal agency to prepare a separate document for the same project, the Lead Agency must involve the federal agency in the preparation of the joint document." Federal agencies were consulted early in the Project's environmental analysis; however, it was determined that federal agency action to perform environmental analysis (EA or EIS) would not be completed by the time the City of Ridgecrest needed to consider the EIR. While preparation of an Environmental Impact Statement or Finding of No Significant Impact for a Project subject to federal agency review is recommended by both CEQA and NEPA (USC § 4332(2)(D)(ii)), neither CEQA nor NEPA precludes the adoption of an EIR prior to preparation of NEPA documents.

Furthermore, the EIR is prepared to analyze the impacts of two Alternatives. Alternative No. 1 would involve a site that would necessitate the preparation of NEPA documents and involvement of a federal agency or agencies.

Response F/4

Comment noted. This issue is not within the purview of this environmental analysis.

Response F/5

Commentary related to alternative facilities that could have been addressed in the WWTP Facility Plan is not within the purview of this environmental analysis. Pursuant to Section 15126.6 of the CEQA Guidelines, an EIR must only discuss a range of reasonable alternatives to the project and the "No project" alternative. The EIR discusses the environmental impacts of "Alternative No. 1" and "Alternative No. 2" as identified in the WWTP Facility Plan and a "No Project Alternative."

Response F/6

Comment noted. Please refer to the response to Comment F/5.

Response F/7

Please refer to response to Comment F/5.

Response F/8

Please refer to response to Comment F/2 regarding reuse of water.

Response F/9

The Commenter asks questions related to the cost and need for additional disposal ponds in the future. The need for additional disposal ponds would be predicated upon population growth in the area. Section 3.13.3.1 of the DEIR states,

> …Although the headworks component of the Project Alternatives would be sized to accommodate more expansive future wastewater system, the actual capacity of the Project will be limited by the other components of the system until such time as the future expansion is considered. **However, the purpose of the proposed Project is to replace the existing, failing WWTP** (emphasis added)."

Although the purpose of the proposed Project is to replace the existing, failing wastewater treatment plant, Section 2.1 of the DEIR states, "Current flows through the WWTP average approximately 2.6 mgd…(refer to page 2-10)." The DEIR further states:

> While it is anticipated that the overall wastewater treatment plant (WWTP) will ultimately consist of two distinct phases, for the purposes of this EIR, only Phase 1, the development of a new facility capable of treating and disposing of 3.6 million gallons per day (mgd) **average daily flow and 4.0 mgd maximum month flow will be analyzed**, as it is the Project that the City proposes to design and construct in the immediate future. Phase I is expected to meet the City's wastewater needs through 2030[1] (emphasis added).

Therefore, the DEIR analyzes the impacts of the proposed Project a through a reasonably foreseeable 15-year horizon. Furthermore, Chapter 2.2.2.3 of the DEIR discusses the tertiary treatment process to the extent that the project's processes have been designed; it is not the City's intention that this DEIR be relied upon for future installation of a tertiary-level recycled water system.

Response F/10

Comment noted. Please refer to Page 2-24 concerning the need for a new force main.

Response F/11

Comment noted. Please refer to responses to Comment F/4.

Response F/12

Comment noted. Please refer to response to Comment F/4.

[1] City of Ridgecrest, 2015. Wastewater Treatment Plant Facility Plan.

Response F/13

Comment noted. Please refer to responses to Comment F/5.

Response F/14

The Comprehensive Land Use Management Plan (CLUMP) for Naval Air Weapons Station China Lake, California did not identify the City Site as lying within any aircraft safety zones. The NAWS China Lake Site, while located within the facility boundaries, is not located within a designated safety zone; therefore, there is minimal risk to any workers that may be involved with construction or operation. While the City of Ridgecrest General Plan Update EIR does conclude that hazards posed by aircraft safety are significant and unavoidable, the justification is that safety hazards are present for residents in the Planning Area. As the Proposed Project Alternatives do not involve the placement of residents, no safety risk is present.

Response F/15

Please refer to response to Comment F/14.

In addition, the Commenter states, "Destruction of a critical component of the WWTP due to an aircraft accident would create a significant environmental impact for the City of Ridgecrest and also severely impact the mission of the Navy." The Commenter's suggestion is speculative in nature, relates to an impact the environment would speculatively have on the Project, and is not a reasonably foreseeable impact of the Project. Therefore, impacts related to aircraft accidents were not addressed in the DEIR.

Response F/16

Although the DEIR does not present a discussion of "the potential of (for) tertiary treatment prior to percolation or tertiary treatment as a step in the marketing the recycled water that would avoid percolation entirely," as provided in responses to Comment F/2, the DEIR describes the proposed use of secondary-treated water. Therefore, pursuant to CEQA a discussion of other levels of secondary treatment or the sale of the processed water as a commodity are beyond the DEIR's reasonable range of alternatives.

Response F/17

Comment noted. Please refer to responses to Comments F/2, F/4, and F/5.

Response F/18

Pursuant to the CEQA Checklist (Appendix G), the standards of review (as summarized), are found in items IX-d, regarding a Project's contribution to the substantial alteration of drainage patterns or increases in the rate or amount of surface runoff resulting in flooding; and Item IX-I, related to exposure of people or structures to a significant risk involving flooding. . With respect to flooding caused by the Project's contribution, the DEIR in Section 3.9.6.4 states that, "The City of Ridgecrest Engineering Division reviews each development project for drainage conveyance and storage of stormwater, and necessary on-site improvements would be constructed to the standards and specifications outlined by the City." Therefore, contributions to flooding as a result of the Project would be mitigated in accordance with City standards. With respect to exposure of people or structures to a significant risk involving flooding, the DEIR in 3.9.6.8 states that, the Project would have "No Impact" related to exposure of people to risks of flooding because the Proposed Project's Alternatives are not located within a 100-year flood hazard zone and there are no dammed water bodies with the potential to flood the two Alternative Sites.

With respect to the Commenter's concerns regarding contamination, the Comment is noted. The design of the WWTP shall take contamination avoidance into consideration. Please also refer to Responses to Comments provided to the Lahontan Regional Water Quality Control Board (Letter E) relative to contamination and flooding.

Response F/19

Although the DEIR references the 2007 AICUZ noise zones rather than the 2011 AICUZ noise zones, it does not represent a significant difference in noise levels for the Proposed Project Alternative sites. The City Site is not within a noise zone in either the 2007 or 2011 document, and the NAWS Site lies within the same noise zones. Therefore, analysis based on the 2007 AICUZ is also appropriate in consideration of the 2011 AICUZ noise zones.

Please note Errata, Section 1.2, which corrects this reference to the 2007 AICUZ noise zones rather than the 2011 AICUZ noise zones.

Response F/20

Please note in Errata, Figure 3-8 has been revised to illustrate the 2011 noise contours.

2.8 Letter G: Eastern Kern County Resource Conservation District

Letter G

Eastern Kern County
Resource Conservation District
300 S. Richmond Road, Ridgecrest, CA 93555
760.384.5477
FAX 760.384.5499

ekcrcd@iwvisp.com

May 31, 2016

City of Ridgecrest
Attn: John Bracken, Wastewater Supervisor
100 W. California Ave.
Ridgecrest, CA 93555

Re: Comments on New City Wastewater Treatment Plant DEIR April, 2016

Dear Mr. Bracken and City Council Members:

Eastern Kern County Resource Conservation District (EKCRCD) has been in existence since 1953 and has been commenting on EIR's, EIS's and other Environmental Documents regarding air, water and soil issues. The Board represents a diversified group with knowledge of resource issues as well as multiple use and sustainable-yield issues.

G/1

GENERAL COMMENT

Since both Alternative 1 and Alternative 2 use both City and Navy sites and properties, we believe that this document should be a joint EIR/EIS rather than simply an EIR prepared by the City. A Joint EIR/EIS would provide better clarity for project descriptions and better public understanding and more transparency regarding funds being used for expansion of the facilities on the two sites. The expansion and construction of improvements with updated facilities and technology requires a long-term agreement between the City and the Navy and a permanent easement status for the project.

PROCESS COMMENT

G/2

Notification to the public was lacking in several areas. There were no sign-up sheets present and comments from the public went unanswered. The EKCRCD and others asked to be notified when the Draft came out. We were told to go to the City's Website and then we would find the information we needed. Instead, when we went to the City's website, we were instructed to go to a private website by the contractor that several of us could not log onto. After three days of correspondence, one of our board members was finally able to obtain in-person a CD from the City, giving us less than two weeks to review the document. We feel that an extension of the comment period for another 15 days should be made.

SPECIFIC COMMENTS

G/3

1) The EKCRCD has concerns regarding the impact that the conversion of land will have upon the cluster of residences near the City site (Impact I-a and I-c on page ES-5). Nowhere in the document are Health and Safety impacts on surrounding residents described and addressed regarding mosquito abatement and vector control issues that may result with the expansion to 56 acres of wastewater treatment ponds/disposal ponds at the City site.

G/4 2) We believe that another impact of great concern for residents near the City site is the increase in concentrations of fugitive dust, not only during construction but also afterward, from areas that have been cleared for the project, (Impact III-b and Impact III-c on page ES - 6). Fugitive dust causes not only a nuisance for nearby land users and residents, but also a health concern for the potential increase in cases of Valley Fever for sensitive receptors. Fugitive dust concerns also arise (Impact III-d on page ES-6) due to the increase in vehicle trips both during construction and afterward. A related concern is surface soil erosion and loss of topsoil from soil disturbance both during construction and afterward (Impact VI-b on page ES-8).

G/5 3) The odor-generating potential of the Project at the City site (Impact III-e) greatly concerns EKCRCD due to the effects on sensitive receptors.

G/6 4) There are significant environmental impacts on species of plants and animals at both sites (Impact IV-a on page ES-7) where clearing occurs for expansion of facilities. If expansion of the facilities at the Navy site moves contamination plumes near the G-1 channel and Lark Seep areas resulting in impacts to the federally listed Tui Chub, then those impacts need to be addressed.

G/7 5) The EKCRCD encourages the City to avoid the use of the existing off-road vehicle park -- designated areas (Impact X-b on page ES-14) for effluent disposal ponds. If such areas are used for the wastewater project, then we strongly recommend that the City follow the process of amending the City of Ridgecrest General Plan and preparing an EIR as stated on page 2-22 of this DEIR document.

G/8 6) Other impacts that affect the cluster of residents near the City site include:
Impact I-d on page ES-5 regarding additional lighting for safety and security;
Impact III-a on page ES-6 regarding increase in criteria air pollutants;
Impact VII-a and VII-b on page ES-9 regarding short-term construction and long-term operational emissions of GHGs;
Impact VIII-a on page ES-10 regarding release of construction related fuels and other hazardous materials, control of storm water contamination, control of amount of run-off from the sites, proper disposal or recycling of hazardous materials; and
exposure of a cluster of residences to noise levels during construction.

G/9 7) The EKCRCD states its concern, in relation to the Navy site, regarding impacts on Richmond Elementary School (Impact VIII-b on page ES-10).

G/10 8) Another concern in relation to the expansion of the facilities at the Navy Site, is the effect that the wastewater expansion project has on an area that lies within a designated clean-up site (Impact VIII-d on page ES-10).

G/11 9) The EKCRCD encourages the implementation of measures described in Impact IX-c on page ES-12 in order to address many of our concerns listed above: NPDES permit, erosion and sediment control plans, best available technologies (BAT), best conventional pollutant

G/11 control technologies (BCT), detention and/or retention basins, establishment of grass or other vegetative cover or other approved erosion control measures. These measures are also listed on page 1-8 and should be diligently and thoroughly implemented for the project facilities expansion work at both City and Navy sites.

G/12 The most important concerns that EKCRCD finds herein are those related to potential degradation of high-quality groundwater at the City site (Impact IX-a on page ES-11) and significant and unavoidable impacts on groundwater quality for nitrogen at the City site and for effluent TDS concentration at NAWS golf course (Impact IX-a and IX-f). These impacts are also addressed on page 1-9 and in Chapter 5. These impacts on water quality would not occur if tertiary treated wastewater were used. Tertiary treated wastewater would allow for longer-term benefits for use, beyond the 2030 date stated in the DEIR for this expansion effort, specifically, increasing water conservation and supporting groundwater-sustainability efforts for the City and the Valley. We strongly recommend that a joint EIR/EIS address

G/13 the Phase 2 elements briefly referenced but not discussed or addressed in this current document, and permanent easement dedications and wastewater improvements that will go beyond 2030 and be sufficient to meet future growth needs for both the City and the Navy.

Thank you for the opportunity to comment on the DEIR for the New City Wastewater Treatment Plant dated April, 2016. We appreciate your consideration of our concerns.

Very truly yours,

Donna Thomas

Donna Thomas, Vice President, Eastern Kern County Resource Conservation District

Cc: Kern County Planning and Community Development
China Lake Naval Weapons Center, Environmental Planning Division
Ridgecrest City Council
CEQA
Lahontan Regional Water Quality Control Board
San Bernardino Planning Department

Response G/1

Pursuant to CEQA Section 15221, the NEPA process will be conducted after the EIR is completed and a determination is reached. As previously stated in response to Comment F/2, the CEQA Guidelines, Section 15222, state, "If a Lead Agency finds that an EIS or Finding of No Significant Impact for a project would not be prepared by the federal agency by the time when the Lead Agency will need to consider an EIR or Negative Declaration, the Lead Agency should try to prepare a combined EIR-EIS or Negative Declaration-Finding of No Significant Impact. To avoid the need for the federal agency to prepare a separate document for the same project, the Lead Agency must involve the federal agency in the preparation of the joint document." Federal agencies were consulted early in the Project's environmental analysis, however it was determined that federal agency action to perform environmental analysis (EA or EIS) would not be completed by the time the City of Ridgecrest needed to consider the EIR. While preparation of an Environmental Impact Statement or Finding of No Significant Impact for a project subject to federal agency review is recommended by both CEQA and NEPA (USC § 4332(2)(D)(ii)), neither CEQA nor NEPA precludes the adoption of an EIR prior to preparation of NEPA documents.

Response G/2

We apologize for any accessibility delays that occurred due to the City's website and that of its consultant. Regarding notification to the public, sign-up sheets, and unanswered comments, we also apologize for any perceived short-comings, however, pursuant to the CEQA Guidelines, on April 15, 2016, notification of the Availability to review the Draft EIR (NOA) was provided with the State Clearinghouse, in a newspaper of general circulation (*The Daily Independent*), and posted on the City's website. Said notice stated that hard copies of the DEIR were also available at the Kern County and San Bernardino County Clerk's offices, as well as being posted on the City's website. No written requests to be notified, pursuant to CEQA Section 15087, were received by the Lead Agency.

Response G/3

As a result of comments received related to mosquito abatement and vector control, we have added new Mitigation Measure HAZ-4 to provide mitigation related to mosquito abatement and vector control. Please refer to Errata Section 1.2, and the revised Mitigation Monitoring and Reporting Program included in the Final EIR as Chapter 3.

Response G/4

The Air Quality & GHG Impact Assessment prepared by AMBIENT Air Quality & Noise Consulting for the Ridgecrest WWTP Project, contained in Appendix B of the DEIR analyzed the impacts related to fugitive dust on the environment (Refer to pages 23 and 24). For purposes of providing mitigation for these impacts, Mitigation Measure AQ-3 has been added to address issues of fugitive dust during construction and during operation of the facility and to address surface soil erosion and loss of topsoil.

Response G/5

To mitigate the Project's impacts related to odor, Mitigation Measure AQ-2 requires the preparation of an Odor Control Mitigation Plan. The Air Quality & GHG Impact Assessment prepared by AMBIENT Air Quality & Noise Consulting for the Ridgecrest WWTP Project, contained in Appendix B of the DEIR (Refer to pages 30 and 31), analyzed impacts related to the Project's odor generating potential and its impacts on sensitive receptors.

Response G/6

The Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation, prepared by Live Oak Associates, Inc., contained in Appendix C of the DEIR (Refer to page 18) addressed all reasonably foreseeable impacts of the Project on biological species (both animal and plant). The NAWS CLUMP DEIS (refer to page 39), states that NAWS continually works with the City of Ridgecrest to manage the Tui chub in respect to the operation of the current WWTP. These efforts would continue after the adoption of both Alternatives.

As related to the potentially harmful impact of contamination plumes on the listed Tui chub, It may be assumed that health risk screening-levels that would impact humans would also impact animals. The Biological Evaluation, prepared by Live Oak Associates, Inc. states:

> Based on the screening-level health risk assessments conducted, combined health risks associated with the operation of the proposed emergency generator and evaporative TAC emissions with treatment processes would result in a predicted cancer risk at the nearest receptor of 0.24 in one million for Build Alternative 1 and 0.84 in one million for Build Alternative 2. The hazard index for both acute and chronic non-cancer inhalation risk at the nearest receptors would be 0.02, or less, for Build Alternative 1 and 0.06, or less, for Build Alternative 2. Predicted cancer and non-cancer health risks would not exceed EKAPCD's significance thresholds.

Therefore, based on the Biological Evaluation and the Health Risk Assessment, there is no indication that the Project has the potential to result in negative impacts to the Tui chub.

Response G/7

Mitigation Measure LU-1 first requires the City to avoid the Park designated areas currently used as the "existing off-road vehicle park." Where avoidance is not feasible, Mitigation Measure LU-1 requires that the City replace the park land eliminated by use of the subject land.

For purposes of clarification, the "existing off-road vehicle park" is included in Section 3.10.3, Impact Assessment X-b in the DEIR and Mitigation Measure LU-1. Also for purposes of clarification, there is no statement or recommendation in the DEIR for preparation of an EIR in the event of a determination that a General Plan Amendment is necessary. Such determination would constitute new or changed circumstances and would be evaluated in accordance with the CEQA Guidelines.

Response G/8

Comment noted. Comment notes impacts discussed in the DEIR, but does not indicate any new impacts or impacts that were not addressed in the DEIR.

Response G/9

Comment does not specify the nature of the EKCRCD's concerns regarding impacts on Richmond Elementary school. The school is located one-quarter of a mile from proposed facility under Alternative 1, which is equal to the school's distance from the existing WWTP.

Response G/10

As stated in the DEIR, the NAWS Site (Alternatives 1 & 2) lies within a cleanup site designated by the California Department of Toxic Substances Control's EnviroStor database. NAWS currently implements programs to ensure health and safety in relation to the cleanup site, which would continue to mitigate concerns after project implementation. These existing conditions form the Project's baseline and do not add to or contribute to new impacts associated with implementation of the Project.

Response G/11

Comment noted. These comments are generally in support of Impact Assessments and Mitigation Measures provided in the DEIR.

Response G/12

Refer to Response to Comment F/2.

Response G/13

Refer to Response to Comment G/1.

2.9 Letter H: San Bernardino County, Department of Public Works

Letter H

825 East Third Street, San Bernardino, CA 92415-0835 | Phone: 909.387.8109 Fax: 909.387.7876
www.SBCounty.gov

SAN BERNARDINO COUNTY

Department of Public Works
Environmental & Construction • Flood Control
Operations • Solid Waste Management
Surveyor • Transportation

Gerry Newcombe
Director

May 31, 2016

City of Ridgecrest
John Bracken, Wastewater Supervisor
100 W. California Avenue
Ridgecrest, CA. 93555
jbracken@ridgecrest-ca.gov

File: 10(ENV)-4.01

RE: CEQA - NOTICE OF AVAILABILITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE NEW CITY WASTEWATER TREATMENT PLANT FOR THE CITY OF RIDGECREST

Dear Mr. Bracken:

Thank you for giving the San Bernardino County Department of Public Works the opportunity to comment on the above-referenced project. **We received this request on April 15, 2016** and pursuant to our review, the following comments are provided:

Environmental Management Division (Kim Romich, Ecological Resource Specialist, 909-387-7971):

H/1

1. Within Biological Section 3.4.7, Minimization Measure BIO-3 states that, "Prior to construction one or more of the following measures will be implemented as necessary: a) Take Avoidance Surveys. A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction."

   The Staff Report on Burrowing Owl Mitigation (Department of Fish and Game, 2012) states that take avoidance surveys are intended to detect the presence of burrowing owls on a project site at a fixed period in time. Take avoidance surveys may detect changes in owl presence, such as colonizing owls that have recently moved onto the site, migrating owls, resident burrowing owls changing burrow use, or young of the year that are still present and have not dispersed. However, these surveys do not to meet the need for detecting burrowing owl(s), nor evaluating impacts to owl(s) from development projects.

   The California Burrowing Owl Consortium developed the Survey Protocol and Mitigation Guidelines. The process begins with a four-step survey protocol to document the presence of burrowing owl habitat, and evaluate burrowing owl use of the project site and a surrounding buffer zone. Thus, to determine the presence of burrowing owl, four survey visits should be conducted: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. If surveys confirm occupied habitat, the avoidance and mitigation measures to minimize impacts to burrowing owls, their burrows and foraging habitat on the site should be followed with oversight from the California Department of Fish and Wildlife.

BOARD OF SUPERVISORS
Robert A. Lovingood, Vice Chairman, First District | Janice Rutherford, Second District | James Ramos, Chairman, Third District | Curt Hagman, Fourth District | Josie Gonzales, Fifth District
Gregory C. Devereaux, Chief Executive Officer

If you have any questions, please contact the individuals who provided the specific comment, as listed above.

Sincerely,

NIDHAM ARAM ALRAYES, MSCE, PE, QSD/P
Public Works Engineer III
Environmental Management

NAA:PE:sr

Response H/1

Commenter states that the burrowing owl Take Avoidance Surveys, as described in the Staff Report on Burrowing Owl Mitigation (Department of Fish and Wildlife (DFW), 2012), which are required mitigation in Biological Section 3.4.7, Mitigation Measure BIO-3 "do not meet the need for detecting burrowing owl(s), nor evaluating impacts to owl(s) from development projects." Commenter recommends that four surveys be conducted prior to construction; one between 15 February and 15 April and a minimum of three surveys, at least three weeks apart, between 15 April and 15 July, with at least one survey after 15 June in order to adequately determine the presence of burrowing owls on the project site.

Commenter's concern that the Take Avoidance Surveys "do not meet the need for detecting burrowing owl(s), nor evaluating impacts to owl(s) from development projects" is incorrect. As the comment letter states (reiterating the language of the 2012 Staff Report on Burrowing Owl Mitigation), "take avoidance surveys are intended to detect the presence of burrowing owls on a project site at a fixed period in time." It is clear that DFW finds these surveys, if conducted according to methods described in the 2102 Staff Report, to meet the need for detecting the presence of burrowing owls on and adjacent to a site prior to construction.

Commenter's concern that Take Avoidance Surveys "do not meet the need for evaluating impacts to owl(s) from development projects" is entirely correct. This type of survey is designed to determine if burrowing owls are present on a site prior to construction and provide a basis for avoidance and minimization measures that will ensure that a project does not injure or kill burrowing owls. However, the basis for evaluation of project impacts to burrowing owls was not deferred to the outcome of future Take Avoidance Surveys. Rather, it was the result of two days of field surveys across the project site in June of 2015 by a qualified biologist with many years of experience conducting burrowing owl habitat assessments, focused burrowing owl surveys, burrowing owl exclusion, and burrowing owl burrow excavation. During the field investigation of the Ridgecrest WWTP Project site, which consisted of a walking survey with good visual coverage of much of the site, no burrows large enough to meet the needs of a burrowing owl nor any sign of burrowing owl use of the site were observed. Since burrowing owls are incapable of excavating their own burrows, primarily relying on burrowing mammals such as California ground squirrels to provide suitably-sized burrows for cover and nesting, they cannot spontaneously occupy a site without the occurrence of suitably-sized burrows that would first need to be created through the occupation of burrowing mammals large enough to make such burrows. The site investigation indicated that burrowing owls were unlikely to be occupying the site at that time and, if occurring on the site in the future, would only occur in very small numbers due to the lack of suitably-sized burrows. However, given the unknown amount of time that may lapse between the investigation and project construction and two CNDDB occurrences of burrowing owl within the Ridgecrest area, Take Avoidance Surveys were required in Mitigation Measure BIO-3 to assure the project avoids the take of burrowing owls. In the unlikely event that burrowing owls should be found during Take Avoidance Surveys, buffers around nesting burrowing owls and passive relocation of non-nesting burrows are required.

Regarding the recommendation of additional burrowing owl surveys, due to the lack of suitable habitat (i.e. suitably-sized burrows) and the relative sparse habitation of burrowing owls in the region, additional surveys are not warranted for this project.

2.10 Letter I: National Public Lands News.com

Letter I

National Public Lands News.com
941 E. Ridgecrest Boulevard
Ridgecrest California 93555

May 31, 2016

City of Ridgecrest
Attn: John Bracken, Wastewater Supervisor
100 W. California Ave.
Ridgecrest, CA 93555

Re: Comments on New City Wastewater Treatment Plant DEIR April 2016

Dear Mr. Bracken and City Council Members,

I/1 National Public Lands News. Com (NPLNews.com) has been in existence since 1999 and some of our board members have been commenting on EIR's, EIS's, their processes, both federal (NEPA) and state (CEQA) on multiple issues such as; air, water and soil issues since 1976.

I/2 GENERAL COMMENT
Thank you for the opportunity to comment on the WWTP EIR. A new Waste Water Facility is desperately needed in this community; however it should not disregard certain rules and procedures that fall under CEQA, NEPA and transparency laws. Since both Alternative 1 and Alternative 2 use both City and Navy sites and properties, we believe that this document should be a joint EIR/EIS rather than simply an EIR prepared by the City. A Joint EIR/EIS would provide better clarity for project descriptions and better public understanding and more transparency regarding funds being used for expansion of the facilities on the two sites. The expansion and construction of improvements with updated facilities and technology requires a long term agreement between the City and the Navy (BLM?) and a permanent easement status for the project.

PROCESS COMMENT

I/3 We request an extension of fifteen additional days. Notification to the public was lacking in several areas. There were no sign up sheets present at the November 4, 2015 meeting that we attended. We did give our card to the Consultants, but were never notified when the draft came out although we had requested to be placed on their contact list. We asked why this was not an EIR/EIS since the lands had federal leases on them. Eventually, we went to the City's Website. It directed us to go to a private website by the contractor that several of us could not sign into. After three days of correspondence with the City, we finally were finally able to obtain a CD from the City in person, giving us less than two weeks to look at the document.

I/4 SPECIFIC COMMENTS
1) NPLNews.com has concerns over the jurisdictional process that is being used. This facility is being planned for fifty years. However, there is only a 25 year lease the Navy has with the BLM. A permanent Easement should be a priority, not after the fact and all monies both federal and state should be described in the EIR/EIS as described under transparency laws.

I/5 2) The 2 alternatives do not specifically state that there is a no action alternative. Both alternatives do not have a clear City Alternative without the Navy's assistance. We believe that there should be four alternatives.

I/6 3) There are significant environmental impacts on species of plants and animals at both sites (Impact IV-a on page ES-7) where clearing occurs for expansion of facilities. We also ask whether moving the water will adversely affect the waters going into the G-1 channel and Lark Seep areas resulting in impacts to federally listed Tui Chub that may need to be addressed.

I/7 4) The Ridgecrest City General Plan states that aircraft operations of NAWSCL do impose significant safety hazards in the planning area near NAWSCL, however under Impact VIII-e and f indicate that there is no safety risk by an airport land use plan. Which is correct?

I/8 5) Has there been significant description or analysis of fugitive dust right next to a Navy Flight Plan. Has the FAA ruled that there will not be a hazard?

I/9 6) Fugitive dust causes not only a nuisance for nearby land users and residents, but also a health concern for potential increase in cases of Valley Fever for sensitive receptors. Will there be specific time limits for people using Highway 178 and Business 395?

I/10 7) NPLNews.com encourages the City to avoid the use of the existing off-road vehicle Park designated areas (Impact X-b on page ES-14) for effluent disposal ponds. If such areas are used for the wastewater project, then we strongly recommend that the City follow the process of Amending the City of Ridgecrest General Plan.

I/11 8) Will the extra lighting to be used during construction pose hazards to our Navy Pilots using the Runway on the Base?

I/12 9) Both Alternatives 1 and 2 lie directly below the Navy Flight Corridor. Please point out in the DEIR where this is noted in regards to safety for the pilots and the residents. A MIA overly on top of this area is needed.

I/13 10) Another concern in relation to the expansion of the facilities at the Navy Site, is the effect that the wastewater expansion project has on an area that lies within a designated cleanup site (Impact VIII-d on page ES-10).

I/14 11) If a joint EIR/EIS is done correctly covering all the questions, it will take less time than back and forth with a City EIR that doesn't address federal criteria and a Military EA which may not address residential concerns. There are words in the NEPA process which uses TIERING as one of the criteria.

I/15 12) California has several new laws relating to groundwater, water conservation and water recycling. There seems to be no clarity regarding neither the reuse of secondary treated water nor the reuse of tertiary treated water.

I/16 13) We believe that the taxpayers of Ridgecrest will be paying more than the Navy. According to your documents, the Navy generates 31% and contributes less than 9% financially. Please address this situation.

I/17 14) Lahonton, City and public input was ignored regarding recycled water practices in regards to the ponds.

I/18 15) The DEIR indicates there is no risk due to flooding. FEMA data is not always reliable due to the severity of desert storms. The flooding of 1984 has not been analyzed for contamination in case this occurs again.

I/19 16) Other impacts that will affect the cluster of residents near the City site include:
a) Impact I-d on page ES-5 regarding additional lighting for safety and security
b) Impact III-a on page ES-6 regarding increase in criteria air pollutants
c) Impact VII-a and VII-b on page ES-9 regarding short-term construction and long-term operational emissions of GHGs
d) Impact VIII-a on page ES-10 regarding release of construction related fuels and other hazardous materials; control of storm water contamination; control of amount of run-off from the sites; proper disposal or recycling of hazardous materials.
e) Mosquito abatement and,
f) Exposure of cluster of residences to noise levels during construction.

Thank you for the opportunity to provide comments. However, if the time limit is extended, we would have been able to comment more on specifics.

In Cooperation,

Sophia Anne Merk (SAM)
samnplnews@yahoo.com

Cc: Kern County Planning Department
China Lake Naval Weapons Center
Ridgecrest City Council
Lahonton
California Natural Resources Agency

Response I/1

Comment noted

Response I/2

Regarding the preparation of a joint EIR/EIS, pursuant to CEQA Section 15221, the NEPA process will be conducted after the EIR is completed and a determination is reached. As previously stated in response to Comment F/2, the CEQA Guidelines, Section 15222, state, "If a Lead Agency finds that an EIS or Finding of No Significant Impact for a project would not be prepared by the federal agency by the time when the Lead Agency will need to consider an EIR or Negative Declaration, the Lead Agency should try to prepare a combined EIR-EIS or Negative Declaration-Finding of No Significant Impact. To avoid the need for the federal agency to prepare a separate document for the same project, the Lead Agency must involve the federal agency in the preparation of the joint document." Federal agencies were consulted early in the Project's environmental analysis, however it was determined that federal agency action to perform environmental analysis (EA or EIS) would not be completed by the time the City of Ridgecrest needed to consider the EIR. While preparation of an Environmental Impact Statement or Finding of No Significant Impact for a project subject to federal agency review is recommended by both CEQA and NEPA (USC § 4332(2)(D)(ii)), neither CEQA nor NEPA preclude the adoption of an EIR prior to preparation of NEPA documents.

NEPA applies to Federal actions that include both broad actions and specific projects (40 CFR § 1508.18(b)), however, with regard to disclosure of funding for this Project, no Federal funds are anticipated to be utilized in conjunction with the construction of the wastewater treatment plant. NEPA action, related to this Project would be limited to the Navy and Bureau of Land Management's consideration of extending a lease. Therefore, similar to CEQA the jurisdictional processes involved in the environmental analysis of the Project under NEPA, would also not include disclosure of funding.

Response I/3

Regarding the lack of sign-in sheets and difficulty accessing the City or Consultant's websites, we apologize for any perceived short-comings, however the Commenter knew or reasonably knew of the availability of the DEIR within adequate time to provide input as evidenced by Comment letter dated May 31, 2016 (Letter I).

Pursuant to the CEQA Guidelines, on April 15, 2016, notification of the availability to review the Draft EIR (NOA) was provided with the State Clearinghouse, in a newspaper of general circulation (*The Daily Independent*), and posted on the City's website. Said notice stated that hard copies of the DEIR were also available at the City offices, Kern County and San Bernardino County Clerk's offices, as well as, being posted on the City's website.

Response I/4

Refer to Response to Comment I/2.

Response I/5

Commentary related to alternative facilities that could have been addressed in the WWTP Facility Plan is not within the purview of this environmental analysis. Pursuant to Section 15126.6 of the CEQA Guidelines, an EIR must only discuss a range of reasonable alternatives to the project and the "No project" alternative. The EIR discusses the environmental impacts of "Alternative No. 1" and "Alternative No. 2" as identified in the WWTP Facility Plan and a "No Project Alternative."

Response I/6

As noted in Comment G/6, the Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation, prepared by Live Oak Associates, Inc., contained in Appendix C of the DEIR (Refer to page 18) addressed all reasonably foreseeable impacts of the Project on biological species (both animal and plant). The NAWS CLUMP DEIS (refer to page 39), states that NAWS continually works with the City of Ridgecrest to manage the Tui chub in respect to the operation of the current WWTP. These efforts would continue after the selection of a Project Alternative.

Further, information provided in the Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation, prepared by Live Oak Associates, Inc., which is contained in Appendix C of the DEIR and excerpted in Table 3-8 of the DEIR, Page 3-43, states the Tui chub was determined to be absent and suitable habitat for this species was also determined to be absent. A large population occurs approximately 2.0 miles northeast of the project site in two large seeps and associated canals. Therefore, based upon the Biological Evaluation, the DEIR addressed this federally listed species and found impacts to the species to be Less Than Significant.

Response I/7

As noted in Comment F/14, the Comprehensive Land Use Management Plan (CLUMP) for Naval Air Weapons Station China Lake, California did not identify the City Site as lying within any aircraft safety zones. The NAWS China Lake Site, while located within the facility boundaries, is not located within a designated safety zone; therefore, there is minimal risk to any workers that may be involved with construction or operation. While the City of Ridgecrest General Plan Update EIR does conclude that hazards posed by aircraft safety are significant and unavoidable, the justification is that safety hazards are present for residents in the Planning Area. As the Proposed Project Alternatives do not involve the placement of residents, no safety risk is present.

Response I/8

Mitigation measure AQ-2 for both Alternatives provides for the preparation of a Fugitive Dust Control Plan prior to commencement of construction activities and requires that the plan include measures for control of dust during the plant's operation. Said plan will reduce the severity of fugitive dust generated by the Project.

Response I/9

Regarding fugitive dust and health concerns related to Valley Fever, the DEIR discussed the potential exposure in Section 3.3.1.1.6, on Page 3-16.

The Commenter asks if there will be specific time limits for people using Highway 178 and Business 395. The control of users of Highway 178 and Business 395 are beyond the purview of this environmental analysis.

Response I/10

The Commenter recommends that the City follow the process of Amending the City of Ridgecrest General Plan. Mitigation Measure LU-1 first requires the City to avoid the Park designated areas currently used as the "existing off-road vehicle park." Where avoidance is not feasible, Mitigation Measure LU-1 requires that the City replace the park land eliminated by use of the subject land.

Response I/11

It is not anticipated that construction would occur during the nighttime. Therefore, there would be no impacts to Navy pilots as a result of hazards from related to construction lighting. However, in the event that construction during nighttime is necessary, as discussed in Impact I-d, Page 3.-2, there are existing sources of light on both the City and NAWS Sites. During the plant's operation, the proposed Project would require additional lighting for safety and security purposes.

Mitigation Measure AES-2, requires the preparation of a lighting plan consistent with the City of Ridgecrest and County of San Bernardino General Plan and Zoning provisions. Said plan would address all sources of lighting generated by the Project, therefore, the impacts would be less than significant.

Response I/12

The Commenter recommends additional discussion in the DEIR of safety for pilots and residents, the following language shall be added to Section 3.8.4.4, on Page 3-96 of the discussion of Hazards (Impact VIII-e):

Alternatives 1 and 2: **Less Than Significant.** The City and NAWS Sites are both located in the vicinity of NAWS China Lake runways. Related to safety within the vicinity of the airport land use plan, the AICUZ states that the Navy identifies Accident Potential Zones (APZs) around its runways based on historical data for aircraft mishaps. The Navy recommends land uses that concentrate large numbers of people – such as apartments, churches, and schools – be located outside of APZs. In addition, the FAA and military have defined flight safety zones (imaginary surfaces) below aircraft arrival and departure flight tracks and surrounding the airfield. For the safety of the aircraft, the heights of structures and vegetation are restricted in these zones. All ~~aircraft safety zones~~ APZs associated with NAWS China Lake ~~the Station~~ lie within the NAWS China Lake facility boundaries, therefore no hazards will be posed regarding the City Site. The NAWS China Lake Site is not located within either an APZ or a designated safety zone, indicating that there is minimal risk to any workers that may be involved with construction or operation under either Alternative 1 or 2. Further, the proposed WWTP is not a land use that concentrates large numbers of people, therefore impacts related to the hazards due to the safety of residents and/or pilots of aircraft are less than significant.

The Commenter suggests that an MIA overlay is needed within the area of the Project. The AICUZ defines a Military Influence Area (MIA) as "a formally designated geographic planning area where military operations may impact local communities and, conversely where military operations may affect the military's ability to carry out its mission (State of California 2006)." The AICUZ states that the purpose of the MIA overlay is to encourage a buffer zone of compatible land uses in case of future expansion of the NAWS mission. As discussed in this response to this numbered comment, the WWTP is not a land use that concentrates large numbers of people. Therefore, creation of an MIA overlay on the Sites under consideration for location of a WWTP is not needed.

Response I/13

The Executive Summary provides a summary of impacts that are fully discussed in the DEIR. Effects of the Project in relation to the expansion of the facilities and construction of Alternatives 1 and 2 are discussed in the Hazards and Hazardous Materials Impact Assessment (refer to Section 3.8.4.3, Impact VII-d on Page 3-96).

Response I/14

The Commenter's concerns regarding the time necessary to address NEPA and CEQA concerns is noted. However, as previously discussed in our Responses to Comments G/1 and I/2, neither NEPA or CEQA preclude preparation of a CEQA document prior to preparation of the appropriate NEPA document. With respect to "Tiering," 40 CFR 1508.28 states:

> 40 CFR § 1502.20 Tiering.
> Agencies are encouraged to tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review (§ 1508.28). Whenever a broad environmental impact statement has been prepared (such as a program or policy statement) and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action. The subsequent document shall state where the earlier document is available. Tiering may also be appropriate for different stages of actions. (Section 1508.28).
>
> *40 CFR § 1508.28*
> *Tiering* refers to the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared…**(b)** From an environmental impact statement on a specific action at an **early stage (such as need and site selection)** to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or **not yet ripe (emphasis added)**.

Response I/15

As previously stated in our Responses to Comment F/2, the Commenter mentions new laws related to water conservation and water reuse, but does not state the specific laws referenced. Currently adopted California laws related to water conservation do not apply to wastewater treatment facilities. Furthermore, California does not currently have adopted laws that mandate water recycling. Chapter 2.2.2.3 of the DEIR discusses the tertiary treatment process to the extent that the project's processes have been designed; it is not the City's intention that this DEIR be relied upon for future installation of a tertiary-level recycled water system. The DEIR identifies the proposed reuse of secondary treated water generated by the wastewater treatment facility to be for use within landscape irrigation areas of the City, at the alfalfa fields, and at the existing golf course.

Response I/16

Comment noted. Neither CEQA nor NEPA requires consideration of the ratio of financial contribution between agencies involved in an action or Project. Therefore, the issue is not within the purview of this environmental analysis.

Response I/17

Refer to Responses to Comment F/2 and I/15.

Response I/18

As previously stated in our Responses to Comment F/8, with respect to exposure of people or structures to a significant risk involving flooding, the DEIR in 3.9.6.8 states that, the Project would have "No Impact" related to exposure of people to risks of flooding because the Proposed Project's Alternatives are not located within a 100-year flood hazard zone and there are no dammed water bodies with the potential to flood the two Alternative Sites. Therefore, contamination due to flooding also poses no risk to people or structures.

Response I/19

The Commenter mentions several impacts that will affect the "cluster of residents near the City Site," and overview of which are provided in the Executive Summary. These impacts are fully discussed in the following Sections:

a) Impact I-d on page ES-5 regarding additional lighting for safety and security. **(Refer to Section 3.5.3, Impact I-d on Page 3-2)**
b) Impact III-a on page ES-6 regarding increase in criteria air pollutants. **(Refer to Section 3.3.4.1, Impact III-a on Page 3-24)**
c) Impact VII-a and VII-b on page ES-9 regarding short-term construction and long-term operational emissions of GHGs. **(Refer to Sections 3.3.4.1 and 3.3.4.1, Impact III-a and III-b on Pages 3-24)**
d) Impact VIII-a on page ES-10 regarding release of construction related fuels and other hazardous materials; control of storm water contamination; control of amount of run-off from the sites; proper disposal or recycling of hazardous materials. **(Refer to Section 3.8.3.1, Impact VIII-a on Page 3-94 and our Responses to Comments contained in Comment Letter E including new Mitigation Measures HYD-4 and HYD-5)**
e) Mosquito abatement and, **(Refer to Responses to Comment D/2 including new Mitigation Measures HAZ-4)**
f) Exposure of cluster of residents to noise levels during construction **(Refer to Section 3.12 on Page 3-146)**

3 Mitigation Monitoring and Reporting Program

Table 3-1. Alternative 1 Mitigation Monitoring and Reporting Program

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Aesthetics					
Mitigation Measure AES-1:					
In accordance with the City of Ridgecrest General Plan and Zoning Code, County of San Bernardino General Plan and Zoning Code and the Comprehensive Land Use Management Plan for NAWS China Lake, the proposed Project shall preserve existing natural aesthetic resources (vegetation) and re-establish natural vegetation around each site where feasible, install eco-friendly xeriscape landscaping and gateway features at main facility entrances that are visible from sensitive receptors and public rights-of-way. The City shall prepare professional landscaping and lighting plans for the facility in compliance with the aforementioned land use plans and development codes at the time of building permits.	Prior to Construction/ During Construction/ During Operation		City of Ridgecrest	Building Permit Submittal	
Mitigation Measure AES-2:					
Prior to construction of any proposed structures, all proposed lighting shall be indicated on site plans. The lighting plan shall incorporate lighting that directs light pools downward to prevent glare on adjacent and surrounding areas that meet minimum security and safety requirements.	Prior to Construction		City of Ridgecrest	Building Permit Submittal	
Air Quality					
Mitigation Measure AQ-1:					
The following measures for the control of construction-generated PM shall be implemented: a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along	During Construction		City of Ridgecrest & EKAPCD	EKAPCD Authority to Construct Permit	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
onsite roadways, at the site entrance/exit, and along unpaved site access roads. b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g. worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available. c. Reduce and/or phase the amount of the disturbed area (e.g. grading, excavation) where possible. d. All disturbed areas shall be sufficiently watered or stabilized by an EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available. e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or nearby occupied structures. f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips, g. All active and inactive disturbed surface areas shall be compacted, where feasible.					

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
h. Limit equipment and vehicle access to disturbed areas. i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust. k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust. l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering. m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114. n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways. o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-out/deposition of soil onto nearby paved roadways. p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to					

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available. q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g. portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD. r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints. s. Off-road equipment shall be maintained and properly tuned in accordance with manufacturer recommendations. t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible. u. Alternatively fueled equipment (e.g. electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available. v. All on-road and off-road equipment shall be fitted with emission control devices (e.g. diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations. w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.					

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure AQ-2:					
~~An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation an appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.~~ A Fugitive Dust Control Plan shall be prepared for the proposed Project to ensure consistency with EKAPCD Rule 402 for the control and reduction of Fugitive Dust. The Fugitive Dust Control Plan shall include measures to control nuisance cause by fugitive dust during the operation of the WWTF, as well as during construction, and shall address surface soil erosion and loss of topsoil. . The Fugitive Dust Control Plan shall be submitted to EKAPCD and approved by EKAPCD prior to commencement of construction activities.	Prior to Commencement of Construction Activities		~~City of Ridgecrest~~ EKAPCD	Submittal of Fugitive Dust Control Plan to EKAPCD	
Mitigation Measure AQ-3:					
An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation an appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.	Prior to Operation		City of Ridgecrest & EKAPCD	Submittal of Odor Control Mitigation Plan to EKAPCD	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Biological Resources					
Mitigation Measure BIO-1: Le Conte's Thrasher and Other Nesting Migratory Birds					
a. **Avoidance.** In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season, or between September 1 and January 31. b. **Pre-construction surveys.** If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities. c. **Establish buffers.** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.	Prior to Construction		City of Ridgecrest	Pre-construction Survey Report	
Mitigation Measure BIO-2: Desert Tortoise					
a. **Pre-construction Surveys.** Pre-construction surveys will be conducted in suitable desert tortoise habitats on the Project Alternative sites prior to the beginning of ground disturbance, construction activities, and/or any Project Alternative activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS Desert Tortoise Field Manual. b. **Consultation and Permitting.** Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses) consultation with the USFWS and CDFW will likely result in the requirement of "take authorization" in the form of a Biological Opinion (BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the Project Alternative to lawfully proceed. c. **Permit Compliance.** The project applicant will comply with all conditions of a BO and ITP issued for the Project Alternative.	Prior to Construction		City of Ridgecrest	Pre-construction Survey Report	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Conditions of these permits generally include but are not limited to compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.					
Mitigation Measure BIO-3: Burrowing Owls					
a. **Take Avoidance Surveys.** A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of Project Alternative impact areas, where accessible. b. **Avoidance of Active Nests.** If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet should be established around all active owl nests. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below. c. **Passive Relocation of Resident Owls.** During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development may be relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist. Passive relocation will be the preferred method of relocation.	Prior to Construction		City of Ridgecrest	Take-Avoidance Survey Report	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure BIO-4: Mohave Ground Squirrel					
a. **Pre-construction Surveys.** Protocol level surveys will be conducted in desert scrub habitats of the Project Alternative site prior to the beginning of ground disturbance, construction activities, and/or any activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's Mohave Ground Squirrel Survey Guidelines (July 2010). The surveys consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Negative results of these surveys are valid for one year. b. **Consultation and Permitting.** Survey results will be submitted to the CDFW. Should surveys find Mohave ground squirrel on site, consultation with the CDFW will be required, and likely result in the requirement of "take authorization" in the form of a an Incidental Take Permit (ITP). c. **Permit Compliance.** If an ITP is issued for the Project Alternative, the project applicant will comply with all conditions of the ITP. Conditions of this permit generally include but are not limited to compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.	Prior to Construction		City of Ridgecrest	Pre-construction Survey Report	
Mitigation Measure BIO-5: American Badger					
a. **Preconstruction Surveys.** A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the Project Alternative sites. *b.* **Avoidance.** Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified	Prior to and During construction		City of Ridgecrest	Pre-construction Survey Report	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
biologist has determined that the cubs have dispersed or the den has been abandoned.					
Cultural Resources					
Mitigation Measure CR-1:					
If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be ceased and the County of Fresno shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System (CHRIS). The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.	During Construction		City of Ridgecrest	On-going site monitoring	
Mitigation Measure CR-2:					
If human remains are uncovered, or in any other case where human remains are discovered, the Kern or San Bernardino (where applicable) County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.	During Construction		City of Ridgecrest	On-going site monitoring	
Hazards and Hazardous Materials					
Mitigation Measure HAZ-1:					

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
An environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper best management practices implementation, to all field personnel associated with construction activities. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g. identification of potentially hazardous substances) and shall include a review of all site-specific plans. A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the City along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted.	Prior to Construction		City of Ridgecrest	Environmental Training Program	
Mitigation Measure HAZ-2:					
Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the Project's Hazardous Substances Control and Emergency Response Plan. Operation of the pumps and pipelines associated with Alternatives 1 and 2 would not require the storage and use of hazardous materials. The proposed wastewater treatment facility, in either Alternative, would use sodium hypochlorite and alum (aluminum sulfate), both of which are classified as hazardous substances. In addition, small quantities of fuel and related materials would be used and stored as part of Project	During Construction and Operation		City of Ridgecrest	On-going site monitoring	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
operations. Appropriate safety measures, such as controlled access and secondary containment, shall be provided. For both Alternatives 1 and 2 this shall include the preparation and implementation of the following Hazardous Materials Business Plan, as detailed in mitigation measure **HAZ-3** below.					
Mitigation Measure HAZ-3:					
During proposed Project Alternative operations, the City shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layouts, and emergency response and notification procedures for a spill or release.	During Operation		City of Ridgecrest	Hazardous Materials Business Plan	
Mitigation Measure HAZ-4:					
Pre-treatment and adulticiding methods shall be employed at the WWTP to control mosquitos. Pooling water sources around the WWTP such as large puddles from storms and irrigation tail water shall be treated as it accumulates. Adulticiding shall be accomplished in accordance with Best Management Practices which may include fogging the area where severe mosquitoes occur.	During Operation		City of Ridgecrest	On-going site monitoring	
Hydrology and Water Quality					
Mitigation Measure HYD-1:					
The City shall prepare and implement an irrigated land nutrient management plan for the golf course and alfalfa field irrigation site. This will help insure that nutrients (N), water and fertilizer will be applied at agronomic rates only and thus do not adversely affect groundwater.	During Operation		City of Ridgecrest	Nutrient Management Plan	
Mitigation Measure HYD-2:					
The City shall prepare and implement a groundwater study at the City site to determine if additional groundwater monitor wells are needed for the long-term assessment of groundwater impacts from the new percolation ponds and construct new monitor wells as indicated and approved by the RWQCB.	During Operation		City of Ridgecrest & RWQCB	Groundwater Study submitted to RWQCB	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure HYD-3:					
The City shall construct best practicable treatment and control (BPTC) technology to mitigate impacts from TDS and nitrogen on the shallow groundwater. BPTC is to be determined with the submittal of the anti-degradation analysis per SWRCB Resolution 68-16 in the Report of Waste Discharge submitted for a Waste Discharge Permit.	During Operation		City of Ridgecrest & RWQCB	Submit for a Waste Discharge Permit	
Mitigation Measure HYD-4:					
Prepare a Storm Water Pollution Prevention Plan (SWPPP) for construction of the chosen alternative, in accordance with the specifications in the current Construction General Permit.	Prior to Commencement of Construction Activities		City of Ridgecrest	Prepare a SWPPP	
Mitigation Measure HYD-5:					
Identify and conform with construction and post-construction Best Management Practices for storm water management, and implement those BMPs to minimize erosion, promote groundwater recharge and protect ephemeral streams from pollution.	Prior to Commencement of Construction Activities		City of Ridgecrest	Prepare a SWPPP	
Land Use and Planning					
Mitigation Measure LU-1:					
a. **Avoidance.** In order to avoid impacts to parks, prior to final design, the city will make a good faith effort to avoid Park designated areas as construction locates for the effluent disposal ponds. b. **Replacement.** If avoidance is not feasible, the City shall process a General Plan Amendment to change the land use designation for the 20-acre off-road park to Industrial or Institutional, consistent with the proposed effluent disposal ponds planned for the site. Additionally, the City shall designate new lands for parks and replace the existing off-road vehicle park, like for like, to offset impacts to existing parks.	Prior to Construction		City of Ridgecrest	Building Permit Submittal	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Noise					
Mitigation Measure N-1:					
Construction activities shall begin no earlier than 7:00 am and conclude no later than 6:00 pm, Monday through Friday. Construction activities outside of these hours and days may occur only in the event of an emergency.	During Construction		City of Ridgecrest	On-going site monitoring	
Mitigation Measure N-2:					
All construction equipment shall be regularly maintained and equipped with the following noise reduction devices: a. The appropriate manufacturer's noise reduction device (s) including muffler (or the equivalent) that is free of rust, holes, and exhaust leaks. b. Engine housing shall be kept closed and noise-insulating material shall be mounted on the engine housing to reduce noise, to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust. c. Portable compressors, generators, pumps, and other such devices shall be covered with noise-insulating fabric to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust, and shall further reduce noise by operating such devices at lower engine speeds during work to the maximum extent possible. d. Construction equipment not actively being utilized shall be turned off. e. Vehicle idling on-site shall be limited to 5 minutes. f. Reduced-volume backup alarms shall be used for all construction vehicles g. Reduced-volume backup alarms shall be used for all construction vehicles, as allowed by OSHA.	During Construction		City of Ridgecrest	On-going site monitoring	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure N-3:					
Construction activities related to the Proposed Alternatives' wastewater treatment ponds on the City Site shall ensure that the operation of large bulldozers does not occur within a 125 foot buffer of the nearest residence.	During Construction		City of Ridgecrest	On-going site monitoring	
Transportation					
Mitigation Measure TR-1:					
During construction, fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof. Any traffic control activity on SR 178 shall meet Caltrans standards with an encroachment permit.	Prior to and During Construction		City of Ridgecrest	On-going site monitoring	
Mitigation Measure TR-2:					
Prior to the commencement of construction activities, the City shall finalize and pave each access approach. Additionally, the City shall finalize and all-weather surface each onsite access driveway. All access approaches and driveways shall be designed to ensure adequate access and circulation for emergency vehicles.	Prior to and During Construction		City of Ridgecrest	On-going site monitoring	
Mitigation Measure TR-3:					
Provide a Traffic Control Plan to the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway and Caltrans District 9, that addresses the routes, duration and manner of traffic control that will be implemented to accommodate construction related traffic.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department & CalTrans	Submit a Traffic Control Plan	

Alternative 1 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure TR-4:					
Enter into a secured agreement with the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	On-going site monitoring	
Mitigation Measure TR-5:					
Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits shall be obtained from the Kern County Public Works Department, Permits Engineer.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	Submit Encroachment Permit	
Mitigation Measure TR-6:					
Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilized County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	Submit for any necessary Transportation Permits	
Mitigation Measure TR-7:					
Project construction timing may coincide with other neighboring projects. Coordinate construction traffic with The City of Ridgecrest and Kern County Public Works Departments to avoid possible conflicts during the project construction phases.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	On-going site monitoring	
Mitigation Measure TR-8:					
Any traffic control activity on SR 178 shall meet Caltrans standards and shall be accompanied by an encroachment permit issued by Caltrans.	Prior to Commencement of Construction Activities		Caltrans	Submit Encroachment Permit	

Table 3-2. Alternative 2 Mitigation Monitoring and Reporting Program

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Aesthetics					
Mitigation Measure AES-1:					
In accordance with the City of Ridgecrest General Plan and Zoning Code, County of San Bernardino General Plan and Zoning Code and the Comprehensive Land Use Management Plan for NAWS China Lake, the proposed Project shall preserve existing natural aesthetic resources (vegetation) and re-establish natural vegetation around each site where feasible, install eco-friendly xeriscape landscaping and gateway features at main facility entrances that are visible from sensitive receptors and public rights-of-way. The City shall prepare professional landscaping and lighting plans for the facility in compliance with the aforementioned land use plans and development codes at the time of building permits.	Prior to Construction/ During Construction/ During Operation		City of Ridgecrest	Building Permit Submittal	
Mitigation Measure AES-2:					
Prior to construction of any proposed structures, all proposed lighting shall be indicated on site plans. The lighting plan shall incorporate lighting that directs light pools downward to prevent glare on adjacent and surrounding areas that meet minimum security and safety requirements.	Prior to Construction		City of Ridgecrest	Building Permit Submittal	
Air Quality					
Mitigation Measure AQ-1:					
The following measures for the control of construction-generated PM shall be implemented: a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.	During Construction		City of Ridgecrest & EKAPCD	EKAPCD Authority to Construct Permit	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/ palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g. worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available. c. Reduce and/or phase the amount of the disturbed area (e.g. grading, excavation) where possible. d. All disturbed areas shall be sufficiently watered or stabilized by an EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available. e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or nearby occupied structures. f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips, g. All active and inactive disturbed surface areas shall be compacted, where feasible. h. Limit equipment and vehicle access to disturbed areas.					

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust. k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust. l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering. m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114. n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways. o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-out/deposition of soil onto nearby paved roadways. p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to					

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available. q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g. portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD. r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints. s. Off-road equipment shall be maintained and properly tuned in accordance with manufacturer recommendations. t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible. u. Alternatively fueled equipment (e.g. electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available. v. All on-road and off-road equipment shall be fitted with emission control devices (e.g. diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations. w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.					

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure AQ-2:					
~~An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation an appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.~~ A Fugitive Dust Control Plan shall be prepared for the proposed Project to ensure consistency with EKAPCD Rule 402 for the control and reduction of Fugitive Dust. The Fugitive Dust Control Plan shall include measures to control nuisance cause by fugitive dust during the operation of the WWTF, as well as during construction, and shall address surface soil erosion and loss of topsoil. . The Fugitive Dust Control Plan shall be submitted to EKAPCD and approved by EKAPCD prior to commencement of construction activities.	Prior to Commencement of Construction Activities		~~City of Ridgecrest~~ EKAPCD	Submittal of Fugitive Dust Control Plan to EKAPCD	
Mitigation Measure AQ-3:					
An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation an appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.	Prior to Operation		City of Ridgecrest & EKAPCD	Submittal of Odor Control Mitigation Plan to EKAPCD	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Biological Resources					
Mitigation Measure BIO-1: Le Conte's Thrasher and Other Nesting Migratory Birds					
a. **Avoidance.** In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season, or between September 1 and January 31. b. **Pre-construction surveys.** If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities. c. **Establish buffers.** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.	Prior to Construction		City of Ridgecrest	Pre-construction Survey Report	
Mitigation Measure BIO-2: Desert Tortoise					
a. **Pre-construction Surveys.** Pre-construction surveys will be conducted in suitable desert tortoise habitats on the Project Alternative sites prior to the beginning of ground disturbance, construction activities, and/or any Project Alternative activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS Desert Tortoise Field Manual. b. **Consultation and Permitting.** Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses) consultation with the USFWS and CDFW will likely result in the requirement of "take authorization" in the form of a Biological Opinion (BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the Project Alternative to lawfully proceed. c. **Permit Compliance.** The project applicant will comply with all conditions of a BO and ITP issued for the Project Alternative.	Prior to Construction		City of Ridgecrest	Pre-construction Survey Report	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Conditions of these permits generally include but are not limited to compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.					
Mitigation Measure BIO-3: Burrowing Owls					
a. **Take Avoidance Surveys.** A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of Project Alternative impact areas, where accessible. b. **Avoidance of Active Nests.** If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet should be established around all active owl nests. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below. c. **Passive Relocation of Resident Owls.** During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development may be relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist. Passive relocation will be the preferred method of relocation.	Prior to Construction		City of Ridgecrest	<u>Take-Avoidance Survey Report</u>	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure BIO-4: Mohave Ground Squirrel					
a. **Pre-construction Surveys.** Protocol level surveys will be conducted in desert scrub habitats of the Project Alternative site prior to the beginning of ground disturbance, construction activities, and/or any activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's Mohave Ground Squirrel Survey Guidelines (July 2010). The surveys consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Negative results of these surveys are valid for one year. b. **Consultation and Permitting.** Survey results will be submitted to the CDFW. Should surveys find Mohave ground squirrel on site, consultation with the CDFW will be required, and likely result in the requirement of "take authorization" in the form of a an Incidental Take Permit (ITP). c. **Permit Compliance.** If an ITP is issued for the Project Alternative, the project applicant will comply with all conditions of the ITP. Conditions of this permit generally include but are not limited to compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.	Prior to Construction		City of Ridgecrest	Pre-construction Survey Report	
Mitigation Measure BIO-5: American Badger					
a. **Preconstruction Surveys.** A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the Project Alternative sites. b. **Avoidance.** Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified	Prior to and During construction		City of Ridgecrest	Pre-construction Survey Report	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
biologist has determined that the cubs have dispersed or the den has been abandoned.					
Mitigation Measure BIO-6:					
Preparation of erosion control plan. Prior to the start of construction, an erosion control plan will be prepared, Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. The site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing onsite erosion and the concomitant deposition of sediment in onsite and offsite drainages. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of the erosion control plan will include the following: a. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three. b. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures 1 above, but they may include any number of additional measures appropriate for this particular site and this particular Project Alternative, including grease traps in parking areas, regular site inspections	Prior to Construction		City of Ridgecrest	Erosion Control Plan	
Cultural Resources					
Mitigation Measure CR-1:					
If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be ceased and the County of Fresno shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources	During Construction		City of Ridgecrest	On-going site monitoring	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Information System (CHRIS). The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.					
Mitigation Measure CR-2:					
If human remains are uncovered, or in any other case where human remains are discovered, the Kern or San Bernardino (where applicable) County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.	During Construction		City of Ridgecrest	On-going site monitoring	
Hazards and Hazardous Materials					
Mitigation Measure HAZ-1:					
An environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper best management practices implementation, to all field personnel associated with construction activities. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g. identification of potentially hazardous substances) and shall include a review of all site-specific plans. A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the City along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The	Prior to Construction		City of Ridgecrest	Environmental Training Program	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted.					
Mitigation Measure HAZ-2:					
Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the Project's Hazardous Substances Control and Emergency Response Plan. Operation of the pumps and pipelines associated with Alternatives 1 and 2 would not require the storage and use of hazardous materials. The proposed wastewater treatment facility, in either Alternative, would use sodium hypochlorite and alum (aluminum sulfate), both of which are classified as hazardous substances. In addition, small quantities of fuel and related materials would be used and stored as part of Project operations. Appropriate safety measures, such as controlled access and secondary containment, shall be provided. For both Alternatives 1 and 2 this shall include the preparation and implementation of the following Hazardous Materials Business Plan, as detailed in mitigation measure **HAZ-3** below.	During Construction and Operation		City of Ridgecrest	<u>On-going site monitoring</u>	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure HAZ-3:					
During proposed Project Alternative operations, the City shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layouts, and emergency response and notification procedures for a spill or release.	During Operation		City of Ridgecrest	Hazardous Materials Business Plan	
Mitigation Measure HAZ-4:					
Pre-treatment and adulticiding methods shall be employed at the WWTP to control mosquitos. Pooling water sources around the WWTP such as large puddles from storms and irrigation tail water shall be treated as it accumulates. Adulticiding shall be accomplished in accordance with Best Management Practices which may include fogging the area where sever mosquitos occur.	During Operation		City of Ridgecrest	On-going site monitoring	
Hydrology and Water Quality					
Mitigation Measure HYD-1:					
The City shall prepare and implement an irrigated land nutrient management plan for the golf course and alfalfa field irrigation site. This will help insure that nutrients (N), water and fertilizer will be applied at agronomic rates only and thus do not adversely affect groundwater.	During Operation		City of Ridgecrest	Nutrient Management Plan	
Mitigation Measure HYD-2:					
The City shall prepare and implement a groundwater study at the City site to determine if additional groundwater monitoring wells are needed for the long-term assessment of groundwater impacts from the new percolation ponds and construct new monitoring wells as indicated and approved by the RWQCB.	During Operation		City of Ridgecrest	Groundwater Study submitted to RWQCB	
Mitigation Measure HYD-3:					
The City shall construct best practicable treatment and control (BPTC) technology to mitigate impacts from TDS and nitrogen on the shallow groundwater. BPTC is to be determined with the submittal of the anti-degradation analysis per SWRCB Resolution 68-16 in the Report of Waste Discharge submitted for a Waste Discharge Permit.	During Operation		City of Ridgecrest	Submit for a Waste Discharge Permit	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure HYD-4:					
Prepare a Storm Water Pollution Prevention Plan (SWPPP) for construction of the chosen alternative, in accordance with the specifications in the current Construction General Permit.	Prior to Commencement of Construction Activities		City of Ridgecrest	Prepare a SWPPP	
Mitigation Measure HYD-5:					
Identify and conform with construction and post-construction Best Management Practices for storm water management, and implement those BMPs to minimize erosion, promote groundwater recharge and protect ephemeral streams from pollution.	Prior to Commencement of Construction Activities		City of Ridgecrest	On-going site monitoring	
Land Use and Planning					
Mitigation Measure LU-1:					
a. **Avoidance.** In order to avoid impacts to parks, prior to final design, the city will make a good faith effort to avoid Park designated areas as construction locates for the effluent disposal ponds. b. **Replacement.** If avoidance is not feasible, the City shall process a General Plan Amendment to change the land use designation for the 20-acre off-road park to Industrial or Institutional, consistent with the proposed effluent disposal ponds planned for the site. Additionally, the City shall designate new lands for parks and replace the existing off-road vehicle park, like for like, to offset impacts to existing parks.	Prior to Construction		City of Ridgecrest	Building Permit Submittal	
Noise					
Mitigation Measure N-1:					
Construction activities shall begin no earlier than 7:00 am and conclude no later than 6:00 pm, Monday through Friday. Construction activities outside of these hours and days may occur only in the event of an emergency.	During Construction		City of Ridgecrest	On-going site monitoring	
Mitigation Measure N-2:					
All construction equipment shall be regularly maintained and equipped with the following noise reduction devices:	During Construction		City of Ridgecrest	On-going site monitoring	

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
a. The appropriate manufacturer's noise reduction device (s) including muffler (or the equivalent) that is free of rust, holes, and exhaust leaks. b. Engine housing shall be kept closed and noise-insulating material shall be mounted on the engine housing to reduce noise, to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust. c. Portable compressors, generators, pumps, and other such devices shall be covered with noise-insulating fabric to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust, and shall further reduce noise by operating such devices at lower engine speeds during work to the maximum extent possible. d. Construction equipment not actively being utilized shall be turned off. e. Vehicle idling on-site shall be limited to 5 minutes. f. Reduced-volume backup alarms shall be used for all construction vehicles g. Reduced-volume backup alarms shall be used for all construction vehicles, as allowed by OSHA.					
Mitigation Measure N-3:					
Construction activities related to the Proposed Alternatives' wastewater treatment ponds on the City Site shall ensure that the operation of large bulldozers does not occur within a 125 foot buffer of the nearest residence.	During Construction		City of Ridgecrest	<u>On-going site monitoring</u>	
Transportation					
Mitigation Measure TR-1:					

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
During construction, fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof. Any traffic control activity on SR 178 shall meet Caltrans standards with an encroachment permit.	Prior to and During Construction		City of Ridgecrest	On-going site monitoring	
Mitigation Measure TR-2:					
Prior to the commencement of construction activities, the City shall finalize and pave each access approach. Additionally, the City shall finalize and all-weather surface each onsite access driveway. All access approaches and driveways shall be designed to ensure adequate access and circulation for emergency vehicles.				On-going site monitoring	
Mitigation Measure TR-3:					
Provide a Traffic Control Plan to the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway and Caltrans District 9, that addresses the routes, duration and manner of traffic control that will be implemented to accommodate construction related traffic.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department & CalTrans	Submit a Traffic Control Plan	
Mitigation Measure TR-4:					
Enter into a secured agreement with the Kern County Public Works Department, Building & Development Division for any construction that may take place within any County maintained roadway to ensure that any County roads that are demonstrably damaged by project-related activities are promptly repaired and, if necessary, paved, slurry-sealed, or reconstructed as per requirements of the State and or Kern County.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	On-going site monitoring	
Mitigation Measure TR-5:					
Obtain all necessary Encroachment Permits for any proposed work within the County road right of way. These permits shall be obtained from the Kern County Public Works Department, Permits Engineer.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	Submit Encroachment Permit	
Mitigation Measure TR-6:					

Alternative 2 Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**~~Frequency of Monitoring~~**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Obtain all necessary Transportation Permits for any oversized or overweight (heavy) loads that will utilized County maintained roads, which may require California Highway Patrol escort. These permits may be obtained from our Permits Engineer.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	Submit for any necessary Transportation Permits	
Mitigation Measure TR-7:					
Project construction timing may coincide with other neighboring projects. Coordinate construction traffic with The City of Ridgecrest and Kern County Public Works Departments to avoid possible conflicts during the project construction phases.	Prior to and During Construction		City of Ridgecrest, Kern County Public Works Department	On-going site monitoring	
Mitigation Measure TR-8:					
Any traffic control activity on SR 178 shall meet Caltrans standards and shall be accompanied by an encroachment permit issued by Caltrans.	Prior to Commencement of Construction Activities		Caltrans	Submit Encroachment Permit	

4 Draft EIR

The original Draft EIR is this section.

City of Ridgecrest

New City Wastewater Treatment Plant

Draft Environmental Impact Report

Kern County, California
April 2016



Prepared for:
City of Ridgecrest
Kern County, California

Prepared by:
Provost & Pritchard Consulting Group
Bakersfield, California

EST. 1968
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Appendices

Appendix A: Notice of Preparation
Appendix B: Air Quality/Greenhouse Gases
Appendix C: Biological Evaluation
Appendix D: Cultural Resources Study
Appendix E: Groundwater Impact Assessment

Acronyms and Abbreviations

ACOE ..... U.S. Army Corps of Engineers
AICUZ ..... Air Installation Compatible Use Zone
ALUCP ..... Airport Land Use Compatibility and Planning
ARB ..... Air Resources Board
AQAP ..... Air Quality Attainment Plan
BARCT ..... Best Available Retrofit Control Technology
BMP ..... Best Management Practices
BOD ..... Biochemical Oxygen Demand
BSG ..... Below Surface Grade
C_2H_3C1 or VCM ..... Vinyl Chloride
CalEEMod ..... California Emissions Estimator Model
CalRecycle ..... Department of Resources Recycling and Recovery
CCAA ..... California Clean Air Act
CCS ..... Converse Consultants Southwest, Inc.
CDC ..... Centers for Disease Control
CEQA ..... California Environmental Quality Act
CHRIS ..... California Historical Resources Information System
City ..... City of Ridgecrest
CNEL ..... Community Noise Equivalent Level
CO ..... Carbon Monoxide
CREST ..... Carson Ridgecrest Eastern Sierra Transit
CRHR ..... California Register of Historical Resources
CWA ..... Clean Water Act
dBA ..... A-Weighted Decibels
DEIR ..... Draft Environmental Impact Report
Diesel Exhaust PM or DPM ..... Diesel Exhaust Particulate Matter
DNL ..... Differential Nonlinearity
DOC ..... Department of Conservation
DRRP ..... Diesel Risk Reduction Plan
EFZ ..... Earthquake Fault Zones
EKAPCD ..... Eastern Kern Air Pollution Control District
EIR ..... Environmental Impact Report

EIS ..... Environmental Impact Statement
EPA ..... Environmental Protection Agency
FCAA ..... Federal Clean Air Act
FEIR ..... Final Environmental Impact Report
FMMP ..... Farmland Mapping & Monitoring Program
FPPA ..... Farmland Protection Policy Act
FRA ..... Federal Railway Administration
FTA ..... Federal Transit Administration
gpm ..... gallons per minute
H_2S ..... Hydrogen Sulfide
IFM ..... Important Farmland Maps
IWVWD ..... Indian Wells Valley Water District
JEIP ..... Joint Emissions Inventory Program
KERN OES ..... Kern County Fire Department office of Emergency Services
KRT ..... Kern Regional Transit
MDAB ..... Mojave Desert Air Basin
mgd ..... million gallons per day
MIA ..... Military Influence Area
MMADF ..... Maximum Month Average Daily Flow
MRZ ..... Mineral Resource Zones
MSL ..... Mean Sea Level
NAHC ..... Native American Heritage Commission
NAAQS ..... National Ambient Air Quality Standards
HAP ..... Hazardous Air Pollutants
NAWS ..... Naval Air Weapons Station
NESHAP ..... National Emission Standards for Hazardous Air Pollutants
NOC ..... Notice of Completion
NOP ..... Notice of Preparation
NO_2 ..... Nitrogen Dioxide
NO_x ..... Oxides of Nitrogen
NPDES ..... National Pollutant Discharge Elimination System
NRHP ..... National Register of Historic Places
NWP ..... Nationwide Permit
O_3 ..... Ozone

O&M ..... Operations and maintenance
ONC ..... Office of Noise Control
Pb ..... Lead
PEEP ..... Pooled Emissions Estimation Program
PERP ..... Portable Equipment registration Program
PM ..... Particulate Matter
PM10 ..... Particulate Matter Less Than 10 Microns in Diameter
PM2.5 ..... Particulate Matter Less Than 2.5 Microns in Diameter
POTW ..... Publicly Owned Treatment Works
PPV ..... Peak Particle Velocity
Regional Board ..... Lahontan Regional Water Quality Control Board
RMS ..... Root Mean Squared
ROG ..... Reactive Organic Gases
RSD ..... Ridgecrest Sanitation District
RTP ..... Regional Transportation Plan
RWQCB ..... Regional Water Quality Control Board
SAFETEA ..... Safe, Accountable, Flexible, and Efficient Transportation Equity Act
SB ..... Senate Bill
SCADA ..... Supervisory Control and Data Acquisition
SHMA ..... Seismic Hazards Mapping Act
SMARA ..... Surface Mining and Reclamation Act
SO_2 ..... Sulfur Dioxide
SO_4^{2-} ..... Sulfates
SWPPP ..... Stormwater Pollution Prevention Plan
TAC ..... Toxic Air Contaminants
TBACT ..... Toxic-Best-Available-Control-Technology
TOG ..... Total Organic Gases
UFP ..... Ultrafine Particles
USDA ..... United States Department of Agriculture
USEPA ..... United States Environmental Protection Agency
Vdb ..... Decibel Notation
VOC ..... Volatile Organic Compounds
WAS ..... Waste Activated Sludge

WDR ..... Waste Discharge Requirements
WWTP ..... Wastewater Treatment Plant

Executive Summary

ES.1 Introduction

The City of Ridgecrest (City) has prepared this Environmental Impact Report (EIR) for the proposed City of Ridgecrest's New Wastewater Treatment Plant (WWTP) in compliance with the California Environmental Quality Act (CEQA).

ES.2 Purpose and Need for the Proposed Project

The existing WWTP located on U.S. Naval Air Weapons Station (NAWS) China Lake. The City of Ridgecrest operates the WWTP on the NAWS property under an easement agreement with the Federal government. The 6.25 acre WWTP and associated 300 acres of wastewater disposal ponds are currently located on a 355-acre easement site that is leased from the Navy. An additional 12 acres of wastewater disposal ponds are located at a site owned by the City located approximately 4 miles to the south. The WWTP and waste disposal ponds have been serving the needs of both the City and NAWS for many years but are in need of significant repair to maintain its functionality. Fundamental portions of the plant process components are deteriorated, and certain conditions may be considered hazardous. Considering the condition of the existing WWTP, it cannot continue to adequately serve the City and NAWS without substantial upgrading or facility replacements. Additionally, the existing WWTP has approached its permitted capacity of 3.6 million gallons per day (mgd). In 1993, flows reached 3.3 mgd, before population began to decline in the mid 1990s. Current flows through the WWTP average approximately 2.2 mgd; however, future growth at the NAWS and within the City is expected to cause flows to approach the permitted capacity again.

The objective of the proposed City of Ridgecrest's New Wastewater Treatment Plant (WWTP) is to construct improvements to the 3.6 mgd (average dry weather flow) facility with updated facilities and technology.

ES.3 Proposed Project Alternatives Summary

In 2015, the City prepared a Wastewater Treatment Facility Plan that evaluated its current and future wastewater treatment needs. The study identified two Project Alternatives that would serve the City equally well, but that would place facilities at different locations and would require different levels of funding for construction, operations, and maintenance. This EIR will evaluate the potential environmental impacts associated with the two recommended Project Alternatives, referred to as Alternatives 1 and 2, as well as the No Project Alternative. For the purposes of this EIR, the proposed Project involves the construction of new or improved 3.6 mgd average daily flow wastewater treatment facility to serve as an upgrade or replacement of the existing, outdated, 3.6-mgd wastewater facility. Alternatives 1 and 2 have numerous components in common, including sites to be utilized, facilities to be constructed and operated –although locations of those facilities may vary—and treatment capacity. Alternatives 1 and 2 and the No Project Alternative are fully described in Chapter 2: Project Alternatives.

Common sites include:

- **NAWS China Lake Site (NAWS Site):** The 355-acre City-leased NAWS Site is located northeast of the intersection of Knox Road and Pole Line Road, in the northerly extent of the City limits on the NAWS China Lake base. In addition to approximately 300 acres of wastewater disposal ponds, this Site contains the existing wastewater treatment plant (headworks, digester, clarifiers, etc.) on

approximately 6.25 acres. The land occupied by the City wastewater treatment and disposal facilities is owned by the federal government but is leased by the City as an easement.

- **City of Ridgecrest (City Site):** The City Site, located roughly 4 miles south of the WWTP at the NAWS Site, consists of properties owned by the City located on both sides of San Bernardino Boulevard, partly within the Ridgecrest City limits and partly within San Bernardino County jurisdiction. The site is approximately 230 acres in size. At present, it contains 12 acres of existing wastewater disposal ponds, approximately 33 acres of alfalfa fields, and a 20-acre off-road vehicle park, with the remainder of the site undeveloped and containing common natural vegetation.

The Project Sites also consist of an existing four-mile long gravity sewer delivery main located within City roadway rights-of-way and easements on the NAWS Site and an essentially parallel pressurized force main that returns some treated water to the disposal ponds at the City Site.

Common facilities include:

- Existing four-mile long gravity sewage delivery main
- Influent pumps and headworks
- Receiving station for delivery of septage collected from off-site locations (septage receiving station)
- Oxidation ditches
- Aerobic digesters
- Treatment and disposal ponds
- Tertiary treatment and disinfection
- Storage tank for recycled water
- Existing four-mile long, 20-inch force main
- Operations and maintenance buildings
- Parking facilities
- Diesel-powered emergency generator
- Domestic water and wastewater connections

Alternative 1 Specific Characteristics

Alternative 1 would construct certain new upgrades and improvements to the existing wastewater treatment plant located at the NAWS Site. The existing plant occupies a 6.25-acre site leased by the City as an easement. The majority of the proposed new upgrades would occupy an additional approximately 7.4 acres adjacent to the west of the existing WWTP. The City would need to expand the existing easement to incorporate the additional 7.4 acres. Under this Alternative, portions of the existing WWTP would be decommissioned, with new or upgraded facilities constructed both on the existing 6.25-acre NAWS Site as well as on the proposed additional 7.4-acre lease area abutting to the west.

Alternative 2 Specific Characteristics

Alternative 2 would construct an all-new wastewater treatment plant on approximately 10 acres owned by the City adjacent to the existing 12 acres of disposal ponds at the City Site, approximately four miles south of the

NAWS Site. While the existing four-mile-long, 20-inch-diameter effluent force main that currently is used to return some treated wastewater from the WWTP at the NAWS Site to the 12-acres of City Site disposal ponds would remain in place, the main would be operated in reverse of its current direction, meaning effluent from the new WWTP to be built at the City Site would be pumped north to the NAWS Site wastewater disposal ponds. A new 16-inch-diameter force main would be constructed parallel to, the existing force main. The new force main would cross numerous properties owned by the United States additional linear easements would be needed for construction and operation of the new main.

Following construction of either Alternative 1 or Alternative 2, the existing wastewater treatment ponds at both sites would continue to function and any remaining components of the existing treatment plant deemed unsuitable for continued use at the NAWS Site would be decommissioned and the site would be used for solids dewatering and storage, and for additional tertiary treatment to provide recycled water.

The City of Ridgecrest has not identified a Preferred Project of the two Alternatives. Alternatives 1 and 2 and the No Project Alternative are each fully evaluated for potential environmental impacts to assist the City with identifying the environmentally preferred alternative and in selecting the Preferred Project.

The **No Project Alternative** would involve no Project being built and therefore would result in no direct changes to the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on the NAWS Site, the wastewater disposal ponds located at the NAWS and City Sites, and the existing underground four-mile-long, 20-inch-diameter effluent force main and gravity fed influent main. The No Project Alternative reflects the existing environmental baseline established in this EIR, which is more fully described in Section 2.2 Baseline Conditions.

ES.5 Public Involvement Process

The preparation of this EIR involves the public in the decision-making process. The CEQA process is intended to be a full disclosure process that informs the decision-makers, the general public and Trustee, Responsible, and other interested agencies of the potential adverse environmental effects that could result from implementation of the project. CEQA encourages the use of Public Scoping to allow the general citizenry interested in the project to engage and offer feedback to the Lead Agency about potential impacts and mitigation measures it feels should be evaluated in the scope of the EIR The following sections identify the public processes that have been undertaken by the City of Ridgecrest in preparation of the New Wastewater Treatment Plant (WWTP) EIR.

ES.5.1 Notice of Preparation of an EIR and Comment Period

As required by CEQA, the City provided a Notice of Preparation (NOP) announcing a comment period of 30 days beginning on June 30, 2015 and ending on July 30, 2015 (Appendix A). During this time the public was invited to provide written comments to the Lead Agency regarding environmental concerns they thought should be evaluated in the EIR. The NOP had multiple purposes: to inform public agencies and the general public of the New Wastewater Treatment Plant (WWTP) EIR scoping process; to solicit comments to assist the City in determining environmental impacts relating to the proposed Alternatives; and to identify potential feasible and reasonable mitigation for such impacts that should be considered in this EIR. The NOP was provided to a number of local, State, and federal agencies, interested individuals or organizations, and to owners of property within 300 feet of the proposed boundaries of the two Alternatives. The NOP was also published as a legal notice in the Daily Independent newspaper on June 30, 2015, as required by CEQA.

ES.5.2 Notice of Completion of the Draft EIR and Public Review Period

Upon completion of the Draft EIR (DEIR), another public notice announcing the completion of the Draft EIR, called a Notice of Completion (NOC) was filed in accordance with CEQA with the Governor's Office of Planning and Research - State Clearinghouse and the Kern County Clerk mailed to interested public agencies, individuals and organizations on April 15, 2016 to initiate a 45-day DEIR public review period. The review period runs from April 15, 2016 through May 31, 2016. Comments submitted should be in writing, if possible and submitted to the City prior to the end of the comment period. Comments should be directed to:

City of Ridgecrest

Attn: John Bracken, Wastewater Supervisor

100 W. California Avenue

Ridgecrest, CA 93555

(760) 446-4631

Email: jbracken@ridgecrest-ca.gov

The NOC also informs the public that additional copies of the Draft EIR are available for review at the following locations:

City of Ridgecrest
100 W. California Avenue
Ridgecrest, CA 93555

Kern County Clerk
1115 Truxtun Avenue
Bakersfield, CA 93301

ES.6 Summary of Impact Assessment – Alternative 1

This DEIR has identified potentially significant adverse environmental impacts requiring mitigation measures in the areas of Aesthetics, Biological Resources, Prehistoric Cultural Resources (no impacts were identified in the area of Historical Resources), Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise and Vibration, and Utilities and Service Systems. All other environmental topics were determined to have less than significant or no impacts. Table 5-1 below provides a summary of the proposed Alternative 1 Project's potential environmental impacts, each impact's level of potential significance as a result of implementation of the Alternative 1 Project, and for potentially significant adverse impacts, mitigation measures to avoid or reduce the impact to a less than significant level or to the greatest degree feasible. Following identification of mitigation measures, the DEIR indicates the status of the resulting impact with mitigation measures incorporated. The identified levels of significance assume implementation of all permit and approval requirements of Federal, State and local law and regulations applicable to the Project, standard conditions of approval, and construction best management practices.

Table ES 1. Summary of Environmental Impacts of Alternative 1

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact I-a. The alternatives would result in approximately 56 acres of wastewater treatment ponds at the City Site and would impact the cluster of residences that are located east of San Bernardino Boulevard and south of Bowman Road. To these residents, this conversion of land may be considered a substantial change to their environment.	Potentially Significant	MM AES-1 and AES-2	Less than Significant
Impact I-b. The Alternative 1 Project sites (as previously identified) are not located in the immediate vicinity of any California scenic highways, as defined by the State of California Department of Transportation (Caltrans). According to the California Scenic Highway Mapping System, the nearest officially designated state scenic highway is State Route 190 located within the Death Valley National Park, approximately 44 miles north of the site. It should be noted that this section of highway is also designated as a National Scenic Byway.	No impact	None	No Impact
Impact I-c. The alternatives would result in approximately 56 acres of wastewater treatment ponds at the City Site and would impact the cluster of residences that are located east of San Bernardino Boulevard and south of Bowman Road. To these residents, this conversion of land may be considered a substantial change to their environment.	Potentially Significant	MM AES-1 and AES-2	Less than Significant
Impact I-d. The proposed Alternatives would require additional lighting for safety and security purposes.	Potentially Significant	MM AES-2	Less than Significant
Impact II-a. There is no land involved in the two Alternatives designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance as shown on the Farmland Mapping and Monitoring Program (FMMP).	No Impact	None	No Impact
Impact II-b. There are no agricultural zones onsite or within the immediate vicinity of the Alternative 1 or 2 Project sites.	No Impact	None	No Impact
Impact II-c. There are no forest lands or timberland zones onsite or within the immediate vicinity of the Alternative 1 or 2 Project sites.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact II-d. There are no existing forest lands on the Alternative 1 or 2 Project sites.	No Impact	None	No Impact
Impact II-e. Any potential changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use have been discussed in II-a through II-d.	No Impact	None	No Impact
Impact III-a. Project Alternatives would not result in significant short-term or long-term increases of criteria air pollutants that would exceed applicable thresholds.	Less than Significant	None	Less than Significant
Impact III-b. As discussed in Impacts III-c, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a potentially significant impact.	Potentially Significant	MM AQ-1	Less than Significant
Impact III-c. During the initial year of construction, the proposed Project Alternatives would generate maximum uncontrolled annual emissions of approximately 0.4 tons/year of ROG, 4.7 tons/year of NO_x, 3.2 tons/year of CO, 0.7 tons/year of PM_{10}, and 0.4 tons/year of $PM_{2.5}$. During the second year of construction, the proposed Project Alternatives would generate maximum uncontrolled annual emissions of approximately 0.2 tons/year of ROG, 1.7 tons/year of NO_x, 1.3 tons/year of CO, 0.1 tons/year of PM_{10} and $PM_{2.5}$. Daily indirect construction-generated emissions of ROG and NO_X would be less than one pound per day. Construction-generated emissions would not exceed applicable EKAPCD significance thresholds. However, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses.	Potentially Significant	MM AQ-1	Less than Significant
Impact III-d. . The Alternatives would not result in a substantial increase in vehicle trips that would affect nearby intersection operations.	Less than Significant	None	Less than Significant
Impact III-e. Under Alternative 1, the nearest residences would be located approximately 1,750 feet from the proposed treatment facility. Under Alternative 2, the nearest residences would be located approximately 960 feet from the treatment facility. Given that residential land uses are located within one mile of the proposed treatment plants and the proposed Project, the odor-generating potential of the Project impact sensitive receptors.	Potentially Significant	MM AQ-2	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IV-a. Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing.	Potentially Significant	MM BIO-1, BIO-2, BIO-3, BIO-4, and BIO-5	Less than Significant
Impact IV-b. No riparian or other sensitive habitats occur on Alternative 1 or Alternative 2 sites.	No Impact	None	No Impact
Impact IV-c. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. However, hydrologic features are absent for the Project Alternative sites and surrounding lands. Furthermore, the subject area is flat and receives very little rainfall.	Less than Significant	None	Less than Significant
Impact IV-d. Because no part of the sites serves as a fish and wildlife movement corridor, the Project Alternatives will have no effect on regional fish or wildlife movements at Alternative 1 or at Alternative 2.	No Impact	None	No Impact
Impact IV-e. There are no tree preservation ordinances that would be in conflict with either Alternative 1 or Alternative 2.	No Impact	None	No Impact
Impact IV-f. . Both Alternative 1 and Alternative 2 will comply with the provisions of the 2030 City of Ridgecrest General Plan and 2007 County of San Bernardino General Plan policies (as amended in 2014) related to biological resources. These policies can be found in Attachment D of Appendix D. No habitat conservation plans are in effect for the Project Alternatives areas.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact V-a. The pedestrian survey identified four previously unrecorded isolated resources; this included one historical glass fragment, two historic tin cans, and two spatially separate tin cans. Isolated artifacts are not eligible for listing on the CRHR because they lack association and context with other archaeological materials, therefore the presence of the four isolated resources will pose no threat of impact.	Potentially Significant	MM CR-1	Less than Significant
Impact V-b. Refer to Impact V-a.	Potentially Significant	MM CR-1	Less than Significant
Impact V-c. The records search conducted with the CHRIS did not identify any known paleontological resources within the Project Alternatives' area, nor are there any known geologic features in the Project area. Project construction will not be expected to disturb any paleontological resources not previously disturbed.	Potentially Significant	MM CR-1	Less than Significant
Impact VI-a. It is unlikely that an earthquake would result in surface rupture at either Project Alternative location.	Less than Significant	None	Less than Significant
Impact VI-a-i. The closest Fault-Rupture Hazard Zone is the Little Lake Fault Zone, located approximately 4.2 miles northwest of the Alternative 1 location. Alternative 2 is approximately 3.5 miles south-southeast of Alternative 1.	Less than Significant	None	Less than Significant
Impact VI-a-ii. All proposed structures must be designed to comply with the California Building Code, which is considered to be a standard safeguard against major structural failures and loss of life.	Less than Significant	None	Less than Significant
Impact VI-a-iii. Based on regional background information the potential for liquefaction is considered less than significant due to the soil types underlying the Alternative 1 and 2 locations and as depth to groundwater is greater than 50 feet below ground surface.	Less than Significant	None	Less than Significant
Impact VI-a-iv. The City of Ridgecrest has not been included in the SHMA and as such does not require any further investigation for liquefaction, amplified shaking or earthquake-induced landslide hazard zones.	Less than Significant	None	Less than Significant
Impact VI-b. Surface soil erosion and loss of topsoil could occur from soil disturbances associated with construction activities at Alternative 1 and Alternative 2 locations.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact VI-c. Excavation, grading, and fill operations associated with construction could alter existing slope profiles making them unstable as a result of over-excavation of slope material, steepening of the slope, or increased loading. However, destabilization of natural or constructed slopes is unlikely to occur as surface topography at both Project Alternative locations is relatively flat. Additionally, standard engineering design features and construction procedures would be implemented to maintain stable slopes and excavations during construction.	Less than Significant	None	Less than Significant
Impact VI-d. Shrink-swell or expansive soil behavior is a condition in which soil reacts to changes in moisture content by expanding or contracting. Expansive soils can cause structural damage particularly when concrete structures are in direct contact with the soils. Impacts associated with expansive soils at Alternative 1 would be less than significant as findings from the August 2015 BSK Associates preliminary geotechnical investigation at the location of Project Alternative 1 indicate that on-site soils are considered to have a very low expansion potential with an expansion index of zero (0) for 5 of the 8 drilled soil borings. As presented in the BSK Associates January 2011 draft preliminary soil investigation report, soils at the Alternative 2 location generally consist of dense silty sands from the surface to approximately 10 feet bsg. As expansive soils typically consist of fine-grained clay, impacts associated with expansive soils at Alternative 2 would be less than significant. The absence of on-site expansive soils would be verified during the design geotechnical investigation for the project design and construction. If required, appropriate design features to address expansive soils would include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground-treatment processes, direction of surface water and drainage away from foundation soils, and the use of deep foundations such as piers or piles.	Less than Significant	None	Less than Significant
Impact VI-e. The proposed Project Alternatives do not have any components that would include the construction of septic tanks or alternative waste water disposal systems. There is an existing sewer collection system and therefore there would be no impact.	No Impact	None	No Impact
Impact VII-a. and VII-b. Implementation of the proposed Project Alternatives would result in short-term construction and long-term operational emissions of GHGs, however they would not exceed the EKAPCD's 25,000 $MTCO_2e$/year threshold.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact VIII-a. Construction of the proposed Project under either Alternative will require the transport and/or use of small quantities of hazardous materials, including gasoline, diesel, oil, and other similar materials. The hazardous materials anticipated to be involved in the construction process would generally be used in excavation equipment, generators, and other construction equipment and would be contained within vessels engineered for safe storage. Appropriate handling and disposal practices would result in low potential for accidental release of hazardous materials during the construction phases; however, there is the potential for small leaks or spills due to refueling of construction equipment. Standard construction and operational Best Management Practices (BMPs) including the installation of regulated spill containment at each tank will minimize the potential for the release of construction-related fuels and other hazardous materials. These BMPs will also control storm water contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials.	Potentially Significant	MM HAZ-1, HAZ-2, and HAZ-3	Less than Significant
Impact VIII-b. Potential impacts caused by reasonably foreseeable upset or accidents involving hazardous materials is discussed by Impact VIII-a	Potentially Significant	MM HAZ-1, HAZ-2, and HAZ-3	Less than Significant
Impact VIII-c. The wastewater treatment facility proposed to be constructed on the NAWS China Lake Site would be located approximately one-quarter mile from Richmond Elementary School. As discussed in Impact VIII-a, construction and operation of these facilities would involve the transport and use of small amounts of hazardous materials such as gasoline, diesel, and oil. Operation of the wastewater treatment facility would also include the use of two hazardous materials: sodium hypochlorite and alum. Mitigation measures HAZ-1 through HAZ-3 will be implemented to reduce the hazards posed by the use of these chemicals, which will also serve to avoid impacts to students at Richmond Elementary School. Additionally, Alternative 1's proposed facility has been planned adjacent to the preexisting treatment facility, which has also been using these chemicals at a roughly equivalent distance from the school.	Potentially Significant	MM HAZ-1, HAZ-2, and HAZ-3	Less than Significant
Impact VIII-d. The NAWS Site, for either alternative, lies within a cleanup site designated by the California Department of Toxic Substances Control's EnviroStor database. However, NAWS has implemented programs to ensure the health and safety of the Station's employees and that of the local communities. These waste management programs include the ongoing management of hazardous materials and wastes generated at the station, and the cleanup of sites from past waste disposal practices through the ongoing implementation of the Installation Restoration Program. Continued operation of these programs will ensure that any hazards posed will be less than significant.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact VIII-e. The City and NAWS Sites are both located in the vicinity of NAWS China Lake runways. All aircraft safety zones associated with the Station lie within the facility boundaries, therefore no hazards will be posed regarding the City Site. The NAWS China Lake Site is not located within a designated safety zone, indicating that there is minimal risk to any workers that may be involved with construction or operation under either Alternative 1 or 2. There are several airports in the region surrounding Ridgecrest in addition to NAWS China Lake. The closest public airport with commercial service is Inyokern Airport approximately 10 miles west of the City.	Less than Significant	None	Less than Significant
Impact VIII-f. There are no private airstrips within the vicinity of either site under both Alternatives.	No Impact	None	No Impact
Impact VIII-g. The implementation of either Alternative 1 or Alternative 2 is not expected to result in any short-term roadway closures and will not result in any long-term closures. The City Site lies near the boundary of the City of Ridgecrest and the NAWS Site lies within the Air Force station; both locations are sparsely developed surrounding the Project Alternatives' vicinity. Any road or lane closures, if required on a temporary basis, would be scheduled to maintain access to nearby properties and would not conflict with the implementation of any emergency response plan or evacuation.	Less than Significant	None	Less than Significant
Impact VIII-h. Neither the NAWS nor the City Site lies within a designated High or Very High Fire Hazard Severity Zone, as delineated by the CalFire Fire Hazard Severity Maps[1] or San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan[2]. In addition, the majority of the components under either Alternative 1 or 2 would not require on-site workers and no components would involve the construction of residences.	Less than Significant	None	Less than Significant
Impact IX-a. Because of degradation of a high-quality groundwater at the City site, this impact is determined to be potentially significant.	Potentially Significant	MM HYD-1, HYD-2, and HYD-3	Potentially Significant
Impact IX-b. The chief source of natural groundwater recharge in the Indian Wells Valley is from infiltration of surface runoff from the Sierra Nevada, Coso and Argus mountain ranges and subflow from the Rose Valley and the Coso Groundwater Basins. Implementation of either Project Alternative 1 or 2 would result in the development of an undeveloped lot which would result in an increase in impervious surfaces over existing conditions. Additional impervious surfaces would reduce the amount of groundwater recharge for the percolation of rainwater on site, however it is well understood that groundwater recharge from direct precipitation in the Indian Wells Valley is less than significant.	Less than Significant	None	Less than Significant

[1] Cal Fire. Kern County FHSZ Map. http://frap.fire.ca.gov/webdata/maps/kern/fhszl06_1_map.15.pdf. Site Accessed March 2016.
[2] San Bernardino County, 2011. Multi-Jurisdictional Hazard Mitigation Plan Update. file:///G:/Ridgecrest_City%20of-2030/203010B1-Ridgecrest%20City%20Advisor-WWTP/_PLANNING/Background%20Info/Applicable%20Land%20Use%20Plans/Hazard-Mitigation-Plan_San%20Bernardino.pdf. Site Accessed March, 2016.

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IX-c. To reduce or eliminate construction-related water quality effects, future contractors would be required under federal regulations to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans. As a performance standard, General Construction Permits require controls of pollutant discharges that use best available technology (BAT) that is economically achievable, best conventional pollutant control technology (BCT) to reduce pollutants, and any other stringent controls necessary to meet water quality standards. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other nonpoint source runoff. Measures range from source controls, such as reduced surface disturbance, to treatment of polluted runoff, such as detention or retention basins. BMPs to be implemented as part of the General Construction Permit may include, but are not limited to, the following measures: • The employment of temporary erosion and sediment control measures (such as straw mulch and tackifier, silt fences, staked wattles, silt/sediment basins and tarps, check dams, geofabric, and temporary revegetation or other ground cover) to control erosion and sedimentation from disturbed areas. • The protection of drainage facilities in downstream off-site areas from sediment using temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, as needed to stabilize disturbed areas until vegetation becomes established. • The establishment of grass or other vegetative cover or other approved erosion control measure will be established on the construction site as soon as possible after disturbance such that no disturbed surfaces will be left without erosion control measure in place. In addition, construction equipment would have the potential to leak polluting materials, including oil and gasoline. Improper use of fuels, oils, and other construction-related hazardous materials such as pipe sealant may also pose a threat to surface or groundwater quality. However, BMPs will minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. Prior to issuance of a grading permit, the applicant would be required to file a Notice of Intent (NOI) with the RWQCB, thereby providing notification and intent to comply with the State of California general permit. Prior to issuance of the first grading permit, a SWPPP must be completed for on-site and associated off-site construction activities. A copy of the SWPPP outlines the source control and/or treatment control best management practices (BMPs) that will avoid or mitigate runoff pollutants at the construction site to the "maximum extent practicable."			

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IX-d. Both the NAWS China Lake Site and City Site consist of vacant and disturbed land that is relatively flat, with a gentle gradient. As discussed under Impact IX-c, Project construction and operation would not alter the course of a stream or river, as none exists on site.	Less than Significant	None	Less than Significant
Impact IX-e. Stormwater runoff would sheet flow across the paved areas until it is directed by curbs and gutters to a series of inlets. The City of Ridgecrest Engineering Division reviews each development project for drainage conveyance and storage of stormwater. Any necessary on-site improvements would be constructed to the standards and specifications outlined by the City. For these reasons, Project construction and occupation would not cause significant impact by increasing runoff in a manner that would cause flooding either on or off site.	Less than Significant	None	Less than Significant
Impact IX-f. As discussed in Impact IX-a, Provost and Pritchard conducted an Antidegradation Study and Water Quality Impact Assessment for the proposed Ridgecrest WWTP improvements (Appendix E). Beneficial uses of the receiving water will not be impacted by any of the constituents considered, based on the water quality objectives. The poor quality of shallow groundwater means that for all the potential constituents of concern considered, except nitrogen, boron, total dissolved solids, and coliform, the quality of the effluent being percolated is higher than the quality of the groundwater and no degradation will occur. As explained in Impact IX-a, significant and unavoidable impacts will occur at the City site for Nitrogen and at the NAWS golf course for TDS. Mitigation measures **HYD-1**, **HYD-2**, and **HYD-3**, would help to reduce impacts to Nitrogen and effluent TDS concentration.	Potentially Significant	MM HYD-1, HYD-2, HYD-3	Potentially Significant
Impact IX-g. NAWS China Lake and City Sites are located outside of the 100-year floodplain as defined by FEMA. Furthermore, the construction of housing is not proposed by either Alternative 1 or 2. Although the corridor in which the Alternative 2 force main would be installed is partly within the floodplain, it does not involve construction of housing.	Less than Significant	None	Less than Significant
Impact IX-h. NAWS China Lake and City Sites are located outside of the 100-year floodplain as defined by FEMA. Additionally, as neither Alternative 1 nor 2 would place structures within the 100-year floodplain, the Project would not impede or direct flood flows. While Alternative 2 would construct a force main parallel to the existing gravity main, it would be underground and would not affect flood flows. Neither Project site is located within , or the 500-year flood zone. A "special flood hazard area" is defined as an area located within FIRM zones designated as 100-year flood zones.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IX-i. Dam failures are usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake. Dams must be operated and maintained in a safe manner, which is ensured through inspections for safety deficiencies, analyses using current technologies and designs, and taking corrective actions as needed based on current engineering practices. There are no dammed water bodies with the potential to flood the NAWS China Lake Site or City Site. As previously noted, neither Project site is located within the 100-year flood zone; therefore they are not considered to be located in special flood hazard areas.	No Impact	None	No Impact
Impact IX-j. Both the NAWS China Lake Site and City Site are not located near a large body of water (i.e., ocean, lake, or reservoir) to potentially be at risk to seismicity-induced water hazards such as a seiche or a tsunami. The City of Ridgecrest is generally surrounded by mountains, but there are no steep slopes in the vicinity of either site. As both the NAWS China Lake Site and the City Site are relatively flat, there does not appear to be any potential for mudflow.	No Impact	None	No Impact
Impact X-a. Construction and operation of either Alternative 1 and Alternative 2 would occur at two separate sites located at opposite ends of the community and connected by a series of existing and/or proposed underground wastewater pipelines. Neither Alternative proposes to construct any above-ground facilities that are either linear in nature (e.g. a freeway, canal, railroad, or similar) or of such bulk or configuration that could result in permanent street closure or restriction of access. Therefore, the development of either Alternative 1 or Alternative 2 would not physically divide an established community.	No Impact	None	No Impact
Impact X-b. Based on the land use designations, zoning, policies and development standards identified in the Regulatory Setting section for each of the respective documents, the only potential inconsistency identified is that approximately 20 acres of the proposed Project Alternatives may be constructed on land that is designated as Park under City of Ridgecrest General Plan which currently consists of an existing off-road vehicle park. The conceptual site plan as shown in Figures 2-3 and 2-5 for Alternatives 1 and 2 would potentially use these 20-acres designated as Park for effluent disposal ponds. The City shall first make a good faith effort to avoid Park designated areas for the effluent disposal ponds. If avoidance is not feasible, construction of the proposed Project Alternatives' facilities within the Park designation would be inconsistent with the City General Plan unless a General Plan Amendment is adopted to change the designation to Industrial or Institutional, consistent with the proposed wastewater treatment plant.	Potentially Significant	MM LU-1	Less than Significant
Impact X-c. Any potential impacts relating to conservation or natural community conservations plans have been previously addressed under impact assessment IV-f.	No Impact	None	No Impact
Impact XI-a. There are no known mineral resources that would be of value to the region or residents of the state that would be impacted under the proposed Project.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact XI-b. There are no locally known important mineral resource recovery sites identified on the proposed Project sites.	No Impact	None	No Impact
Impact XII-a. The nearest noise-sensitive receptors to the proposed construction area on the NAWS site include Lake Sierra Vista Recreational Park, Richmond Elementary School, and the China Lake Golf Course, all of which are located approximately 0.28 miles from the site. The nearest sensitive receptors to the proposed construction areas include approximately 15 rural residences that are located south side of Upjohn Avenue and east of San Bernardino Boulevard, the closest of which is located less than 100 feet away from the proposed basins on the northeast corner of Upjohn Avenue and San Bernardino Boulevard. The proposed Project is expected to result in noise exposure in the 70 to 85 dB range during construction, which is considered "normally unacceptable" and "clearly unacceptable".	Potentially Significant	MM N-2 & MM N-2	Significant and Unavoidable
Impact XII-b. Based on the location of the NAWS Site in relation to sensitive receptors, vibration will be negligible. Construction activities can produce vibration that may be felt by uses in the vicinity. It is anticipated that the vibration levels caused by a large bulldozer operating on the southern edge of the eastern portion of the City Site would generate approximately 75 Vdb and would likely fall within the 73-80 VdB range for human annoyance for the nearest residence, resulting in a potentially significant impact.	Potentially Significant	MM N-3	Less than Significant
Impact XII-c. Ambient noise levels from the new WWTF under both proposed Project Alternatives would likely reduce the noise levels currently being generated by the existing WWTF. The effluent pipeline and wastewater treatment ponds will generate minimal, if any, ambient noise.	Less than Significant	None	Less than Significant
Impact XII-d. During the construction phase of the proposed Project Alternatives ambient noise levels would slightly increase between the hours of 7:00 am to 6:00 pm, Monday through Friday, as a result of construction activities. However, this noise is consistent with other types of construction, commercial, industrial, military, and vehicle noise throughout the area. Additionally, construction noise would be temporary.	Less than Significant	None	Less than Significant
Impact XII-e. The proposed Project under both alternatives does not involve the placement of housing within two miles of an airport. Additionally, workers at the existing wastewater treatment plant would continue to be exposed to noise from nearby military operations that have already been factored into the environmental baseline.	No Impact	None	No Impact
Impact XII-f. The southern-most wastewater treatment ponds proposed at the City of Ridgecrest Site are located within one mile of the Tera Skypark. The proposed Project Alternatives do not involve the construction of housing. Therefore, the Alternatives would not expose residents to excessive noise levels. Additionally, the Tera Skypark supports only small aircrafts that do not emit excessive noise over long distances.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact XIII-a. Implementation of the proposed Project would provide additional peak capacity within the City's wastewater treatment and disposal system, thus indirectly leading to population growth in the area. However, the purpose of the proposed Project is to accommodate anticipated growth within both the City and at NAWS China Lake. Therefore, growth and development have been previously contemplated and are in fact part of the impetus for the Project.	Less than Significant	None	Less than Significant
Impact XIII-b. Neither site involved in the proposed Project contains housing or is planned for housing development.	No Impact	None	No Impact
Impact XIII-c. Any potential impacts relating to displacement of people or housing have been addressed under Impact XIII-b.	No Impact.	None	No Impact
Impact XIV-a. The proposed Project Alternatives would not result in the development of any new residential, commercial or industrial units that would substantially increase the potential for incidents requiring fire services, police services, or schools. There is a possibility that wastewater treatment ponds could be constructed on an off-road vehicle park, which would adversely affect parks.	Potentially Significant	LU-1	Less than Significant
Impact XV-a. The proposed Project Alternatives would not result in the development of any new residential units that would substantially increase population and leading to the increase use of existing parks or other recreational facilities such that substantial physical deterioration of recreational facilities would occur or be accelerated. Under either alternative, the existing wastewater treatment ponds at the NAWS and City sites would remain in their existing conditions and would continue to serve as recreational opportunities for bird watching. There is potential for ponds to be constructed on an off-road vehicle park on the City Site, which would result in the destruction of the facility.	Potentially Significant	LU-1	Less than Significant
Impact XV-b. Mitigation measure LU-1, discussed in Impact X-a, specifies that the City shall either avoid building on the off-road vehicle site or, if the City fails to avoid building wastewater treatment ponds in the off-road vehicle park, a new park will be constructed in its stead. This park would be subject to CEQA, which would ensure that it would not have significant adverse impacts.	Less than Significant	None	Less than Significant
Impact XVI-a. Construction-related material haul trips and vehicle travel to and from the sites would periodically increase traffic along the roadways surrounding the proposed Project sites. Considering the average type and volume of traffic near the NAWS and City sites that are associated with nearby military, residential, and recreational activities, construction-related material haul trips are considered to be generally consistent. The long-term operation of Alternatives 1 and 2 would result in an increase of approximately 10 employee trips per day and 48 haul truck trips per month. However, it can be reasonably assumed that this level of vehicle traffic would not pose an impact.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
XVI-b. The City of Ridgecrest does not have level of service thresholds for construction-related traffic impacts. Due to their short-term nature, construction traffic effects for typical construction projects are considered temporary and do not require mitigation. The long-term operation of Alternative 1 or Alternative 2 would increase the existing employee vehicle trip baseline by ten trips per day and may result in additional incidental vehicle trips associated with maintenance activities at both the City and San Bernardino site. However, this level of vehicle traffic would be insignificant.	No Impact	None	No Impact
Impact XVI-c. According to the China Lake AICUZ, both the Alternative 1 Project sites and the Alternative 2 Project sites are not located within an Accident Potential Zone. Additionally, according to the Kern County ALUCP, the project sites are not located within an airport land use zone. Finally, the height of the proposed facilities would not present the potential to interfere with air traffic.	No Impact	None	No Impact
Impact XVI-d. Neither alternative involves the alternation of any existing public roadway travel lanes nor do they involve the construction of any new public roadways. However, both alternatives would involve minor construction activities within the Knox Road, San Bernardino Boulevard and Bowman Road rights-of-way associated with the construction of driveway approaches for onsite access roads to the proposed wastewater treatment ponds and new wastewater treatment facilities at the Project Alternatives' sites.	Potentially Significant	TR-1 and TR-2	Less than Significant
Impact XVI-e. All impacts to emergency access would be mitigated by TR-1 and TR-2, discussed in Impact XVI-d.	Potentially Significant	TR-1 and TR-2	Less than Significant
Impact XVI-f. According to the City of Ridgecrest General Plan Circulation Element's Non-motorized Transportation Plan map, there are no existing or planned alternative transportation facilities within the immediate area of the proposed Project Alternatives.	No Impact	None	No Impact
Impact XVII-a. Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. While neither alternative would exceed the permitted capacity of the existing WWTP, a new WDR Board Order would need to be issued for the new WWTP facilities, including the additional 56 wet acres of wastewater treatment ponds. Additionally, as the City continues its efforts to recycle treated wastewater, additional WDR Orders may be required to discharge water on new sites. The proposed Alternatives would be designed to meet the Lahontan Regional Water Quality Control Board waste discharge.	Less than Significant	None	Less than Significant
Impact XVII-b. The existing WWTP has a permitted capacity of 3.6 mgd by the Lahontan Regional Water Quality Control Board (Regional Board). Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. Potential impacts relating to the construction and operation of the proposed Project under both alternatives has been discussed throughout this document. While mitigation is sufficient for many impacts, there are impacts where feasible mitigation could not be identified.	Significant and Unavoidable	None	Significant and Unavoidable

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact XVII-c. Both Alternatives would off-set the existing WWTP, resulting in minor net increases to impervious surfaces. The proposed new wastewater treatment ponds are intended to allow treated effluent water to percolate and/or evaporate. Minor interior driveways would likely be constructed to allow access to the ponds and other facilities. However, it is assumed that they will be surfaced with gravel. The proposed Project would not trigger a need for the construction of new storm water drainage facilities or the expansion of existing facilities.	No Impact	None	No Impact
Impact XVII-d. Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. The updated facilities would incorporate new technology that would increase water efficiency.	No Impact	None	No Impact
Impact XVII-e. The City of Ridgecrest is the wastewater treatment provider and is the proposed Project Alternatives' proponent. Alternatives 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant in order to increase efficiency and improve service.	No Impact	None	No Impact
Impact XVII-f. Alternatives 1 and 2 would generate solid waste during the construction phase. The Ridgecrest-Inyokern Sanitary Landfill has a maximum capacity is at 5,992,700 cubic yards and a remaining capacity of 5,000,898 cubic yards. Therefore, it sufficient capacity to accommodate the Alternatives' solid waste disposal needs.	Less than Significant	None	No Impact
Impact XVII-g. The City is required to follow federal, state and local laws related to the collection and disposal of solid waste. All solid waste generated as a result of construction would be disposed of at the Ridgecrest-Inyokern Sanitary Landfill.	No Impact	None	No Impact

ES.6 Summary of Impact Assessment – Alternative 2

This DEIR has identified potentially significant adverse environmental impacts requiring mitigation measures in the areas of Aesthetics, Biological Resources, Prehistoric Cultural Resources (no impacts were identified in the area of Historical Resources), Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise and Vibration, and Utilities and Service Systems. All other environmental topics were determined to have less than significant or no impacts. Table 5-1 below provides a summary of the proposed Alternative 2 Project's potential environmental impacts, each impact's level of potential significance as a result of implementation of the Alternative 1 Project, and for potentially significant adverse impacts, mitigation measures to avoid or reduce the impact to a less than significant level or to the greatest degree feasible. Following identification of mitigation measures, the DEIR indicates the status of the resulting impact with mitigation measures incorporated. The identified levels of significance assume implementation of all permit and approval requirements of Federal, State and local law and regulations applicable to the Project, standard conditions of approval, and construction best management practices.

Table ES 2. Summary of Environmental Impacts of Alternative 2

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact I-a. The alternatives would result in approximately 56 acres of wastewater treatment ponds at the City Site and would impact the cluster of residences that are located east of San Bernardino Boulevard and south of Bowman Road. To these residents, this conversion of land may be considered a substantial change to their environment.	Potentially Significant	MM AES-1 and AES-2	Less than Significant
Impact I-b. The Alternative 1 Project sites (as previously identified) are not located in the immediate vicinity of any California scenic highways, as defined by the State of California Department of Transportation (Caltrans). According to the California Scenic Highway Mapping System, the nearest officially designated state scenic highway is State Route 190 located within the Death Valley National Park, approximately 44 miles north of the site. It should be noted that this section of highway is also designated as a National Scenic Byway.	No impact	None	No Impact
Impact I-c. The alternatives would result in approximately 56 acres of wastewater treatment ponds at the City Site and would impact the cluster of residences that are located east of San Bernardino Boulevard and south of Bowman Road. To these residents, this conversion of land may be considered a substantial change to their environment.	Potentially Significant	MM AES-1 and AES-2	Less than Significant
Impact I-d. The proposed Alternatives would require additional lighting for safety and security purposes.	Potentially Significant	MM AES-2	Less than Significant
Impact II-a. There is no land involved in the two Alternatives designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance as shown on the Farmland Mapping and Monitoring Program (FMMP).	No Impact	None	No Impact
Impact II-b. There are no agricultural zones onsite or within the immediate vicinity of the Alternative 1 or 2 Project sites.	No Impact	None	No Impact
Impact II-c. There are no forest lands or timberland zones onsite or within the immediate vicinity of the Alternative 1 or 2 Project sites.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact II-d. There are no existing forest lands on the Alternative 1 or 2 Project sites.	No Impact	None	No Impact
Impact II-e. Any potential changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use have been discussed in II-a through II-d.	No Impact	None	No Impact
Impact III-a. Project Alternatives would not result in significant short-term or long-term increases of criteria air pollutants that would exceed applicable thresholds.	Less than Significant	None	Less than Significant
Impact III-b. As discussed in Impacts III-c, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a potentially significant impact.	Potentially Significant	MM AQ-1	Less than Significant
Impact III-c. During the initial year of construction, the proposed Project Alternatives would generate maximum uncontrolled annual emissions of approximately 0.4 tons/year of ROG, 4.7 tons/year of NO_x, 3.2 tons/year of CO, 0.7 tons/year of PM_{10}, and 0.4 tons/year of $PM_{2.5}$. During the second year of construction, the proposed Project Alternatives would generate maximum uncontrolled annual emissions of approximately 0.2 tons/year of ROG, 1.7 tons/year of NO_x, 1.3 tons/year of CO, 0.1 tons/year of PM_{10} and $PM_{2.5}$. Daily indirect construction-generated emissions of ROG and NO_X would be less than one pound per day. Construction-generated emissions would not exceed applicable EKAPCD significance thresholds. However, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses.	Potentially Significant	MM AQ-1	Less than Significant
Impact III-d. . The Alternatives would not result in a substantial increase in vehicle trips that would affect nearby intersection operations.	Less than Significant	None	Less than Significant
Impact III-e. Under Alternative 1, the nearest residences would be located approximately 1,750 feet from the proposed treatment facility. Under Alternative 2, the nearest residences would be located approximately 960 feet from the treatment facility. Given that residential land uses are located within one mile of the proposed treatment plants and the proposed Project, the odor-generating potential of the Project impact sensitive receptors.	Potentially Significant	MM AQ-2	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IV-a. Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing.	Potentially Significant	MM BIO-1, BIO-2, BIO-3, BIO-4, and BIO-5	Less than Significant
Impact IV-b. No riparian or other sensitive habitats occur on Alternative 1 or Alternative 2 sites.	No Impact	None	No Impact
Impact IV-c. Project Alternative construction may result in the deposition of sediment or pollutants into portions of this drainage. In addition, the Project Alternative 2 may result in the placement of fill or the deposition of sediment in the onsite ephemeral drainage, portions of which appear to meet the definition of a water of the state.	Potentially Significant	MM BIO-6	Less than Significant
Impact IV-d. Because no part of the sites serves as a fish and wildlife movement corridor, the Project Alternatives will have no effect on regional fish or wildlife movements at Alternative 1 or at Alternative 2.	No Impact	None	No Impact
Impact IV-e. There are no tree preservation ordinances that would be in conflict with either Alternative 1 or Alternative 2.	No Impact	None	No Impact
Impact IV-f. . Both Alternative 1 and Alternative 2 will comply with the provisions of the 2030 City of Ridgecrest General Plan and 2007 County of San Bernardino General Plan policies (as amended in 2014) related to biological resources. These policies can be found in Attachment D of Appendix D. No habitat conservation plans are in effect for the Project Alternatives areas.	No Impact	None	No Impact
Impact V-a. The pedestrian survey identified four previously unrecorded isolated resources; this included one historical glass fragment, two historic tin cans, and two spatially separate tin cans. Isolated artifacts are not eligible for listing on the CRHR because they lack association and context with other archaeological materials, therefore the presence of the four isolated resources will pose no threat of impact.	Potentially Significant	MM CR-1	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact V-b. Refer to Impact V-a.	Potentially Significant	MM CR-1	Less than Significant
Impact V-c. The records search conducted with the CHRIS did not identify any known paleontological resources within the Project Alternatives' area, nor are there any known geologic features in the Project area. Project construction will not be expected to disturb any paleontological resources not previously disturbed.	Potentially Significant	MM CR-1	Less than Significant
Impact V-d. Although there is no indication that the Project will disturb any human remains, in the event that human remains are encountered the following mitigation measure shall be followed.	Potentially Significant	MM CR-2	Less than Significant
Impact VI-a. It is unlikely that an earthquake would result in surface rupture at either Project Alternative location.	Less than Significant	None	Less than Significant
Impact VI-a-i. The closest Fault-Rupture Hazard Zone is the Little Lake Fault Zone, located approximately 4.2 miles northwest of the Alternative 1 location. Alternative 2 is approximately 3.5 miles south-southeast of Alternative 1.	Less than Significant	None	Less than Significant
Impact VI-a-ii. All proposed structures must be designed to comply with the California Building Code, which is considered to be a standard safeguard against major structural failures and loss of life.	Less than Significant	None	Less than Significant
Impact VI-a-iii. Based on regional background information the potential for liquefaction is considered less than significant due to the soil types underlying the Alternative 1 and 2 locations and as depth to groundwater is greater than 50 feet below ground surface.	Less than Significant	None	Less than Significant
Impact VI-a-iv. The City of Ridgecrest has not been included in the SHMA and as such does not require any further investigation for liquefaction, amplified shaking or earthquake-induced landslide hazard zones.	Less than Significant	None	Less than Significant
Impact VI-b. Surface soil erosion and loss of topsoil could occur from soil disturbances associated with construction activities at Alternative 1 and Alternative 2 locations.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact VI-c. Excavation, grading, and fill operations associated with construction could alter existing slope profiles making them unstable as a result of over-excavation of slope material, steepening of the slope, or increased loading. However, destabilization of natural or constructed slopes is unlikely to occur as surface topography at both Project Alternative locations is relatively flat. Additionally, standard engineering design features and construction procedures would be implemented to maintain stable slopes and excavations during construction.	Less than Significant	None	Less than Significant
Impact VI-d. Shrink-swell or expansive soil behavior is a condition in which soil reacts to changes in moisture content by expanding or contracting. Expansive soils can cause structural damage particularly when concrete structures are in direct contact with the soils. Impacts associated with expansive soils at Alternative 1 would be less than significant as findings from the August 2015 BSK Associates preliminary geotechnical investigation at the location of Project Alternative 1 indicate that on-site soils are considered to have a very low expansion potential with an expansion index of zero (0) for 5 of the 8 drilled soil borings. As presented in the BSK Associates January 2011 draft preliminary soil investigation report, soils at the Alternative 2 location generally consist of dense silty sands from the surface to approximately 10 feet bsg. As expansive soils typically consist of fine-grained clay, impacts associated with expansive soils at Alternative 2 would be less than significant. The absence of on-site expansive soils would be verified during the design geotechnical investigation for the project design and construction. If required, appropriate design features to address expansive soils would include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground-treatment processes, direction of surface water and drainage away from foundation soils, and the use of deep foundations such as piers or piles.	Less than Significant	None	Less than Significant
Impact VI-e. The proposed Project Alternatives do not have any components that would include the construction of septic tanks or alternative waste water disposal systems. There is an existing sewer collection system and therefore there would be no impact.	No Impact	None	No Impact
Impact VII-a. and VII-b. Implementation of the proposed Project Alternatives would result in short-term construction and long-term operational emissions of GHGs, however they would not exceed the EKAPCD's 25,000 $MTCO_2e$/year threshold.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact VIII-a. Construction of the proposed Project under either Alternative will require the transport and/or use of small quantities of hazardous materials, including gasoline, diesel, oil, and other similar materials. The hazardous materials anticipated to be involved in the construction process would generally be used in excavation equipment, generators, and other construction equipment and would be contained within vessels engineered for safe storage. Appropriate handling and disposal practices would result in low potential for accidental release of hazardous materials during the construction phases; however, there is the potential for small leaks or spills due to refueling of construction equipment. Standard construction and operational Best Management Practices (BMPs) including the installation of regulated spill containment at each tank will minimize the potential for the release of construction-related fuels and other hazardous materials. These BMPs will also control storm water contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials.	Potentially Significant	MM HAZ-1, HAZ-2, and HAZ-3	Less than Significant
Impact VIII-b. Potential impacts caused by reasonably foreseeable upset or accidents involving hazardous materials is discussed by Impact VIII-a	Potentially Significant	MM HAZ-1, HAZ-2, and HAZ-3	Less than Significant
Impact VIII-c. Under Alternative 2, transport and use of small amounts of hazardous materials would occur within one-quarter mile of Richmond Elementary School. This would be limited to gasoline, diesel, oil, and similar materials.	Potentially Significant	MM HAZ-1, HAZ-2, and HAZ-3	Less than Significant
Impact VIII-d. The NAWS Site, for either alternative, lies within a cleanup site designated by the California Department of Toxic Substances Control's EnviroStor database. However, NAWS has implemented programs to ensure the health and safety of the Station's employees and that of the local communities. These waste management programs include the ongoing management of hazardous materials and wastes generated at the station, and the cleanup of sites from past waste disposal practices through the ongoing implementation of the Installation Restoration Program. Continued operation of these programs will ensure that any hazards posed will be less than significant.	Less than Significant	None	Less than Significant
Impact VIII-e. The City and NAWS Sites are both located in the vicinity of NAWS China Lake runways. All aircraft safety zones associated with the Station lie within the facility boundaries, therefore no hazards will be posed regarding the City Site. The NAWS China Lake Site is not located within a designated safety zone, indicating that there is minimal risk to any workers that may be involved with construction or operation under either Alternative 1 or 2. There are several airports in the region surrounding Ridgecrest in addition to NAWS China Lake. The closest public airport with commercial service is Inyokern Airport approximately 10 miles west of the City.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact VIII-f. There are no private airstrips within the vicinity of either site under both Alternatives.	No Impact	None	No Impact
Impact VIII-g. The implementation of either Alternative 1 or Alternative 2 is not expected to result in any short-term roadway closures and will not result in any long-term closures. The City Site lies near the boundary of the City of Ridgecrest and the NAWS Site lies within the Air Force station; both locations are sparsely developed surrounding the Project Alternatives' vicinity. Any road or lane closures, if required on a temporary basis, would be scheduled to maintain access to nearby properties and would not conflict with the implementation of any emergency response plan or evacuation.	Less than Significant	None	Less than Significant
Impact VIII-h. Neither the NAWS nor the City Site lies within a designated High or Very High Fire Hazard Severity Zone, as delineated by the CalFire Fire Hazard Severity Maps[3] or San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan[4]. In addition, the majority of the components under either Alternative 1 or 2 would not require on-site workers and no components would involve the construction of residences.	Less than Significant	None	Less than Significant
Impact IX-a. Because of degradation of a high-quality groundwater at the City site, this impact is determined to be potentially significant.	Potentially Significant	MM HYD-1, HYD-2, and HYD-3	Potentially Significant
Impact IX-b. The chief source of natural groundwater recharge in the Indian Wells Valley is from infiltration of surface runoff from the Sierra Nevada, Coso and Argus mountain ranges and subflow from the Rose Valley and the Coso Groundwater Basins. Implementation of either Project Alternative 1 or 2 would result in the development of an undeveloped lot which would result in an increase in impervious surfaces over existing conditions. Additional impervious surfaces would reduce the amount of groundwater recharge for the percolation of rainwater on site, however it is well understood that groundwater recharge from direct precipitation in the Indian Wells Valley is less than significant.	Less than Significant	None	Less than Significant

[3] Cal Fire. Kern County FHSZ Map. http://frap.fire.ca.gov/webdata/maps/kern/fhszl06_1_map.15.pdf. Site Accessed March 2016.
[4] San Bernardino County, 2011. Multi-Jurisdictional Hazard Mitigation Plan Update. file:///G:/Ridgecrest_City%20of-2030/203010B1-Ridgecrest%20City%20Advisor-WWTP/_PLANNING/Background%20Info/Applicable%20Land%20Use%20Plans/Hazard-Mitigation-Plan_San%20Bernardino.pdf. Site Accessed March, 2016.

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IX-c. To reduce or eliminate construction-related water quality effects, future contractors would be required under federal regulations to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans. As a performance standard, General Construction Permits require controls of pollutant discharges that use best available technology (BAT) that is economically achievable, best conventional pollutant control technology (BCT) to reduce pollutants, and any other stringent controls necessary to meet water quality standards. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other nonpoint source runoff. Measures range from source controls, such as reduced surface disturbance, to treatment of polluted runoff, such as detention or retention basins. BMPs to be implemented as part of the General Construction Permit may include, but are not limited to, the following measures: The employment of temporary erosion and sediment control measures (such as straw mulch and tackifier, silt fences, staked wattles, silt/sediment basins and tarps, check dams, geofabric, and temporary revegetation or other ground cover) to control erosion and sedimentation from disturbed areas. The protection of drainage facilities in downstream off-site areas from sediment using temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, as needed to stabilize disturbed areas until vegetation becomes established. The establishment of grass or other vegetative cover or other approved erosion control measure will be established on the construction site as soon as possible after disturbance such that no disturbed surfaces will be left without erosion control measure in place. In addition, construction equipment would have the potential to leak polluting materials, including oil and gasoline. Improper use of fuels, oils, and other construction-related hazardous materials such as pipe sealant may also pose a threat to surface or groundwater quality. However, BMPs will minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. Prior to issuance of a grading permit, the applicant would be required to file a Notice of Intent (NOI) with the RWQCB, thereby providing notification and intent to comply with the State of California general permit. Prior to issuance of the first grading permit, a SWPPP must be completed for on-site and associated off-site construction activities. A copy of the SWPPP outlines the source control and/or treatment control best management practices (BMPs) that will avoid or mitigate runoff pollutants at the construction site to the "maximum extent practicable."	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IX-d. Both the NAWS China Lake Site and City Site consist of vacant and disturbed land that is relatively flat, with a gentle gradient. As discussed under Impact IX-c, Project construction and operation would not alter the course of a stream or river, as none exists on site.	Less than Significant	None	Less than Significant
Impact IX-e. Stormwater runoff would sheet flow across the paved areas until it is directed by curbs and gutters to a series of inlets. The City of Ridgecrest Engineering Division reviews each development project for drainage conveyance and storage of stormwater. Any necessary on-site improvements would be constructed to the standards and specifications outlined by the City. For these reasons, Project construction and occupation would not cause significant impact by increasing runoff in a manner that would cause flooding either on or off site.	Less than Significant	None	Less than Significant
Impact IX-f. As discussed in Impact IX-a, Provost and Pritchard conducted an Antidegradation Study and Water Quality Impact Assessment for the proposed Ridgecrest WWTP improvements (Appendix E). Beneficial uses of the receiving water will not be impacted by any of the constituents considered, based on the water quality objectives. The poor quality of shallow groundwater means that for all the potential constituents of concern considered, except nitrogen, boron, total dissolved solids, and coliform, the quality of the effluent being percolated is higher than the quality of the groundwater and no degradation will occur. As explained in Impact IX-a, significant and unavoidable impacts will occur at the City site for Nitrogen and at the NAWS golf course for TDS. Mitigation measures **HYD-1**, **HYD-2**, and **HYD-3**, would help to reduce impacts to Nitrogen and effluent TDS concentration.	Potentially Significant	MM HYD-1, HYD-2, HYD-3	Potentially Significant
Impact IX-g. NAWS China Lake and City Sites are located outside of the 100-year floodplain as defined by FEMA. Furthermore, the construction of housing is not proposed by either Alternative 1 or 2. Although the corridor in which the Alternative 2 force main would be installed is partly within the floodplain, it does not involve construction of housing.	Less than Significant	None	Less than Significant
Impact IX-h. NAWS China Lake and City Sites are located outside of the 100-year floodplain as defined by FEMA. Additionally, as neither Alternative 1 nor 2 would place structures within the 100-year floodplain, the Project would not impede or direct flood flows. While Alternative 2 would construct a force main parallel to the existing gravity main, it would be underground and would not affect flood flows. Neither Project site is located within , or the 500-year flood zone. A "special flood hazard area" is defined as an area located within FIRM zones designated as 100-year flood zones.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact IX-i. Dam failures are usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake. Dams must be operated and maintained in a safe manner, which is ensured through inspections for safety deficiencies, analyses using current technologies and designs, and taking corrective actions as needed based on current engineering practices. There are no dammed water bodies with the potential to flood the NAWS China Lake Site or City Site. As previously noted, neither Project site is located within the 100-year flood zone; therefore they are not considered to be located in special flood hazard areas.	No Impact	None	No Impact
Impact IX-j. Both the NAWS China Lake Site and City Site are not located near a large body of water (i.e., ocean, lake, or reservoir) to potentially be at risk to seismicity-induced water hazards such as a seiche or a tsunami. The City of Ridgecrest is generally surrounded by mountains, but there are no steep slopes in the vicinity of either site. As both the NAWS China Lake Site and the City Site are relatively flat, there does not appear to be any potential for mudflow.	No Impact	None	No Impact
Impact X-a. Construction and operation of either Alternative 1 and Alternative 2 would occur at two separate sites located at opposite ends of the community and connected by a series of existing and/or proposed underground wastewater pipelines. Neither Alternative proposes to construct any above-ground facilities that are either linear in nature (e.g. a freeway, canal, railroad, or similar) or of such bulk or configuration that could result in permanent street closure or restriction of access. Therefore, the development of either Alternative 1 or Alternative 2 would not physically divide an established community.	No Impact	None	No Impact
Impact X-b. Based on the land use designations, zoning, policies and development standards identified in the Regulatory Setting section for each of the respective documents, the only potential inconsistency identified is that approximately 20 acres of the proposed Project Alternatives may be constructed on land that is designated as Park under City of Ridgecrest General Plan which currently consists of an existing off-road vehicle park. The conceptual site plan as shown in Figures 2-3 and 2-5 for Alternatives 1 and 2 would potentially use these 20-acres designated as Park for effluent disposal ponds. The City shall first make a good faith effort to avoid Park designated areas for the effluent disposal ponds. If avoidance is not feasible, construction of the proposed Project Alternatives' facilities within the Park designation would be inconsistent with the City General Plan unless a General Plan Amendment is adopted to change the designation to Industrial or Institutional, consistent with the proposed wastewater treatment plant.	Potentially Significant	MM LU-1	Less than Significant
Impact X-c. Any potential impacts relating to conservation or natural community conservations plans have been previously addressed under impact assessment IV-f.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact XI-a. There are no known mineral resources that would be of value to the region or residents of the state that would be impacted under the proposed Project.	No Impact	None	No Impact
Impact XI-b. There are no locally known important mineral resource recovery sites identified on the proposed Project sites.	No Impact	None	No Impact
Impact XII-a. The nearest noise-sensitive receptors to the proposed construction area on the NAWS site include Lake Sierra Vista Recreational Park, Richmond Elementary School, and the China Lake Golf Course, all of which are located approximately 0.28 miles from the site. The nearest sensitive receptors to the proposed construction areas include approximately 15 rural residences that are located south side of Upjohn Avenue and east of San Bernardino Boulevard, the closest of which is located less than 100 feet away from the proposed basins on the northeast corner of Upjohn Avenue and San Bernardino Boulevard. The proposed Project is expected to result in noise exposure in the 70 to 85 dB range during construction, which is considered "normally unacceptable" and "clearly unacceptable".	Potentially Significant	MM N-2 & MM N-2	Significant and Unavoidable
Impact XII-b. Based on the location of the NAWS Site in relation to sensitive receptors, vibration will be negligible. Construction activities can produce vibration that may be felt by uses in the vicinity. It is anticipated that the vibration levels caused by a large bulldozer operating on the southern edge of the eastern portion of the City Site would generate approximately 75 Vdb and would likely fall within the 73-80 VdB range for human annoyance for the nearest residence, resulting in a potentially significant impact.	Potentially Significant	MM N-3	Less than Significant
Impact XII-c. Ambient noise levels from the new WWTF under both proposed Project Alternatives would likely reduce the noise levels currently being generated by the existing WWTF. The effluent pipeline and wastewater treatment ponds will generate minimal, if any, ambient noise.	Less than Significant	None	Less than Significant
Impact XII-d. During the construction phase of the proposed Project Alternatives ambient noise levels would slightly increase between the hours of 7:00 am to 6:00 pm, Monday through Friday, as a result of construction activities. However, this noise is consistent with other types of construction, commercial, industrial, military, and vehicle noise throughout the area. Additionally, construction noise would be temporary.	Less than Significant	None	Less than Significant
Impact XII-e. The proposed Project under both alternatives does not involve the placement of housing within two miles of an airport. Additionally, workers at the existing wastewater treatment plant would continue to be exposed to noise from nearby military operations that have already been factored into the environmental baseline.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact XII-f. The southern-most wastewater treatment ponds proposed at the City of Ridgecrest Site are located within one mile of the Tera Skypark. The proposed Project Alternatives do not involve the construction of housing. Therefore, the Alternatives would not expose residents to excessive noise levels. Additionally, the Tera Skypark supports only small aircrafts that do not emit excessive noise over long distances.	No Impact	None	No Impact
Impact XIII-a. Implementation of the proposed Project would provide additional peak capacity within the City's wastewater treatment and disposal system, thus indirectly leading to population growth in the area. However, the purpose of the proposed Project is to accommodate anticipated growth within both the City and at NAWS China Lake. Therefore, growth and development have been previously contemplated and are in fact part of the impetus for the Project.	Less than Significant	None	Less than Significant
Impact XIII-b. Neither site involved in the proposed Project contains housing or is planned for housing development.	No Impact	None	No Impact
Impact XIII-c. Any potential impacts relating to displacement of people or housing have been addressed under Impact XIII-b.	No Impact.	None	No Impact
Impact XIV-a. The proposed Project Alternatives would not result in the development of any new residential, commercial or industrial units that would substantially increase the potential for incidents requiring fire services, police services, or schools. There is a possibility that wastewater treatment ponds could be constructed on an off-road vehicle park, which would adversely affect parks.	Potentially Significant	LU-1	Less than Significant
Impact XV-a. The proposed Project Alternatives would not result in the development of any new residential units that would substantially increase population and leading to the increase use of existing parks or other recreational facilities such that substantial physical deterioration of recreational facilities would occur or be accelerated. Under either alternative, the existing wastewater treatment ponds at the NAWS and City sites would remain in their existing conditions and would continue to serve as recreational opportunities for bird watching. There is potential for ponds to be constructed on an off-road vehicle park on the City Site, which would result in the destruction of the facility.	Potentially Significant	LU-1	Less than Significant
Impact XV-b. Mitigation measure LU-1, discussed in Impact X-a, specifies that the City shall either avoid building on the off-road vehicle site or, if the City fails to avoid building wastewater treatment ponds in the off-road vehicle park, a new park will be constructed in its stead. This park would be subject to CEQA, which would ensure that it would not have significant adverse impacts.	Less than Significant	None	Less than Significant

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact XVI-a. Construction-related material haul trips and vehicle travel to and from the sites would periodically increase traffic along the roadways surrounding the proposed Project sites. Considering the average type and volume of traffic near the NAWS and City sites that are associated with nearby military, residential, and recreational activities, construction-related material haul trips are considered to be generally consistent. The long-term operation of Alternatives 1 and 2 would result in an increase of approximately 10 employee trips per day and 48 haul truck trips per month. However, it can be reasonably assumed that this level of vehicle traffic would not pose an impact.	No Impact	None	No Impact
XVI-b. The City of Ridgecrest does not have level of service thresholds for construction-related traffic impacts. Due to their short-term nature, construction traffic effects for typical construction projects are considered temporary and do not require mitigation. The long-term operation of Alternative 1 or Alternative 2 would increase the existing employee vehicle trip baseline by ten trips per day and may result in additional incidental vehicle trips associated with maintenance activities at both the City and San Bernardino site. However, this level of vehicle traffic would be insignificant.	No Impact	None	No Impact
Impact XVI-c. According to the China Lake AICUZ, both the Alternative 1 Project sites and the Alternative 2 Project sites are not located within an Accident Potential Zone. Additionally, according to the Kern County ALUCP, the project sites are not located within an airport land use zone. Finally, the height of the proposed facilities would not present the potential to interfere with air traffic.	No Impact	None	No Impact
Impact XVI-d. Neither alternative involves the alternation of any existing public roadway travel lanes nor do they involve the construction of any new public roadways. However, both alternatives would involve minor construction activities within the Knox Road, San Bernardino Boulevard and Bowman Road rights-of-way associated with the construction of driveway approaches for onsite access roads to the proposed wastewater treatment ponds and new wastewater treatment facilities at the Project Alternatives' sites.	Potentially Significant	TR-1 and TR-2	Less than Significant
Impact XVI-e. All impacts to emergency access would be mitigated by TR-1 and TR-2, discussed in Impact XVI-d.	Potentially Significant	TR-1 and TR-2	Less than Significant
Impact XVI-f. According to the City of Ridgecrest General Plan Circulation Element's Non-motorized Transportation Plan map, there are no existing or planned alternative transportation facilities within the immediate area of the proposed Project Alternatives.	No Impact	None	No Impact

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance Mitigation
Impact XVII-a. Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. While neither alternative would exceed the permitted capacity of the existing WWTP, a new WDR Board Order would need to be issued for the new WWTP facilities, including the additional 56 wet acres of wastewater treatment ponds. Additionally, as the City continues its efforts to recycle treated wastewater, additional WDR Orders may be required to discharge water on new sites. The proposed Alternatives would be designed to meet the Lahontan Regional Water Quality Control Board waste discharge.	Less than Significant	None	Less than Significant
Impact XVII-b. The existing WWTP has a permitted capacity of 3.6 mgd by the Lahontan Regional Water Quality Control Board (Regional Board). Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. Potential impacts relating to the construction and operation of the proposed Project under both alternatives has been discussed throughout this document. While mitigation is sufficient for many impacts, there are impacts where feasible mitigation could not be identified.	Significant and Unavoidable	None	Significant and Unavoidable
Impact XVII-c. Both Alternatives would off-set the existing WWTP, resulting in minor net increases to impervious surfaces. The proposed new wastewater treatment ponds are intended to allow treated effluent water to percolate and/or evaporate. Minor interior driveways would likely be constructed to allow access to the ponds and other facilities. However, it is assumed that they will be surfaced with gravel. The proposed Project would not trigger a need for the construction of new storm water drainage facilities or the expansion of existing facilities.	No Impact	None	No Impact
Impact XVII-d. Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. The updated facilities would incorporate new technology that would increase water efficiency.	No Impact	None	No Impact
Impact XVII-e. The City of Ridgecrest is the wastewater treatment provider and is the proposed Project Alternatives' proponent. Alternatives 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant in order to increase efficiency and improve service.	No Impact	None	No Impact
Impact XVII-f. Alternatives 1 and 2 would generate solid waste during the construction phase. The Ridgecrest-Inyokern Sanitary Landfill has a maximum capacity is at 5,992,700 cubic yards and a remaining capacity of 5,000,898 cubic yards. Therefore, it sufficient capacity to accommodate the Alternatives' solid waste disposal needs.	Less than Significant	None	No Impact
Impact XVII-g. The City is required to follow federal, state and local laws related to the collection and disposal of solid waste. All solid waste generated as a result of construction would be disposed of at the Ridgecrest-Inyokern Sanitary Landfill.	No Impact	None	No Impact

1 Introduction

1.1 Purpose of the EIR

This Draft Environmental Impact Report (Draft EIR) has been prepared by the City of Ridgecrest as the designated Lead Agency in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the proposed Project Alternatives. This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.).

The purpose of this Draft EIR is to inform decision-makers, representatives of trustee and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the proposed Project Alternatives. This Draft EIR describes potential impacts relating to a wide variety of environmental issues and measures by which these impacts can be avoided or mitigated to less than significant. Where an impact is not able to be mitigated to a less than significant level, this EIR will identify it as a "Significant Unavoidable" impact. If the Lead Agency (City) decides to approve a Project Alternative despite Significant Unavoidable impacts, it must also adopt a Statement of Overriding Considerations stating the reasons why the benefits of the Project outweigh its potential significant unavoidable adverse environmental impacts.

As stated in CEQA Guidelines Section 15123(a), "an environmental impact report (EIR) shall contain a brief summary of the proposed actions and its [*sic*] consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the Guidelines, this Draft EIR includes (1) a summary description of the proposed project; (2) a discussion of the areas of controversy associated with the project; (3) identification of the alternatives evaluated and the environmentally superior alternative; and (4) a synopsis of environmental impacts and recommended mitigation measures.

1.2 Content of the EIR

The City of Ridgecrest has prepared this Environmental Impact Report (EIR) for its proposed New Wastewater Treatment Plant (WWTP) in compliance with CEQA. This EIR fully evaluates the potential environmental impacts associated with the two Project Alternatives (as further described within) for a replacement wastewater treatment plant, as well as a No Project Alternative.

This project-level EIR will fully analyze potential direct, indirect, and cumulative environmental impacts associated with the Proposed Alternatives. Specific areas of analysis will include all resource categories included in Appendix G to the California Environmental Quality Act (CEQA) Guidelines, as follows: aesthetics, agricultural and forest resources, air quality, greenhouse gases and global climate change, biological resources, cultural resources, geology and soils, hazards, hydrology and water quality, land use, energy and mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems. Additionally, a consideration of cumulative impacts is included.

1.3 Organization of the EIR

- Executive Summary: Summarizes this Draft Environmental Impact Report.
- Chapter 1 – Introduction: Explains the purpose of an EIR, its content, environmental controversies to be resolved, and the environmental review process.

- Chapter 2 – Proposed Project Alternatives: Includes a detailed description of the proposed Project Alternatives.
- Chapter 3 – Impact Analysis: Includes the analysis of each of each Alternative of the topical areas consistent with the format of Appendix G Checklist of the CEQA Guidelines.
- Chapter 4 – Cumulative Impact Summary: Summarizes the cumulative impacts associated with each of the proposed Project Alternatives as identified in Chapter 3.
- Chapter 5 – Significant and Unavoidable Impacts: Describes any potential adverse environmental impacts that cannot be avoided or reduced to less than significant, or that are significant and irreversible as a result of the construction and operation of the Project.
- Chapter 6 – Mitigation Monitoring & Reporting Program: Provides a mitigation monitoring and reporting program for both Alternatives 1 and 2 that summarizes their respective significant environmental issues, mitigation measures, and the agency or agencies responsible for monitoring and reporting on the implementation of the mitigation measures.
- Appendices – Following the text of this Draft EIR, several appendices have been included as supporting or technical reference material:
    A. Notice of Preparation of EIR and Comments Received
    B. Air Quality & Greenhouse Gas Impact Assessment for Ridgecrest Wastewater Treatment Plant Project
    C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation
    D. Cultural Resources Study for the City of Ridgecrest Wastewater Treatment Plant Project, Kern and San Bernardino Counties, California
    E. Groundwater Impact Assessment

1.4 Use of the EIR

The EIR will be certified by the City of Ridgecrest for the purpose of disclosing potential environmental impacts resulting from the construction and operation of one of two possible proposed New Wastewater Treatment Plant (WWTP) design Alternatives along with associated mitigation measures recommended to avoid, reduce to less than significant, or reduce to the greatest extent possible potential adverse environmental effects that could result from the construction and operation of Alternative 1 or Alternative 2. Additionally, the EIR may also be used by following various other public Responsible agencies when considering the issuance of their own permits for the proposed Project.

- Kern County Airport Land Use Commission
- San Bernardino County
- Regional Water Quality Control Board – Region 6, Lahontan
- State Water Resources Control Board
- East Kern Air Pollution Control District

1.5 Public Involvement Process

This EIR is a disclosure document intended to inform the public and other potentially-affected parties and the Lead Agency decision-making body, of the potential significant adverse impacts to the environment that could result from construction and operation of the proposed Project Alternatives. The CEQA process requires open discussion and interaction to determine the scope of a Proposed Project and environmental topics that are of potential concern. The following sections identify the public processes that have been undertaken for the City's WWTP EIR.

In accordance with CEQA, the City of Ridgecrest (City) circulated a Notice of Preparation (NOP) of an EIR for a 30-day public comment period beginning on June 30, 2015 and ending on July 30, 2015 (Appendix A).

The purpose of the NOP was to inform the public agencies and the general public of the City of Ridgecrest's New Wastewater Treatment Plant (WWTP) EIR scoping process and to solicit comments to assist the City in determining environmental impacts relating to the proposed Alternatives and to identify potential feasible and reasonable mitigation for such impacts that should be considered in this EIR. The NOP was sent via certified mail to the Responsible, Trustee, and Interested Agencies, and property owners within 300 feet of the proposed Alternatives and published in the Daily Independent on June 30, 2015.

The City provided direct notification of the NOP scoping period to the following agencies:

- State Clearinghouse of the Governor's Office of Planning and Research
- City of Ridgecrest
    - Planning
    - Public Works
    - City Manager
    - City Attorney
    - Planning Commission
    - City Council
- U.S. Environmental Protection Agency
- China Lake Naval Air Weapons Station – United States Department of Defense (Navy)
- Kern County Planning Department
- Kern County Airport Land Use Commission
- Kern County Local Agency Formation Commission
- Kern County Council of Governments
- San Bernardino County, Land Use Services
- San Bernardino County, Public Works
- San Bernardino County Local Agency Formation Commission
- Regional Water Quality Control Board – Region 6, Lahontan

- State Water Resources Control Board
- East Kern Air Pollution Control District
- California Department of Fish and Wildlife
- U.S. Fish & Wildlife Service
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- Native American Heritage Commission
- Kern-Kaweah Chapter of the Sierra Club
- Kerncrest Chapter of the Audubon Society

Comments received as a result of the NOP are attached as Appendix A hereto, and helped direct the analysis presented in this EIR.

1.5.1 Notice of Completion of the Draft EIR and SCH Comment Period

Following the closure of the NOP public comment period, the City began preparation of the Draft EIR (DEIR). Upon completion of the DEIR, a Notice of Completion (NOC) was filed with the State Clearinghouse (SCH) and the Kern County Clerk, and mailed to interested, Trustee and Responsible public agencies and individuals on April 15, 2016 to initiate a 45-day DEIR public review period.

1.5.2 Solicitation of Comments on the Draft EIR

In addition to the NOC filed with the State Clearinghouse, the availability of the Draft EIR for public review and comment was also announced by the publication of a Notice of Availability (NOA) as a legal notice, also in the Daily Independent newspaper for the same 45-day duration at the SCH review period. In order to make a well-informed decision about whether and which Alternative to carry out as the Preferred Project, the NOA announces that the City welcomes comments regarding the adequacy of the DEIR and will receive comments, preferably in writing, between April 15, 2016 and close of business on May 31, 2016. The NOA advises that any comments should be directed to:

City of Ridgecrest

Attn: John Bracken, Wastewater Supervisor

100 W. California Avenue

Ridgecrest, CA 93555

Email: jbracken@ridgecrest-ca.gov

Additional copies of this Draft EIR are available for review at the following locations:

City of Ridgecrest

100 W. California Avenue

Ridgecrest, CA 93555

1.6 Final EIR

Following the closure of the 45-day DEIR public review and comment period, the City of Ridgecrest will review all comments received, prepare written responses to them, make any necessary changes to the DEIR, and prepare and publish the Final EIR (FEIR). The FEIR, which will incorporate this DEIR by reference, as well as the formal responses to all comments received. As required by CEQA, a copy of the Final EIR will be provided to any public agency who commented on the DEIR at least 10-days before the meeting date scheduled by the Lead Agency to consider certifying the FEIR. Any individual specifically requesting to receive a copy of the FEIR will also be provided a copy. The FEIR will be the document considered by the City Council for certification as adequate under CEQA, and prior to taking action to identify the Preferred Alternative and approve it as the Project itself.

If the City chooses to certify the FEIR and approve the project, it will be required to adopt findings relating to significant impacts as set forth in CEQA. In the event that impacts are mitigated to the greatest extent feasible but remain significant and unavoidable or irreversible, the City is required to adopt a Statement of Overriding Consideration stating the reasons why the Project should be approved, and in light of the whole record, the identified benefits of the project which outweigh the adverse impacts.

If the City chooses to deny both Project Alternatives, certification of the FEIR is not required.

2 Proposed Project Alternatives

2.1 Regional Setting, Background, and Baseline Conditions

The City of Ridgecrest (City), population 28,419[5], is located in the northeast corner of Kern County, in the southern portion of the Indian Wells Valley. This area is situated within the upper Mojave Desert, approximately 110 miles east of Bakersfield and 115 miles northeast of Los Angeles. The area is loosely bounded by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south. Vistas of the mountains and the surrounding desert can be viewed from any number of locations within the City.

Ridgecrest's general setting can be described as an urbanized area located within a high desert environment. Development within the City consists of low-rise buildings (one or two stories), low-density residential, retail and office commercial, industrial, and institutional uses. Most of the commercial, office, and institutional uses are located along major arterial roadways such as Ridgecrest Boulevard, Bowman Road, and China Lake Boulevard. Concentrations of nonresidential land uses along these thoroughfares create a largely linear urban form. Less-intensive land uses, including rural residential and natural open space, are located on the City's urban fringe. Landscapes surrounding the City generally consist of high desert terrain and vegetation with mountains in the background.

Of the approximately 21.50 square miles within the Ridgecrest City limits, approximately 8.81 square miles are owned by the federal government of the United States under the stewardship of the Department of the Navy. As illustrated in **Figure 2-1**, most of the land to the north and east of SR 178 (E. Ridgecrest Boulevard and S. China Lake Boulevard, respectively) is federally-owned, and makes up a portion of the Naval Air Weapons Station (NAWS) China Lake. Within the City limits, uses at NAWS largely consist of typical urban activities, such as housing, schools, the Navy Police, a medical clinic, museums, some limited commercial activity, and administrative buildings. Other uses at the overall NAWS facility outside the City limits are within the Kern County and San Bernardino County jurisdictions and include military activities for high-hazard air warfare weapons systems, training operations, airfield operations, ordinance storage areas, laboratories, and associated facilities and infrastructure. NAWS lands have also been used for a variety of nonmilitary uses, including Native American religious and traditional activities, scientific research and educational projects such as geothermal exploration and development, and recreational activities.

All residential and commercial "domestic" and fire flow water service for the City of Ridgecrest is provided by Indian Wells Valley Water District (IWVWD). The IWVWD is a public water district which provides potable water from groundwater wells. Groundwater in the basin is not adjudicated. Capital planning and source adequacy of water supplies for the City and area immediately surrounding Ridgecrest is performed exclusively by IWVWD. Since the availability of good quality groundwater in the Indian Wells Valley is limited, groundwater has been extensively studied and monitored. IWVWD is currently utilizing water treatment plants to remove arsenic, and has also planned for future brackish water treatment.

NAWS China Lake owns and operates its own potable water system, consisting of groundwater wells and storage tanks. Capital planning and source adequacy of that system are the responsibility of the Navy.

The City does own and operate several groundwater wells that are used exclusively to irrigate park sites as well as landscaped areas at Ridgecrest City Hall.

[5] CA Dept. of Finance, January 2015. http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/documents/E-12015InternetVersion.xls. Site Accessed April 12, 2016.

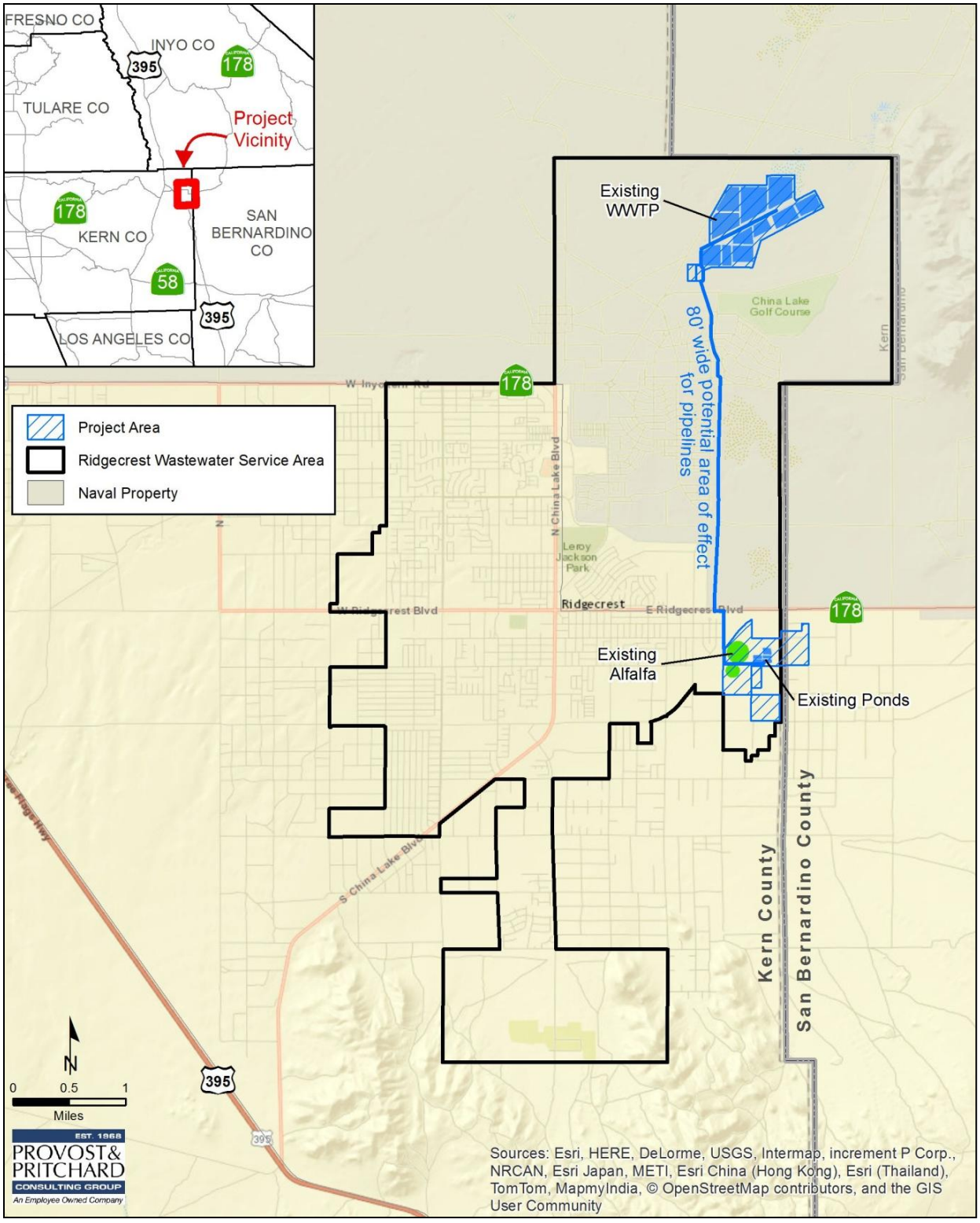


Figure 2-1. Project Vicinity and Location

Ridgecrest Sanitation District (RSD) was established in the mid 1950s to serve the small civilian service community that had developed outside of the NAWS base. At that time, wastewater from the NAWS was treated at a facility located on the base, and RSD operated a separate smaller plant outside of the base. In the mid-1970s, the population began to shift from NAWS to the City, creating capacity problems at the RSD treatment plant. The Environmental Protection Agency (EPA) mandated that the City and NAWS consolidate their wastewater treatment facilities and treat the combined flows at a common plant. The plant then located in the City was abandoned, and the City has been operating the existing treatment plant at the NAWS site since 1974. That facility, including an expansion completed in 1976, provides capacity to treat the current flows.

At present, the City's wastewater treatment and disposal system comprises a number of integral components located at two separate sites at opposite ends of the community, which are connected by an existing gravity flow main (see **Figure 2-1**) conveying City of Ridgecrest effluent to the WWTP. At the extreme north end of the City, the existing wastewater treatment plant is situated on an approximately 6.25 acre portion of the City's leased easement on the NAWS. This facility is the location of numerous process components such as influent and effluent flow metering, primary sedimentation tanks, anaerobic digestion, primary sludge pumping, facultative ponds, solar sludge drying beds and effluent pumping. The southern two-thirds of the plant sit on APN 033-030-08, with the northern portion on APN 033-030-02. The plant is abutted to the northeast by a series of 11[6] evaporation/percolation ponds occupying approximately 300 acres on APNs 033-030-02 and -05, also on NAWS lands leased by the City.

The Navy owns both the WWTP and disposal facilities and the underlying land. An easement granted to the City allows the presence of City operators and grants the City some ability to install and maintain improvements. The City's raw wastewater is collected within a system of local wastewater pipelines comprising four main branches (**Figure 2-2**). Three of these branches, serving the central and southern areas of the community, feed into a larger pipeline of between 24 and 27 inches in diameter that flows via gravity northward to the WWTP. The fourth branch serves the northwestern part of the community and feeds directly into the WWTP.

Approximately four miles to the south of the facilities located on the NAWS, the City owns and operates an additional 12 acres of wastewater disposal ponds on APN 343-010-07 and irrigates approximately 33 acres of alfalfa on APNs 343-010-08, -11, and -16 with the treated effluent. A pumping station at the northern facility sends treated effluent back through a 20-inch force main that effectively parallels the aforementioned gravity main to the southern facilities for disposal and application. Aside from short segments that underlie S. Lumill Street, State Route 178, and the Bowman Road Freeway, the pipelines are located on City-owned property (APNs 343-014-07, -08, -09, and -11) and within a 20-foot-wide public utilities easement on federally-owned property (APNs 033-050-04 and -09 and 033-030-08 and -09). Treated effluent is also used by the Navy for irrigation of a golf course located on the NAWS. The Navy has facilities to filter and disinfect the treated effluent with chlorine, but is currently only disinfecting the treated effluent.

The most recent WWTP upgrade was the reconstruction of the headworks screening and grit removal processes in the mid 2000s. Most other facilities, including the primary sedimentation basins, anaerobic digesters, and wastewater disposal ponds, were originally constructed in the 1960s and 1970s and have never been upgraded. The existing WWTP is a primary treatment plant followed by facultative ponds for supplemental oxidation with disposal by evaporation and percolation. The facility provides for removal of settleable solids and biochemical oxygen demand (BOD) but does not provide nutrient removal. Due to the age of the plant and relatively low level of treatment provided, it is not well suited for wastewater effluent recycling.

[6] Nine operational, two non-operational.

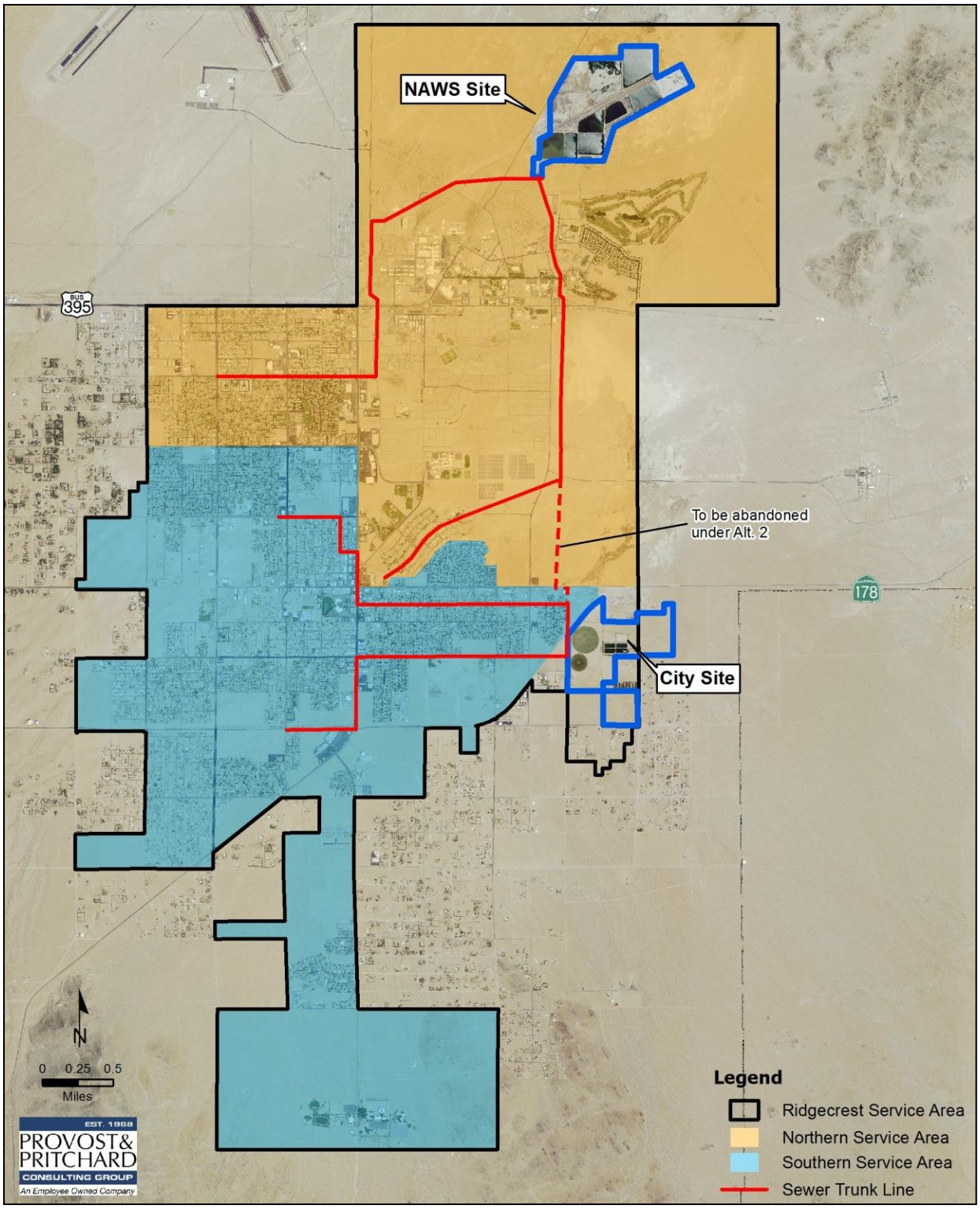


Figure 2-2. Gravity Sewer Service Areas

The existing WWTP has a permitted capacity of 3.6 mgd maximum daily flow[7], however it is nearing the end of its useful life and is not expected to be capable of effectively treating wastewater at its permitted flow making the "No Project Alternative" undesirable. Fundamental portions of the existing process components are deteriorated, and certain conditions may be considered hazardous. The electrical system does not meet current code requirements. Concrete and steel show visible signs of corrosion and deterioration. Considering the condition of the existing WWTP, it is clear that the existing facility will not continue to adequately serve the City without substantial improvements or replacement. Current flows through the WWTP average approximately 2.6 mgd; however, growth will cause flows to approach the permitted capacity in the near future. In response to the high flows seen at the existing WWTP in the early- to mid-1990s, the Regional Water Quality Control Board required the design of a plant expansion.

As an outcome of the federal Base Realignment and Closing Act exercise, NAWS is building a number of new facilities that will create new jobs on the base and within the City. However, the number of new jobs and the timeline of implementation of those jobs remain uncertain. This addition of new jobs on the base and the "multiplier" effect creates a need for additional wastewater treatment and disposal capacity in order to accommodate growth both directly and indirectly related to the proposed NAWS expansion. Although there may remain some useable capacity at the existing WWTP, its age and condition dictate that the best alternative will be to construct a new facility, allowing the existing WWTP to be retired.

In 2015, the City prepared a Wastewater Treatment Facility Plan that evaluated its current and future wastewater treatment needs. The study identified two Project Alternatives that would serve the City equally well, but that would place facilities at different locations and would require different levels of funding for construction, operations, and maintenance. This EIR will evaluate the potential environmental impacts associated with the two recommended Project Alternatives, as well as the No Project Alternative. While it is anticipated that the overall wastewater treatment plant (WWTP) will ultimately consist of two distinct phases, for the purposes of this EIR, only Phase 1, the development of a new facility capable of treating and disposing of 3.6 million gallons per day (mgd) average daily flow and 4.0 mgd maximum month flow will be analyzed, as it is the Project that the City proposes to design and construct in the immediate future. Phase I is expected to meet the City's wastewater needs through 2030[8].

Phase 2 of the development will expand the WWTP to a capacity of 5.4 mgd (maximum month). Except for the headworks components detailed in Section 2.2.2 and analyzed in this EIR, none of the components necessary for Phase 2 would be designed or considered until such time as the City determines that Phase 1 has neared its capacity and further expansion is needed and a source of funding has been identified. As a result, any analysis of potential environmental impacts resulting from Phase 2 would be too speculative at this time, and will be evaluated under separate environmental documentation once the Phase 2 parameters have been determined and that phase is being actively considered. The Phase 1 Project Alternatives are identified in the following chapters of this EIR.

The above described regional setting and background will serve as part of the baseline conditions for evaluating the impacts of the proposed Project Alternatives to the environment. Other relevant aspects of environmental and regulatory baseline conditions will be described in more detail in Chapter 3.

The City of Ridgecrest has not identified a Preferred Project Alternative. Both Alternatives 1 and 2 are fully evaluated for potential environmental impacts in accordance with CEQA to assist the City with identifying the environmentally-preferred alternative and choosing its Preferred Project.

[7] California Regional Water Quality Control Board, Lahonton Region, Board Order No. 6-00-56, WDID No. 6B150116001
[8] City of Ridgecrest, 2015. Wastewater Treatment Plant Facility Plan.

2.2 Proposed Alternatives

This EIR discusses the potential environmental impacts that may result from the construction of either of the two proposed Project Alternatives along with the potential impacts that may result from the No Project Alternative. For the purposes of this EIR, the proposed Project involves the construction of a new 3.6-mgd average daily flow capacity wastewater treatment facility, identified as Phase 1 of the City's ultimate wastewater treatment system. The proposed facility would serve as a replacement to the existing, outdated, 3.6-mgd maximum day flow capacity wastewater treatment plant located on the NAWS Site and serves the entirety of the City of Ridgecrest, including the NAWS. As described herein, Alternatives 1 and 2 have numerous components in common, including sites to be utilized, facilities to be constructed and operated (although locations of those facilities may vary) and treatment capacity. Certain headworks components of Alternatives 1 and 2 would be sized to accommodate the future Phase 2 of the WWTP; this is discussed in Section 2.2.2 below.

2.2.1 Common Location Criteria for the Project Alternatives

Under either Alternative 1 or Alternative 2, facilities would be constructed and operated at two separate sites. The sites themselves would remain the same under either alternative; as discussed below, the differences would largely be the location of specific facilities within those sites:

1. **Naval Air Weapons Station China Lake Site (NAWS Site):** The NAWS Site is located northeast of the intersection of Knox Road and Pole Line Road, within NAWS China Lake, and is approximately 355 acres in size (See **Figure 2-3** and **Figure 2-4).** The current wastewater treatment plant (primary treatment and solids handling) is located at the southwestern corner; the remainder of the site comprises slightly less than 300 acres of wastewater ponds and approximately 55 acres of vacant land with common natural vegetation. The land is owned by the United States under the stewardship of the U.S. Navy and is leased by the City as an easement. The 300 acres of existing wastewater ponds would remain on this site under all Alternatives.
2. **City of Ridgecrest Site (City Site):** The City Site consists of properties located to both sides of San Bernardino Boulevard. The area to the west, between Church Avenue and Bowman Road, is within the corporate boundary of, and owned by, the City of Ridgecrest (See **Figure 2-5** and **Figure 2-6**). The site is 180 acres in size and contains 12 acres of existing wastewater ponds, approximately 33 acres of alfalfa fields where treated effluent is used as irrigation water, and a 20-acre off-road vehicle park, with the remainder of the site occupied by common natural vegetation. The 12 acres of existing wastewater ponds would remain on this site under all Alternatives, and the off-road vehicle park would be replaced with disposal ponds under Alternatives 1 and 2. This site also includes adjacent City-owned property located east of San Bernardino Boulevard between California Avenue and Upjohn Avenue, in San Bernardino County. The site is 50 acres in size and contains common natural vegetation. Under either Alternative 1 or Alternative 2, this property would be used for the construction of effluent disposal ponds.

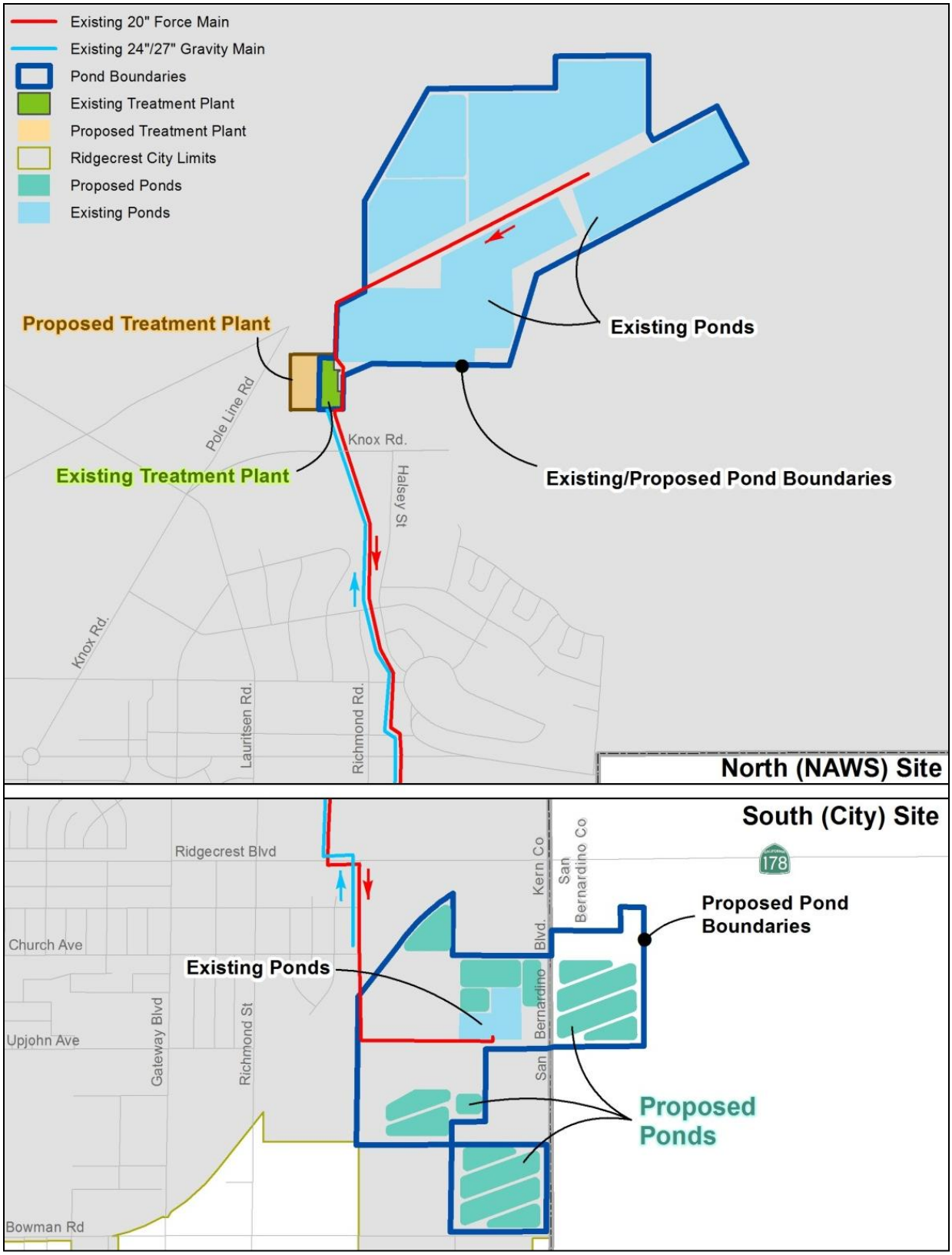


Figure 2-3. Alternative 1

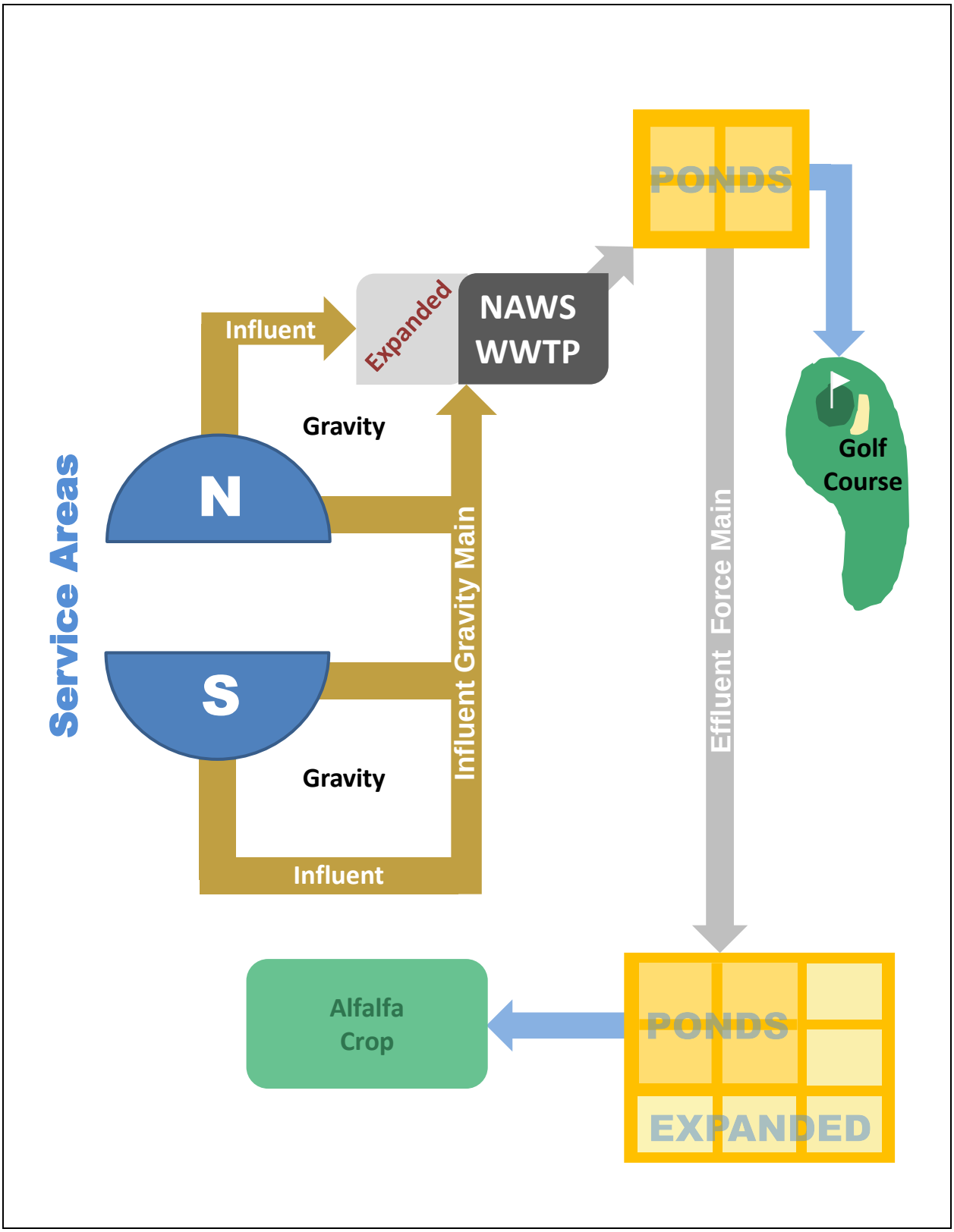


Figure 2-4. Alternative 1 Schematic Flow Diagram

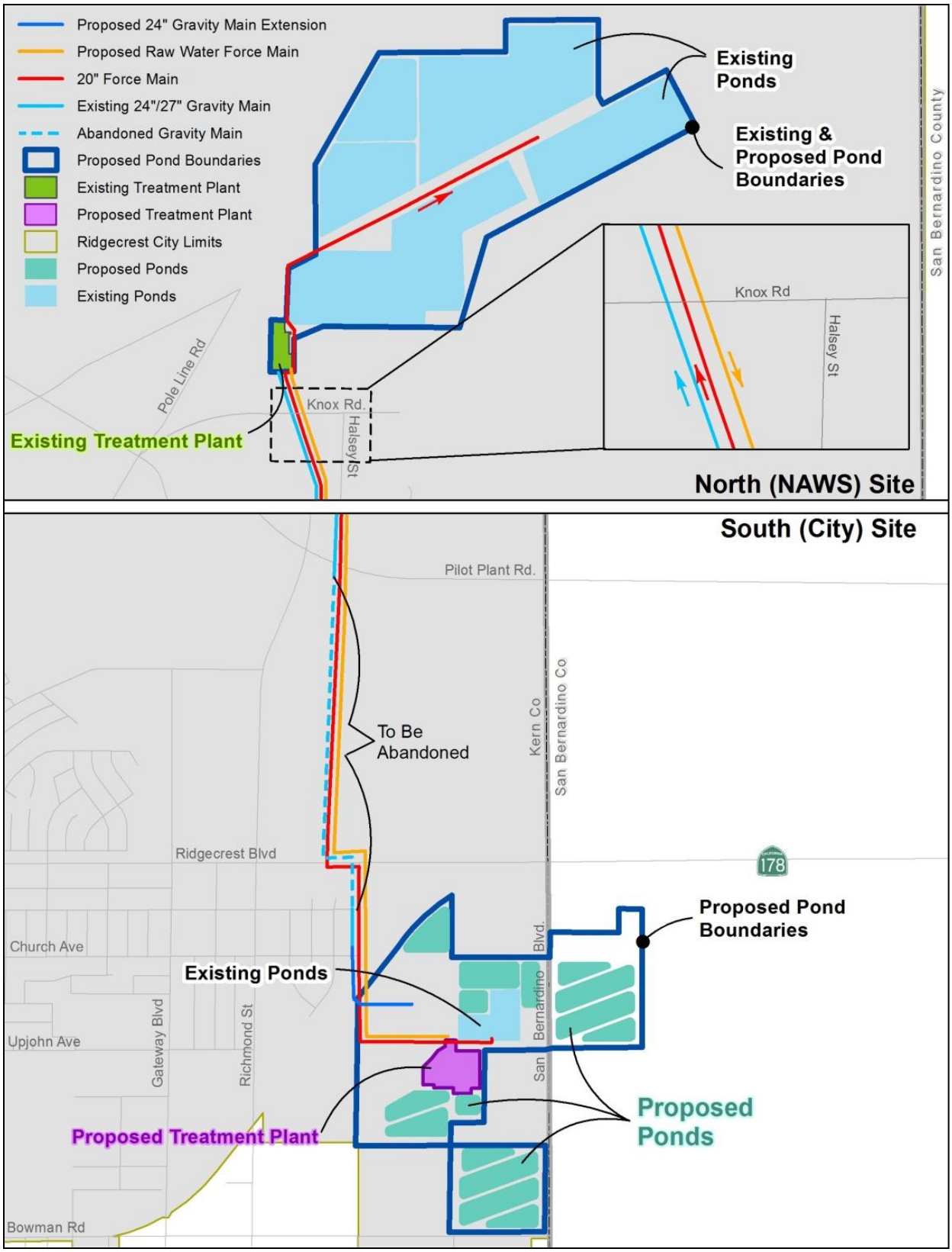


Figure 2-5. Alternative 2

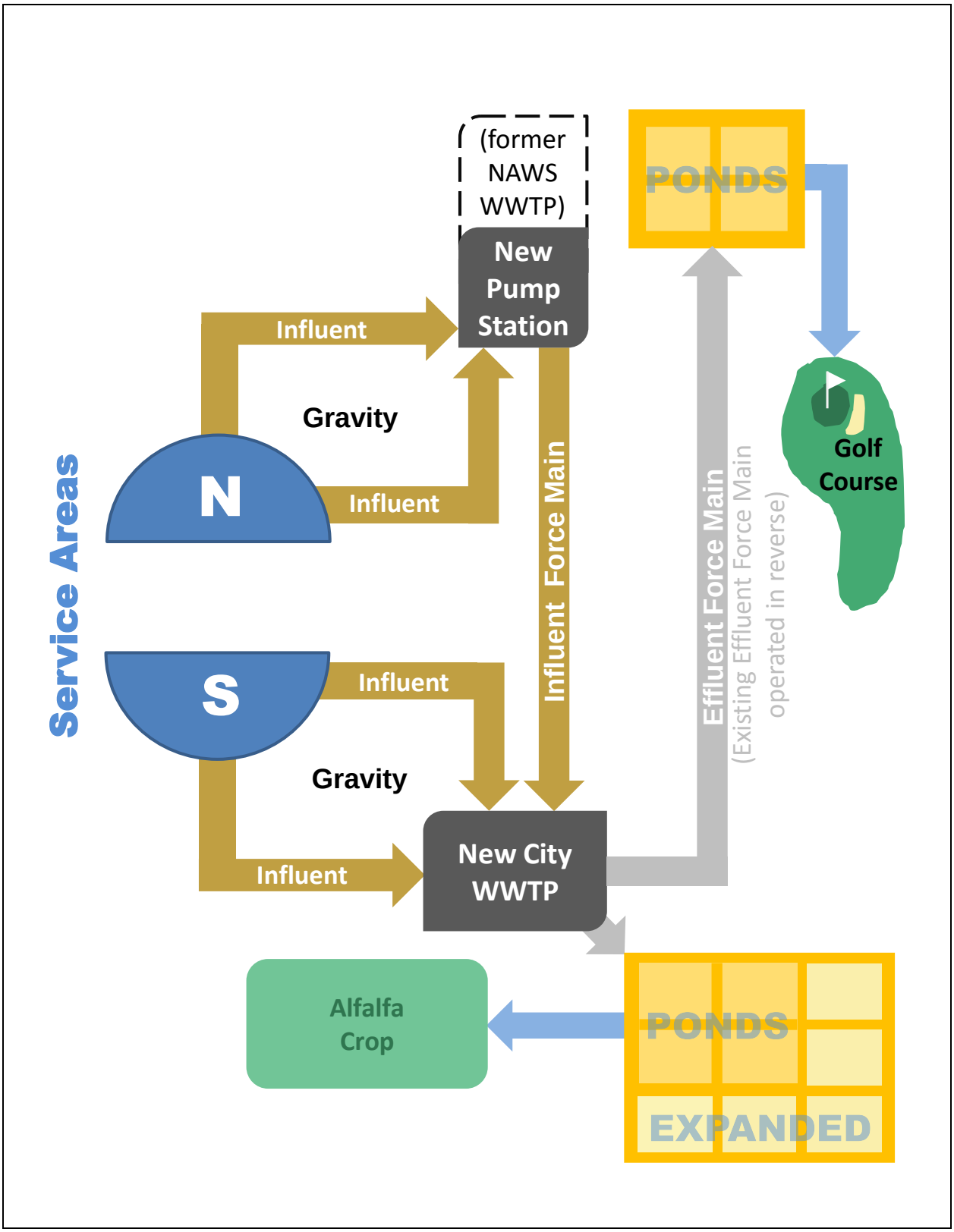


Figure 2-6. Alternative 2 Schematic Flow Diagram

2.2.2 Common Design Criteria and Facilities for the Project Alternatives

Regardless of whether Alternative 1 or Alternative 2 is selected, the new wastewater treatment plant will share common design criteria and facilities designed to serve existing development and future growth within the NAWS and City. **Table 2-1** identifies common flow and organic loading design criteria that would be accommodated by either Alternative 1 or Alternative 2. The remainder of this Section describes the particular facilities, components, and processes that would be constructed on or occur at either the NAWS site (Alternative 1) or the City Site (Alternative 2), respectively.

Table 2-1. Design Criteria

Common Design Criteria and Facilities	
Design Criteria	**Phase 1**
Average Annual Daily Flow (AAD)	3.6 mgd
Average Day Maximum Month Flow (ADMM)	4.0 mgd
Maximum Day Flow	4.7 mgd
Peak Hour Flow	6.8 mgd
Average Influent BOD_5 Loading	270 mg/L 9,000 ppd @ ADMM Flow
Average Influent TSS Loading	270 mg/L 9,000 ppd @ ADMM Flow
Average Influent TKN Loading	40.5 mg/L 1,350 ppd @ ADMM Flow
Effluent BOD_5	10 mg/L
Effluent TSS	10 mg/L
Effluent Ammonia	1 mg/L
Effluent Total Nitrogen	10 mg/L

2.2.2.1 Headworks and Primary Treatment

"Headworks" is the general term for the structures and process equipment at the head of the plant that receive wastewater flow collected throughout the City and NAWS. A headworks typically provides initial or primary treatment consisting of grinding or screening of wastewater in-flow, flow metering, grit removal, and pumping to the secondary treatment process (described below). The proposed headworks facility will screen and remove plastics and non-biodegradable objects and material from the wastewater. The grit and non-biodegradable material removed at the headworks will be washed, compacted, and deposited in containers, and periodically hauled off-site to an approved landfill disposal site. The headworks will also include a lift station to feed the influent wastewater to the subsequent treatment process. The lift station will include a minimum of three variable-speed-drive solids handling pumps. Flow meters will be installed to measure and record City and NAWS flows entering the WWTP. To avoid the costs associated with replacement of headworks facilities still in functional condition but that will be undersized for the ultimate Phase 2 project, headworks facilities constructed as part of Phase 1 will be sized to accommodate the Phase 2 maximum month average day flow capacity estimated to be 5.4 mgd with a peak flow of 10.3 mgd. To meet this capacity, the influent pump station would contain up to four pumps, each rated at 2,375 gallons per minute (gpm). In order to avoid having to remove and replace what will likely be perfectly-functional components when Phase 1 transitions to Phase 2, all major hydraulic structures and pipelines within the headworks (headworks equipment, grit chamber, flow metering, and connecting piping) will be constructed to the Phase 2 peak-hour flow capacity. When Phase 2 is funded and designed, it is anticipated that the primary additions will include additional mechanical units such as larger pumps. Along with other Phase 2 components, these future items will be analyzed in a future EIR prior to approval and initiation of Phase 2.

2.2.2.2 Secondary Treatment Process

After the primary screening and grit removal, influent wastewater will undergo secondary treatment that begins in two oxidation ditches equipped with anoxic zones (lacking oxygen) to carry out a nitrification/denitrification process. The treated wastewater will then flow to secondary clarifiers that separate out microorganisms so that "clean" effluent water is left. Effluent from the clarifiers will be discharged to the ponds and/or tertiary treatment facilities. Waste activated sludge (WAS) will be discharged to the digesters for processing. Splitter boxes will control the wastewater flow into the oxidation ditches and the clarifiers.

WAS will be discharged to the existing digesters for processing. Splitter boxes will control the wastewater flow into the oxidation ditches and the clarifiers.

2.2.2.3 Tertiary Treatment Process

While current disposal methods are suitable for un-disinfected secondary effluent, the City of Ridgecrest may decide to produce disinfected tertiary recycled wastewater effluent at the new WWTP as reuse opportunities develop. This may include providing disinfected tertiary effluent to the NAWS golf course and unrestricted irrigation of City and County owned parks, landscaped areas, and school athletic fields. It is not anticipated that the daily demand for recycled wastewater would exceed the daily flow from the wastewater treatment plant. The proposed Project would provide a storage tank located on the WWTP site for the tertiary-treated wastewater to attenuate daily fluctuations in irrigation demand to maintain effluent quality instead of storing the effluent in existing storage ponds where the water quality could degrade.

The design includes the ability to treat up to 1.8 mgd of the secondary effluent to California Title 22 recycled water standards for unrestricted re-use. Components include cloth filters, chlorine disinfection, chemical storage and feed systems, effluent storage (1.8 MG aboveground storage tank), and pumping. Facilities will be located adjacent to the new WWTP so that gravity flow can be maintained through the secondary treatment process, tertiary filters and disinfection facilities. A low-lift tertiary effluent pump station will fill the recycled water storage tank. Recycled water booster pumps will be provided to pressurize the force main to the landscape irrigation areas within the City.

2.2.2.3.1 Operations and Maintenance Buildings

New operations and maintenance buildings of approximately 2,175 square feet and 2,720 square feet, respectively, would be constructed to replace the existing structures. The operations building would include office space with provision for supervisory control and data acquisition (SCADA) controls and alarms, laboratory, restroom with shower, and a lunch/break/meeting room. The maintenance building would provide storage for equipment, spare parts, and vehicles, and would also have space for tool storage and vehicle and/or machinery repair. A covered parking area will be constructed for storage of large vehicles and maintenance equipment, including but not limited to tractors, loaders, and trash pumps. A separate new building of approximately 680 square feet will house electrical switchgear/motor controls and variable speed drives.

2.2.2.3.2 Site Improvements

The WWTP will include an all-weather access road, a paved parking area with approximately 10 spaces, security fencing, limited outdoor lighting, stormwater drainage facilities and gravel surfacing for the remainder of the site. Potable water from the NAWS water systems (which currently serves the existing WWTP) will be extended to the site. If the City site is chosen, the existing water service at the City site will be enlarged to serve the new WWTP. The existing power and communications service serving the existing WWTP will be relocated to the new site if the NAWS Site is chosen. If the City site is chosen, the existing power and communications service will be enlarged to serve the new WWTP.

The WWTP site will be graded to drain to a single location where an emergency storage basin will be provided to accommodate runoff as well as to contain spills or other release of untreated wastewater. At the NAWS site, the emergency storage pond will be located in a portion of Pond 1, separated from the remaining pond area. At the City site, the emergency storage pond will be a newly-constructed pond. At either location, flows from spills would be returned to the headworks via a portable emergency pond lift station and temporary force main.

The plant will be designed to accept delivery from licensed commercial septage tank pumpers of septage from locations not otherwise connected to the City's wastewater system). A fully-automated septage receiving station will be installed near the influent lift station to provide solids separation and compaction or dewatering. Septage will flow directly into the influent pump station after screening. The station will contain a card lock system to record information about septage received and waste removed, including volumes, dates, times, and hauler identification. The City estimates that as many as 30 truckloads (2,000-3,000 gallons per truckload) of septage will come to the receiving station each month. The station will also provide automatic pH monitoring along with provisions to shut down the unloading in the event that out-of-range pH values are detected. Although uncommon, in the event out-of-range pH levels are detected during unloading an alarm would sound and the station would shut down and no longer accept the waste.

2.2.2.3.3 Emergency Power

A diesel-powered emergency generator will be provided to allow continuous operation of the WWTP during electrical outages. It will be sized to operate all essential pumps, process equipment, and control systems. Approximately 1,000 gallons of diesel fuel would be stored onsite within double containment tanks to allow the generator to operate for a minimum period of 24 hours without refueling.

2.2.2.3.4 Biosolid Handling Facilities

The wastewater treatment process will produce biosolids that will require stabilization, dewatering, and drying. The biosolids from the secondary biological process will be aerobically digested and stabilized before dewatering and disposal. Currently at the existing WWTP, biosolids from only the primary clarifiers are collected, anaerobically digested, and pumped to biosolid drying beds for dewatering. Biosolids are also generated in the facultative treatment lagoons, but as a result of the capacity of the lagoons, to date have not required removal and disposal.

The new WWTP will utilize aerobic digesters. Positive displacement blowers will provide the required air for the aerobic process. Digested sludge from the digesters will be mechanically dewatered with additional solar drying and then the solids will be stockpiled on site and removed to an authorized disposal facility after at least three months. The sludge dewatering and storage area (shown on the site plans) will be concrete-lined with a drainage system to carry leachate and stormwater back to the headworks.

2.2.2.3.5 Biosolids Disposal

The anticipated stockpiled biosolids (after drying and storage) will continue to be disposed on the City's alfalfa fields, landfill disposal, and/or through composting via a third-party composting facility. All disposal methods will be permitted through the RWQCB and meet current and future biosolids disposal regulations.

2.2.2.3.6 Effluent Disposal

Currently, treated effluent is sent via a four-mile-long, 20-inch-diameter force main from the existing WWTP at NAWS to the existing ponds at the City site. This force main, which exists beneath City right-of-way and within a public utilities easement granted to the City by the Department of the Navy, would remain in place under all Alternatives; however, as discussed below it would operate differently under Alternative 2.

The City currently owns land at the City site, including approximately 80 useable acres within Kern County and 47 additional usable acres within San Bernardino County. In addition, there are parks and schools throughout the City that could potentially use the effluent for irrigation of landscaping.

All existing disposal methods and locations will continue to be utilized, including reconstructing existing disposal ponds 8 and 11 to their original design capacity and function and placing them back into service. Overall, approximately 95 acres of land containing 56 acres of ponds will be needed to accommodate the proposed 3.6 mgd capacity.

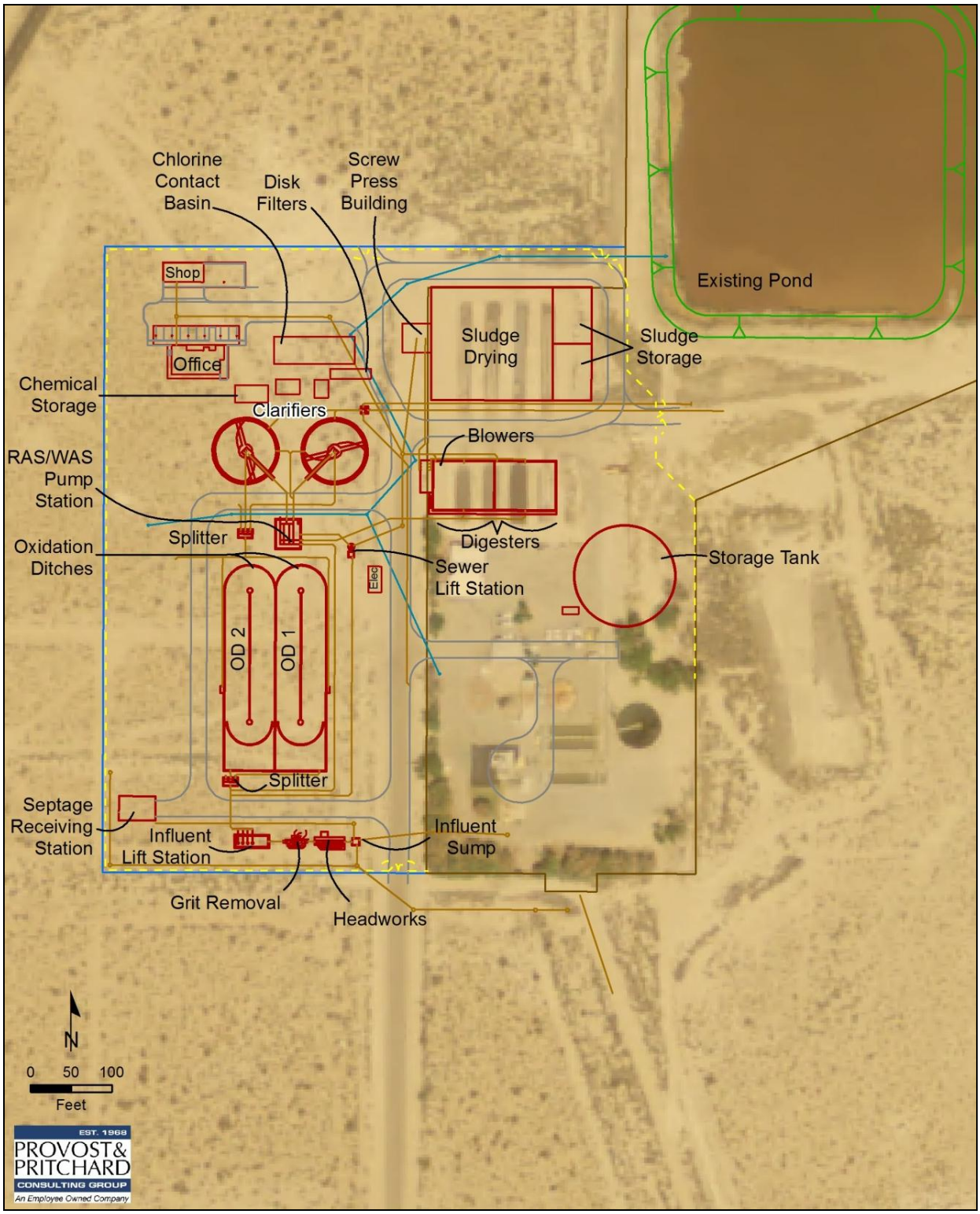


Figure 2-7. Alternative 1 Conceptual Treatment Plant Site Plan

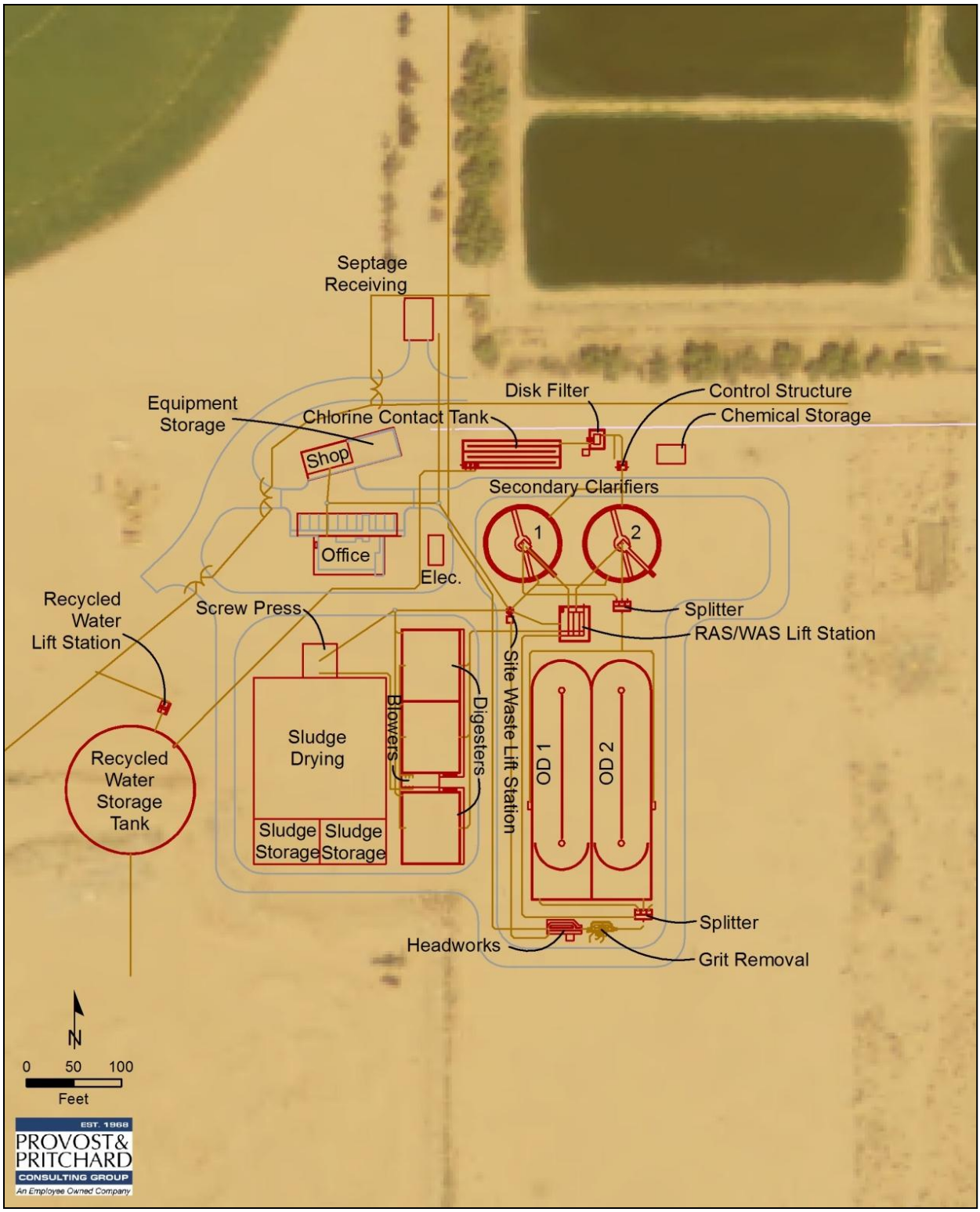


Figure 2-8. Alternative 2 Conceptual Treatment Plant Site Plan

2.2.1 Common Construction Activities for the Project Alternatives

2.2.1.1 Construction

Construction of improvements for Alternatives 1 and 2 would be similar, including the construction of treatment basins, clarifiers, lift stations, oxidation ditches, solids handling facilities, disinfection, and associated appurtenances. Most of the area within either the City site or the NAWS site will be disturbed and the resulting improvements will consist of basins, buildings, and paved or gravel areas.

2.2.1.1.1 Timeline

The proposed Project schedule for both Alternatives is presented below. Exact timing of the Project will depend on a number of factors including regulatory approvals, funding commitments, and contractor availability and scheduling.

- Complete final design: January 2017
- Bidding and award: August 2017
- Construction completed: August 2019
- Startup completed: March 2020

2.2.2 Common Operation and Maintenance Activities for the Project Alternatives

2.2.2.1 Operation and Maintenance

Operations and maintenance under Alternatives 1 and 2 would be similar, and may result in the City needing to add one or two additional staff. A new facility will reduce the maintenance levels the City is currently experiencing at the existing facility, but the reductions will be offset by more complex treatment activities and process control to meet new discharge requirements. A certified Grade IV operator will likely be required by the new RWQCB permit. Operations costs will increase due to additional mechanical equipment along with additional chemical and power costs. Neither Alternative 1 nor Alternative 2 is expected to result in any significant increase in City equipment needs. Existing maintenance equipment would be sufficient to operate the new plant. Operations and maintenance (O&M) procedures will be developed to train staff on maintaining the new facilities.

2.2.3 Alternatives

Alternative 1: Alternative 1 would construct and operate a wastewater treatment plant on approximately 7.4 acres adjacent to the existing WWTP at the China Lake NAWS Site as illustrated in **Figure 2-3.** As is the case with the existing WWTP, the City would need to acquire an easement from the U.S. Navy in order to utilize the additional 7.4 acres (**Figure 2-8**). Under this Alternative, portions of the existing WWTP would be decommissioned, with new facilities constructed on the existing NAWS site as well as on the proposed lease area abutting to the west. If Alternative 1 is selected as the Preferred Alternative, construction and demolition would need to be coordinated such that the existing WWTP could continue to function and power supply to the existing WWTP is not interrupted. Wastewater from all areas of the City would continue to gravity-flow north to the WWTP, and the existing 20-inch force main would remain in use to pipe effluent south to the City Site disposal ponds for eventual land application.

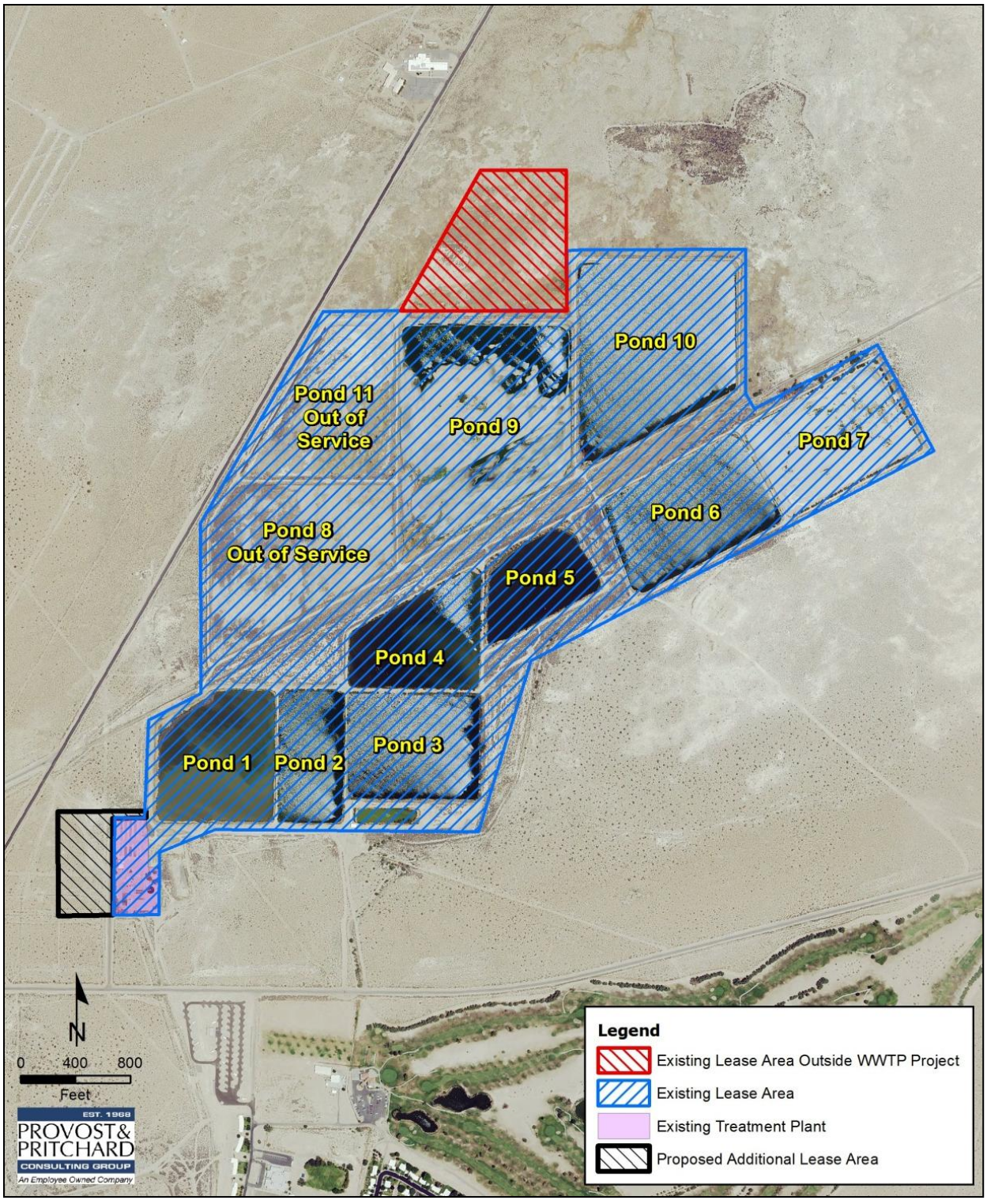


Figure 2-9. Existing and Proposed Lease Areas

Alternative 2: Alternative 2 would construct a wastewater treatment plant on approximately 10 acres adjacent to the existing disposal ponds at the City Site. Currently, all raw wastewater from the City flows by gravity to the WWTP. Under Alternative 2, the City would be divided into two distinct service areas (**Figure 2-2**) based on the location and direction of flow of existing trunk sewer lines. The southern service area would be able to flow via gravity to the City Site WWTP. Southern-area flows would continue to meet at the intersection of California Avenue and South Lumill Street. However, at that point a new 24-inch-diameter gravity main would divert the influent directly to the new WWTP instead of allowing it to head north to the NAWS site via the existing 24-/27-inch gravity main. An influent lift station at the western edge of the new WWTP would pump the southern-area influent to the headworks. Flows from the northern service area would continue to be collected by the 24-/27-inch gravity main to flow northward to the NAWS site. At that point, a new lift station would be constructed to pump the arriving wastewater southward. To connect the new lift station to the City site, Alternative 2 would require the construction of approximately 21,000 feet of raw wastewater force main with a 16-inch diameter. The new force main is expected to run parallel to the existing force main within a new easement acquired from the Department of the Navy. The City is currently examining the optimal location of the new force main relative to the existing one. To account for a variety of potential alignments, this EIR examines a permanent 10-foot public utilities easement to either side of the existing easement along with a 20-foot temporary construction easement for a total corridor width of 80 feet.

While the existing four-mile-long, 20-inch-diameter effluent force main would remain in place, it would be operated in reverse of its current direction; effluent would be pumped from the City site to the NAWS site wastewater disposal ponds. This would require installation of a new pump station at the City Site.

In summation, Alternatives 1 and 2 occupy largely the same physical sites and will contain the same type, size, and intensity of treatment facilities. The primary differences between these two Alternatives relate to the physical location of the treatment plant, the presence or absence of a new raw wastewater lift station at the NAWS site, construction of a small segment of 24-inch sewer main, and a force main from the new lift station to the City site. Under Alternative 1, the wastewater treatment facility would be constructed on approximately 7.4 acres at the NAWS site, adjacent and to the west of the existing wastewater treatment plant. Under Alternative 2, the facility would be constructed on approximately 10 acres at the City site, adjacent and to the southwest of the existing wastewater ponds. As noted above, both of the Project Alternatives require the continued operation of and potential upgrades to the existing four-mile underground effluent pipeline, continued operation of the wastewater disposal ponds at the NAWS site and City site, and the construction of an additional 90 acres of ponds at the City site. If the City implements the disinfected tertiary recycled water component of the Alternative, a recycled purple water pipe distribution system will be constructed from the selected WWTP site to the China Lake NAWS Site, the NAWS golf course, schools, parks, and landscaped areas. The pipeline is expected to be constructed within the existing rights-of-way of Richmond Road, the Drummond Road alignment south of Burroughs High School, French Avenue past Leroy Johnson Park, Balsam Street to Ridgecrest Boulevard, then on South Warner Street to Freedom Park. All pipelines for the distribution of the recycled water will be analyzed under a subsequent CEQA document. This CEQA document analyzes only the impacts of the tertiary treatment.

Figure 2-2 identifies the conceptual wastewater treatment facility ponds layout that is common to the Project Alternatives. Note: these plans are conceptual and not all components of the Project may be consistent in the final plan. However, the overall footprint and implications of the proposed Project will be equivalent. Following construction of the proposed Project Alternative, the existing wastewater treatment ponds would continue to function in association with the Project and the treatment facility would be decommissioned and the site would be reclaimed. Under Alternative 1, some of the existing wastewater treatment plant site would be utilized for tertiary treatment and storage of recycled water. The construction of the tertiary treatment and storage facilities will require the demolition of existing WWTP structures after the new secondary treatment facilities are built.

Under the **No Project Alternative**, the City would continue to operate and maintain its existing 3.6-mgd wastewater treatment plant at NAWS China Lake, the wastewater disposal ponds located at the NAWS and City sites, and the existing four-mile effluent force main, as illustrated in **Figure 2-10**. This Alternative corresponds with the Baseline Conditions fully described in Section 2.1, and constitutes the environmental baseline against which potential impacts will be analyzed in this EIR.

2.2.4 Best Management Practices for Wastewater Treatment Plants

The new WWTP will be designed to meet current regulations imposed by EPA and the RWQCB. Reduction of influent BOD, TSS, and ammonia/nitrogen will be required. Disinfection of effluent will be required if the City chooses to provide recycled water for turf or other landscaping.

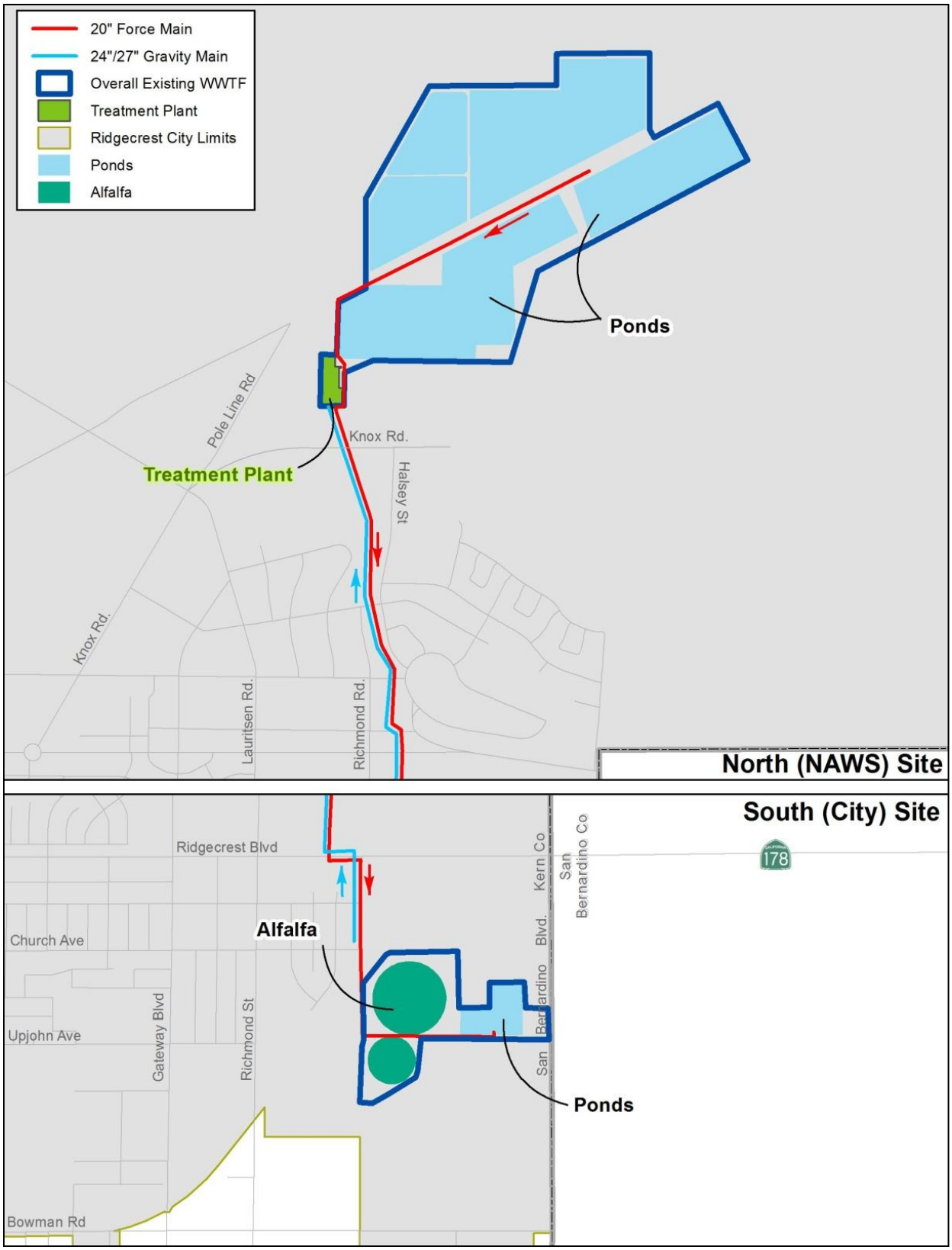


Figure 2-10. Existing Conditions and "No Project" Alternative

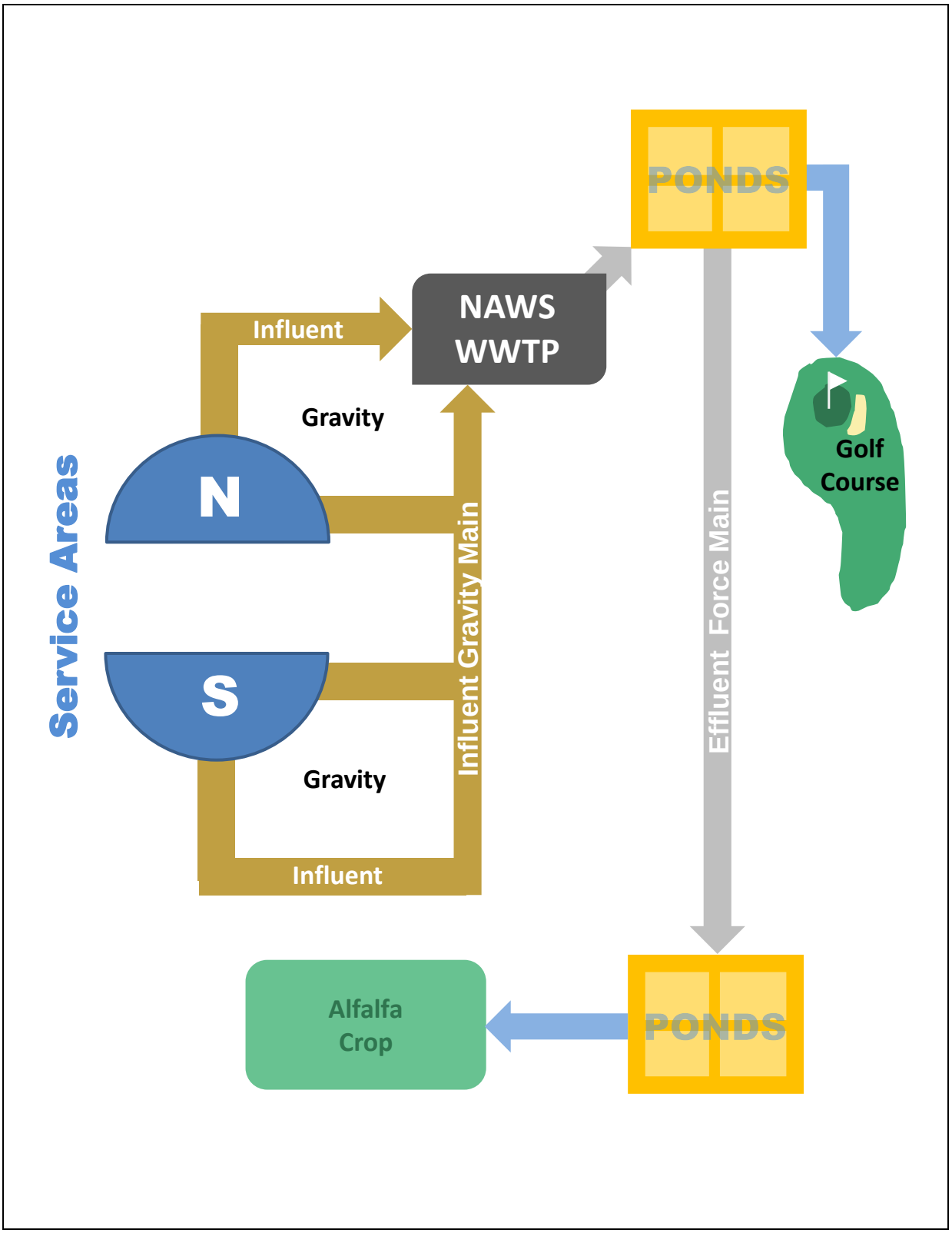


Figure 2-11. Existing Conditions and "No Project" Alternative Schematic Flow Diagram

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Signature Date

_____

Printed Name/Position

3 Impact Analysis

3.1 Aesthetics

3.1.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City Site:** The City site is located on either side of San Bernardino Boulevard; the western portion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation. Because it will be installed in a below-grade trench it will not be visible following completion of construction.

No Project Alternative Setting: The No Project Alternative would not involve any changes to the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Note: these plans are conceptual and not all components of the Project may be consistent in the final plan. However, the overall footprint and implications of the proposed Project will be equivalent.

3.1.2 Regulatory Setting

3.1.2.1 Federal

National Scenic Byways Program: The National Scenic Byways program is part of the U.S. Department of Transportation, Federal Highway Administration. The program was established under the Intermodal Surface Transportation Efficiency Act of 1991, and was reauthorized in 1998 under the Transportation Equity Act for the 21st Century. Under the program, the U.S. Secretary of Transportation recognizes certain roads as National Scenic Byways or All-American Roads based on its archaeological, cultural, historic, natural, recreational, and scenic qualities. However, no designated byways are within the immediate vicinity of the Alternatives.

Comprehensive Land Use Management Plan (CLUMP) for NAWS China Lake: Contains policies regarding landscaping and grounds maintenance of properties located within the boundaries of the NAWS. Specifically, the following policy addresses the aesthetics of properties through the implementation of xeriscaping:

1. Objective 4.3. Objective and Guidelines for Landscaping:
    a. Implement new technology to reduce water usage whenever possible.
    b. Utilize xeriscaping to the maximum extent possible.
    c. Create aesthetic, functional, xeriscaping, and shaded areas that people can use for relaxation
    d. Use native species to the greatest extent possible.

3.1.2.2 State

California Scenic Highway Program: The California Legislature initiated the California Scenic Highway Program (Streets and Highways Code Sec. 260 et seq.) in 1963, with the goal of preserving and protecting the State's scenic highway corridors from change that would diminish their aesthetic value. The State Scenic Highway System consists of eligible and officially designated routes. A highway may be identified as eligible for listing as a State scenic highway if it offers travelers scenic views of the natural landscape, largely undisrupted by development. Eligible routes advance to officially designated status when the local jurisdiction adopts ordinances to establish a scenic corridor protection program and receives approval from the California Department of Transportation (Caltrans). Caltrans stresses the need for citizen participation in developing the guidelines that implement these requirements. Scenic corridor protection programs are required to provide for:

1. Regulation of land use and development within the scenic corridor;
2. Detailed land and site planning;
3. Careful attention to and control of earthmoving and landscaping activity;
4. Careful attention to design and appearance of structures and equipment; and
5. Control of outdoor advertising, including a ban on billboards.

However, no designated highways are within the immediate vicinity of the Alternatives.

California Building Code Title 24 Outdoor Lighting Standards[9]: The requirements vary according to which "Lighting Zone" the equipment is in. The Standards contain lighting power allowances for newly installed equipment and specific alterations that are dependent on which Lighting Zone the project is located in. Existing outdoor lighting systems are not required to meet these lighting power allowances. However, alterations that increase the connected load, or replace more than 50% of the existing luminaires, for each outdoor lighting application that is regulated by the Standards, must meet the lighting power allowances for newly installed equipment.

An important part of the Standards is to base the lighting power that is allowed on how bright the surrounding conditions are. The eyes adapt to darker surrounding conditions, and less light is needed to properly see; when the surrounding conditions get brighter, more light is needed to see. The least power is allowed in Lighting Zone 1 and increasingly more power is allowed in Lighting Zones 2, 3, and 4.
By default, government designated parks, recreation areas and wildlife preserves are Lighting Zone 1; rural areas are Lighting Zone 2; and urban areas are Lighting Zone 3. Lighting Zone 4 is a special use district that may be adopted by a local government. The Alternatives are located on the fringe of urban development. Therefore, they are located in Lighting Zone 3.

[9] California Building Energy Efficiency Standards- Outdoor Lighting Zones. http://www.energy.ca.gov/title24/2005standards/outdoor_lighting/2004-09-30_LIGHTING_ZONES.PDF. Accessed January 20, 2015.

Assembly Bill 1108: California Assembly Bill (AB) 1108 (Chapter 638, Statutes of 2002) amends CEQA law to require CEQA lead agencies to notify military installations when a project meets certain criteria. The criteria includes property located within an established operational area, a general plan amendment, or is of statewide, regional, or area-wide significance, or is required to be referred to the local ALUC. The purpose of AB 1108 is to utilize the CEQA process to ensure military notification of proposed projects that may potentially impact military operations through the CEQA process. AB 1108 amends CEQA to provide military agencies with early notice of proposed projects within two miles of installations or underlying training routes and SUA.

3.1.2.3 Local

City of Ridgecrest Scenic Corridors: The City's Scenic Corridor Plan identifies several scenic corridors in the Planning Area. These corridors include West Inyokern Road, North and South China Lake Boulevard, East and West Ridgecrest Boulevard, West Bowman Road, College Heights Boulevard, West Drummond Avenue and Jacks Ranch Road and have been identified so because of their scenic qualities and their existing or potential function as gateways into the City. A typical corridor boundary is defined by existing topographic features along these roadways and by any significant landmarks or human–made features, up to 1,000 feet from the center of the roadway in areas of level terrain. Within more urban areas of the Planning Area, corridor limits have been defined as up to 200 feet from the center of the roadway. Typical motorist views throughout the Planning Area, range from foreground (0 to ½ mile), to middle ground (½ mile to 2 miles), to background (greater than 2 miles). Owing to the flat topography, views within the urban areas from the roadway consist of open space (such as in parks), commercial uses, and residential areas with the desert and mountain ranges in the background. Roadways along the periphery of the City of Ridgecrest provide uninhibited views of the surrounding upper Mojave Desert and mountain ranges. Neither the City nor NAWS Site lie within a designated scenic corridor.

City of Ridgecrest Zoning Ordinance:

1. **20-3.23 General Provision – Fences, Walls, and Hedges:** Fences, walls, and hedges may be permitted as follows:
    a. Fences and walls behind the front yard setback along the sides and rear yard property lines not exceeding seven (7) feet in height as measured from the average grade on either side of the fence. On street side fences, the height shall not be higher than seven (7) feet above the top of curb.
    b. On interior lots, the horizontal fencing line may be tapered from behind the front yard setback line to the front yard property line provided that the fence is not higher than three (3) feet six (6) inches above grade at the property line.
    c. The cross-visibility area as defined elsewhere in the chapter shall not be violated by any structure, fence, wall, hedge or other material.
    d. No fence, wall or hedge shall be installed or constructed above the height of three (3) feet six (6) inches within any front or side setback adjacent to a street intersection except as provided below:
        - The fence, wall, or hedge along the side yard is located more than twenty-five (25) feet from the projection of the front property line at the street intersection; or
        - Such installation within the side yard is determined by the Director of Public Works not to constitute a traffic hazard due to reduced visibility. (Ordinance . No. 84-08, A 3, § 323)

- **20-3.14 General Provisions – Maintenance of Landscaped Areas:** A landscaped area provided in compliance with the regulations prescribed in this chapter or as a condition of a use permit, site plan

review or planned unit development shall be landscaped with materials suitable for screening or ornamenting the site, whichever is appropriate. Landscaped areas shall be watered, weed, pruned, fertilized, sprayed or otherwise maintained to assure compliance with regulations requiring landscaped areas as stated under Site Plan Review. (Ord. 84-08, A 3, § 314)

- **20-40.1 RSP – Purpose and Intent:** The Recreation, School and Public Use Zone is intended primarily for application to those areas of the city where it is necessary and desirable to provide permanent open space, governmental and special district facilities, which are necessary to safeguard the health, safety and welfare of the people, of the people, and to provide spaces for the location and preservation of public school, cultural, police, fire, and other governmental facilities and recreation sites. (Ord. 84-08, A 4, § 401)

City of Ridgecrest General Plan: The Community Design Element describes the various visual features that comprise the physical image of the city and its parts, and the patterns of activity that create interesting and diverse lifestyles. The presence or absence of these visual elements and the patterns of activity can determine the structure and character of the urban environment citywide and within neighborhoods. It can also influence people's feelings about their environment and, hence, the quality of life in the city. In establishing guidelines for visual features and activity patterns, Community Design takes into consideration constraints and opportunities imposed on the city by the desert environment. In developing a set of design guidelines for the General Plan, certain aspects of site design and architecture are common to all land uses.

The City of Ridgecrest General Plan establishes the following policies, objectives and guidelines that are applicable to the proposed Project:

1. **Open Space and Conservation (OSC) Policy 2.1 Preservation of Aesthetic Views:** The City shall preserve important public views and viewsheds by ensuring that the scale, bulk and setback of new development does not significantly impede or disrupt them and ensure that important vistas and view corridors are enhanced. Require development to provide physical breaks to allow views into these vistas and view corridors.
2. **OSC-2.2 Protect and Enhance Scenic Resources:** The City shall protect and enhance the scenic resources and significant natural features and, where appropriate, prohibit land uses that could degrade distinctive natural features.
3. **OSC-2.3 Preserve Natural Aesthetic Resources:** The City shall preserve significant plant communities and native desert vegetation wherever possible.
4. **OSC-2.4 Discourage Removal of Significant Resources:** The City shall identify and discourage the removal of significant trees. Where removal is required for new development, require a two-for-one replacement or transplantation.
5. **OSC-2.6 Control of Lighting and Glare:** The City shall require that all outdoor light fixtures including street lighting, externally illuminated signs, advertising displays, and billboards use low energy, shielded light fixtures which direct light downward. Where public safety would not be compromised, the City shall encourage the use of low pressure sodium lighting for all outdoor light fixtures.
6. **CD-1.6 Visual Compatibility:** The City shall encourage development that is visually and functionally compatible with the surrounding neighborhoods by:
    a. Maintaining a height and density of development that is compatible with adjacent developed neighborhoods; and
    b. Accenting entrances to new neighborhoods with varied landscaping, hardscaping, and signage treatment.

7. **CD-1.7 Integrate Natural Features:** The City shall emphasize Ridgecrest's natural features as the visual framework for new development and redevelopment. Projects should be designed to fit a site's natural conditions, requiring minimum site alteration to accommodate the building plan.
8. **CD-2.6 Graded Areas:** Any area that was graded for new developments shall be required to be revegetated by the developer.
9. **CD-2.7 Drought Tolerant Landscaping:** The City shall require native desert species or other drought tolerant plants, including median treatments and other City maintained spaces, to minimize maintenance, especially irrigation.
10. **CD-2.8 Ground Cover:** Decomposed granite, crushed rock, cinder or other suitable aggregate should be used for ground cover to enhance retention of water in the soil and for beauty. Use of plants for ground cover, including lawns, should be selective in the interest of water conservation.
11. **CD-2.9 Amount of Landscaping:** The amount of landscaping provided must be in proportion to a whole development, be integrated with building design, enhance the appearance and enjoyment of a project and soften the effects of buildings and pavement.
12. **CD-2.10 Irrigation Systems:** An appropriate irrigation system must be provided for plants requiring irrigation. The system must be designed for conservative efficient use of water. Automatic water systems are required.

San Bernardino County General Plan: The Conservation Element provides direction regarding the conservation, development, and utilization of the County of San Bernardino's natural resources. Its objective is to prevent the wasteful exploitation, destruction and neglect of resources. Resources include, but are not limited to, water, energy, land, biodiversity, minerals, natural materials, recyclables, view sheds and air. The Conservation Element is distinguished by being primarily oriented toward natural resources. Population growth and development continually require the use of both renewable and nonrenewable resources. One role of the Conservation Element is to establish policies that reconcile conflicting demands on those resources. The Conservation Element involves both identification of a community's natural resources and adoption of policies for their preservation, development, and wise use.

1. **Mountain/Conservation Goal (M/CO) 1.2:** Protect scenic vistas by minimizing ridgeline development that would substantially detract from the scenic quality of major ridgeline viewsheds.
2. **Desert/Conservation Goal (D/CO) 1.2:** Require future land development practices to be compatible with the existing topography and scenic vistas, and protect the natural vegetation.
3. **D/CO 1.3:** Require retention of existing native vegetation for new development projects, particularly Joshua trees, Mojave yuccas and creosote rings, and other species protected by the Development Code and other regulations. This can be accomplished by:
    a. Requiring a landscape plan, approved as part of the location and development plan review and approval process for all new development projects.
    b. Requiring the Building Official to make a finding that no other reasonable siting alternatives exist for development of the land prior to removal of a protected plant.
    c. Encourage on-site relocation of Joshua trees and Mojave yuccas. However, if on-site relocation is not feasible require developers to consult a list that will be established and maintained in the County Building and Safety Office of residents willing to adopt and care for relocated trees.
    d. The developer/home builder shall bear the cost of tree or yucca relocation.
    e. Retention and transplantation standards will follow best nursery practices.

4. **D/CO 1.6:** In the landscaping of individual sites, native and other drought tolerant plants shall be encouraged.
5. **D/CO 1.10:** Preserve scenic vistas where natural slope exceeds 15 percent by requiring building foundations for residential, non-residential and accessory structures to conform to the natural slope to ensure that rooflines do not eliminate or dominate the ridge lines or that the natural landform is not significantly impacted by excessive grading or erosion.
6. **D/CO 3.1:** Protect the Night Sky by providing information about and enforcing existing ordinances:
    a. Provide information about the Night Sky ordinance and lighting restrictions with each land use or building permit application.
    b. Review exterior lighting as part of the design review process.
7. **D/CO 3.2:** All outdoor lighting, including street lighting, shall be provided in accordance with the Night Sky Protection Ordinance and shall only be provided as necessary to meet safety standards.
8. **D/CO 3.3:** Allow for desert communities' input on the need for, and placement of, new street lights.

3.1.3 Methodology

Analysis of aesthetic impacts from the proposed Project Alternatives is subjective by nature, because the qualities that create an aesthetically pleasing setting will vary from person to person. For the purpose of this analysis, the proposed Project Alternatives sites have been visited in order to consider the existing community character and to determine the proposed Project Alternatives' consistency with the surrounding area.

3.1.4 Impact Assessment/Environmental Consequences

The impact assessment provided below is based on the following CEQA Guidelines Appendix G thresholds of significance.

3.1.4.1 I-a) Would the Project have a substantial adverse effect on a scenic vista?

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporated.**
The proposed Project Alternatives sites are both located in areas consisting of relatively flat terrain allowing for the sites to be viewed from varying distances as a result of intermittent obstructions from existing structures and vegetation within the viewshed. The City of Ridgecrest enjoys a diverse scenic location within the upper Mojave Desert and is surrounded on all sides by four mountain ranges: Sierra Nevada Mountains to the west, the Coso Mountains to the north, the Argus Range on the east, and the El Paso Mountains to the south. Scenic vistas of the mountains and the surrounding desert are found throughout the City. Desert landscapes are comprised of desert scrub habitats. Views of these desert habitat areas would include a variety of unique plant species including creosote bush, desert agave, barrel cactus, and Mohave yucca.

Sensitive receptors near the NAWS Site are already affected by NAWS activities and the existing WWTP in their viewsheds. The new WWTP in Alternative 1 and the new lift station in Alternative 2 would not be substantial changes to current aesthetic conditions. As a result of their location and existing environmental settings, impacts to these receptors would be less than significant.

The new force main proposed in Alternative 2 would be constructed below grade adjacent to an existing underground pipeline and therefore would not constitute a significant change to the viewshed. Impacts would be less than significant.

Residences near the City Site **Figure 3-1** are surrounded by the natural environment and may consider their viewsheds to be scen

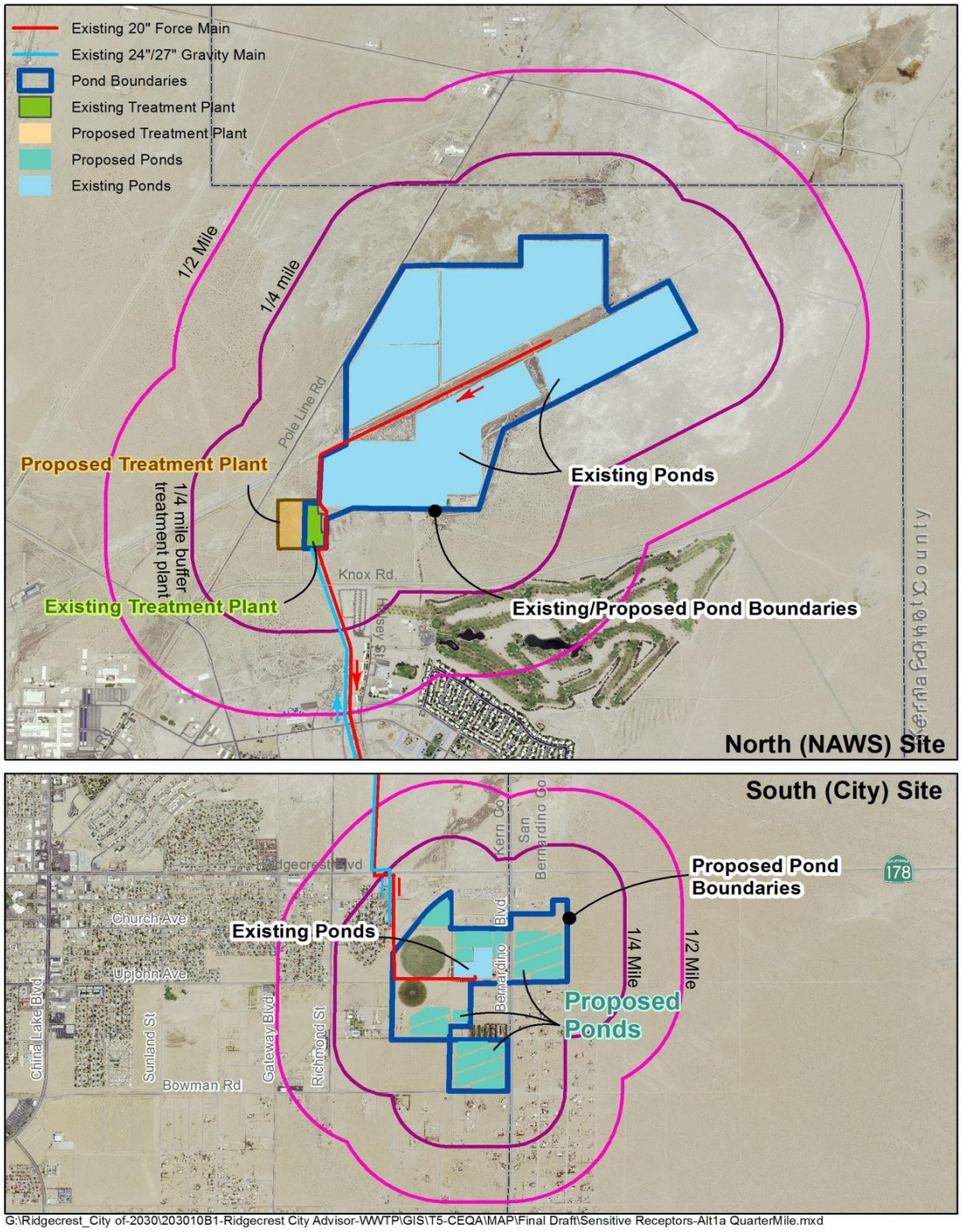


Figure 3-1. Sensitive Receptors

In both alternatives, new development adjacent to these residences on land that consists of natural vegetation would result in the conversion of the viewshed from a natural to a man-made environment. This conversion would result from development of 56 acres of wastewater treatment ponds at the City Site and would impact the cluster of residences that are located east of San Bernardino Boulevard and south of Bowman Road. To these residents, this conversion of land may be considered a substantial change to their environment. This impact would be reduced to less than significant with the implementation of the following mitigation measures:

3.1.5 Mitigation Measures

- AES-1: In accordance with the City of Ridgecrest General Plan and Zoning Code, County of San Bernardino General Plan and Zoning Code and the Comprehensive Land Use Management Plan for NAWS China Lake, the proposed Project shall preserve existing natural aesthetic resources (vegetation) and re-establish natural vegetation around each site where feasible, install eco-friendly xeriscape landscaping and gateway features at main facility entrances that are visible from sensitive receptors and public rights-of-way. The City shall prepare professional landscaping and lighting plans for the facility in compliance with the aforementioned land use plans and development codes at the time of building permits.
- AES-1: Prior to construction of any proposed structures, all proposed lighting shall be indicated on site plans. The lighting plan shall incorporate lighting that directs light pools downward to prevent glare on adjacent and surrounding areas that meet minimum security and safety requirements

With the implementation of AES-1 and AES 2, the proposed Project under either Alternative would result in a less than significant impact.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.1.5.1 I-b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Alternatives 1 and 2: **No Impact.** The Alternative 1 Project sites (as previously identified) are not located in the immediate vicinity of any California scenic highways, as defined by the State of California Department of Transportation (Caltrans). According to the California Scenic Highway Mapping System[10], the nearest officially designated state scenic highway is State Route 190 located within the Death Valley National Park, approximately 44 miles north of the site. It should be noted that this section of highway is also designated as a National Scenic Byway. Additionally, sections of Highways 395 and 58 located within the general vicinity of Ridgecrest are eligible as state scenic highways but are not officially designated. However, the sites are not within the viewsheds of these roadways. Therefore, no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.1.5.2 I-c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporated.**
Impacts related to this checklist item were previously analyzed in Impact Assessment I-a. As previously noted, the conversion that would result from development of wastewater treatment ponds at the City Site could affect the cluster of residences that are located east of San Bernardino Boulevard and south of Bowman

Road. To these residents, this conversion of natural land to man-made uses may be considered a substantial change to their environment. This impact would be reduced to less than significant with the incorporation of Mitigation Measures AES-1 and AES-2 as described in Impact Assessment I-a.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.1.5.3 I-d) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporated.**

There are existing sources of light on both the City and NAWS Sites. The proposed Project would require additional lighting for safety and security purposes. With incorporation of Mitigation Measure AES-2, requiring low intensity hooded lighting fixtures that meet minimum security and safety requirements and the preparation of a lighting plan consistent with the City of Ridgecrest and County of San Bernardino General Plan and Zoning provisions, the impacts would be less than significant.

No Project: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.1.6 References

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
URL: http://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202030.pdf
Access Date: 5/14/2015

City of Ridgecrest Zoning Ordinance
Adopted Date: 1980
URL: https://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/Zoning%20Ordinance.pdf
Access Date: 5/14/2015

San Bernardino County General Plan
Adopted Date: 3/13/2007
URL: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf
Access Date: 5/14/2015

California Scenic Highway Mapping System, California Department of Transportation (Caltrans).
http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

3.2 Agriculture and Forestry Resources

3.2.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 mgd capacity wastewater treatment plant located on Naval Air Weapons Station (NAWS) China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project

Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional components that warrant discussion.

1. **NAWS Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. These lands are designated by the Farmland Mapping & Monitoring Program (FMMP) as Urban and Built-up and Nonagricultural and Natural Vegetation Lands.
2. **City Site:** The City site is located in two portions on either side of San Bernardino Boulevard. The area to the west is designated as Urban and Built-up, Unique Farmland, and Nonagricultural and Natural Vegetation Land by the Farmland Mapping & Monitoring Program (FMMP). The area to the east, between California Avenue and Upjohn Avenue, is not designated by the Farmland Mapping & Monitoring Program (FMMP) but identifies closest with the Nonagricultural and Natural Vegetation Lands designation based on physical characteristics.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction below-grade parallel to the existing force main. is the pipeline will be installed on lands that are not designated by the Farmland Mapping & Monitoring Program (FMMP) but identify closest with the Vacant or Disturbed and Nonagricultural and Natural Vegetation Lands designations based on physical characteristics.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds located at the NAWS and City sites, and the existing 4-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCB waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

The No Project Alternative would result in no changes to the current land designations by the Farmland Mapping & Monitoring Program (FMMP).

3.2.2 Regulatory Setting

3.2.2.1 Federal

Farmland Protection Policy Act: The Natural Resources Conservation Service, a federal agency within the U.S. Department of Agriculture, is the agency primarily responsible for implementation of the Farmland Protection Policy Act (FPPA). The FPPA was enacted after the 1981 Congressional report, Compact Cities: Energy-Saving Strategies for the Eighties indicated that a great deal of urban sprawl was the result of programs funded by the federal government. The purpose of the FPPA is to minimize federal programs' contribution to the conversion of farmland to non-agricultural uses by ensuring that federal programs are administered in a manner that is compatible with state, local, and private programs designed to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years (USDA-NRCS, 2011)[11].

Comprehensive Land Use Management Plan for NAWS China Lake: The Comprehensive Land Use Management Plan for NAWS China Lake contains policies regarding commercial forestry and agriculture located within the boundaries of the NAWS. However, these policies are not applicable as they depend on the presence of pinyon pine forests, which do not exist on either site.

[11] Farmland Protection Policy Act. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/?ss=16&navtype=SUBNAVIGATION&cid=nrcs143_008275&navid=100170180000000&position=Welcome.Html&ttype=detail. Accessed January 21, 2015.

3.2.2.2 State

California Environmental Quality Act (CEQA) Definition of Agricultural Lands: Public Resources Code Section 21060.1 defines "agricultural land" for the purposes of assessing environmental impacts using the Farmland Mapping & Monitoring Program (FMMP). The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California.

California Department of Conservation, Division of Land Resource Protection: The California Department of Conservation (DOC) applies NRCS soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. Pursuant to the DOC's FMMP, these designated agricultural lands are included in the Important Farmland Maps (IFM) used in planning for the present and future of California's agricultural land resources. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The list below provides a comprehensive description of all the categories mapped by the DOC. Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland is referred to as Farmland[12].

1. **Prime Farmland:** Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
2. **Farmland of Statewide Importance:** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
3. **Unique Farmland:** Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
4. **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.
5. **Grazing Land:** Land on which existing vegetation is suited to the grazing of livestock
6. **Confined Animal Agriculture:** Lands include poultry facilities, feedlots, dairy facilities, and fish farms. In some counties, confined animal agriculture is a component of the farmland of local importance category.
7. **Nonagricultural and Natural Vegetation:** Includes heavily wooded, rocky, or barren areas, riparian and wetland areas, grassland areas which do not qualify for grazing land due to their size or land management restrictions, small water bodies and recreational water ski lakes. Constructed wetlands are also included in this category.
8. **Semi-Agricultural and Rural Commercial Land:** Includes farmsteads, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds.

[12] California Department of Conservation. FMMP – Important Farmland Map Categories. http://www.consrv.ca.gov/dlrp/fmmp/mccu/Pages/map_categories.aspx. Accessed January 2015.

9. **Vacant or Disturbed Land:** Includes open field areas that do not qualify for an agricultural category, mineral and oil extraction areas, off road vehicle areas, electrical substations, channelized canals, and rural freeway interchanges.
10. **Rural Residential:** Includes areas of one to five structures per ten acres.
11. **Urban and Built-up Land:** Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
12. **Water:** Perennial water bodies with an extent of at least 40 acres.
13. **Other Land:** Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act): The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Section 51200-51297.4, and therefore is applicable only to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts. However, an agricultural preserve must consist of no less than 100 acres. However, in order to meet this requirement two or more parcels may be combined if they are contiguous, or if they are in common ownership.

The Williamson Act program is administered by the Department of Conservation (DOC), in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period, or a 20-year period for property restricted by a Farmland Security Zone Contract, wherein no conversion out of agricultural use is permitted. Each year the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected county or city. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on county adoption and implementation of the program and is voluntary for landowners[13].

Farmland Security Zone Act: The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35% reduction

[13] California Department of Conservation. Williamson Act Program. http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx. Accessed January 2015.

in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses[14].

Forestry Resources: State regulations regarding forestry resources are not relevant to the Project because no forestry resources exist in the Project's vicinity.

3.2.2.3 Local

There are no local plans with policies addressing agricultural or forestry resources.

3.2.3 Impact Assessment

3.2.3.1 II-a) Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Proposed Alternatives 1 and 2: **No Impact.** There is no land involved in the two Alternatives designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance as shown on the Farmland Mapping and Monitoring Program (FMMP)[15], with the exception of approximately 30 acres of alfalfa fields on the City Site where treated effluent from the existing wastewater treatment facility is recycled and land applied. This land would not be impacted by the proposed Alternatives and would continue to be farmed following implementation. Therefore, no impact would occur for either alternative.

No Project Alternative: **No Impact.** No designated farmland exists on the No Project Alternative sites. Therefore, no impact would occur.

3.2.3.2 II-b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Proposed Alternatives 1and 2: **No Impact.** There are no agricultural zones onsite or within the immediate vicinity of the Alternative 1 or 2 Project sites. Additionally, the sites are not subject to Williamson Act contracts. Therefore, no impact would occur for either alternative.

No Project Alternative: **No Impact.** There are no agricultural zones onsite or within the immediate vicinity of the No Project Alternative sites. Additionally, the sites are not subject to Williamson Act contracts. Therefore, no impact would occur.

3.2.3.3 II-c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Proposed Alternatives 1 and 2: **No Impact.** There are no forest lands or timberland zones onsite or within the immediate vicinity of the Alternative 1 or 2 Project sites. Therefore, no impact would occur.

No Project Alternative: **No Impact.** There are no forest lands or timberland zones onsite or within the immediate vicinity of the No Project Alternative sites. Therefore, no impact would occur.

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[14] Farmland Security Zone Act. http://www.consrv.ca.gov/dlrp/lca/farmland_security_zones/Pages/Index.aspx. Accessed January 21, 2015.
[15] California Department of Conservation. Farmland Mapping. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/ker12_east.pdf. Site accessed March 2016.

3.2.3.4 II-d) Result in the loss of forest land or conversion of forest land to non-forest use?

Proposed Alternatives 1 and 2: **No Impact.** There are no existing forest lands on the Alternative 1 or 2 Project sites. Therefore, no impact would occur.

No Project Alternative: **No Impact.** There are no existing forest lands on the No Project Alternative sites. Therefore, no impact would occur.

3.2.3.5 II-e) Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Proposed Alternatives 1 and 2: **No Impact.** Any potential changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use have been discussed in II-a through II-d. Therefore, no impact would occur for either alternative.

No Project Alternative: **No Impact.** Any potential changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use have been discussed in II-a through II-d. Therefore, no impact would occur.

3.2.4 References

California Department of Conservation. Farmland Mapping.
ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2012/ker12_east.pdf.

China Lake Naval Air Weapons Station
Adopted Date: November 2002
http://www.globalsecurity.org/military/library/report/enviro/naws_chinalake_nov2002-vol-iii.pdf
Access Date: 5/22/2015

Farmland Security Zone Act.
http://www.consrv.ca.gov/dlrp/lca/farmland_security_zones/Pages/Index.aspx.
Access Date: January 21, 2015.

3.3 Air Quality

3.3.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.

2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Regional Setting: Given the overlap of Project sites for Alternative 1, 2, and the No Project Alternative, the following setting from Ambient Air Quality & Noise Consulting's Air Quality & GHG Impact Assessment (see Appendix B) applies equally to each.

- The City of Ridgecrest is located in the northeast corner of Kern County, in the southern portion of the Indian Wells Valley. This area is situated within the upper Mojave Desert, approximately 110 miles east of Bakersfield and 115 miles northeast of Los Angeles. The area is loosely bounded by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south.
- The Project is located within the Mojave Desert Air Basin (MDAB). The MDAB consists of the eastern half of Kern County, the northern desert portion of Los Angeles County, eastern Riverside County, and a majority of San Bernardino County. Eastern Kern County is within the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD).
- The MDAB covers a large part of the California's high desert. The MDAB includes the eastern half of Kern County, the northern part of Los Angeles County, most of San Bernardino County except for the southwest corner, and the eastern edge of Riverside County. It is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada (ARB 2001).
- Although the eastern part of the MDAB is sparsely populated, the area just north of the San Gabriel and San Bernardino Mountains supports a large population, including the communities of Lancaster, Palmdale, Victorville, Hesperia, Apple Valley, and Barstow. Emissions from these areas, as well as military bases, highways, railroad facilities, cement manufacturing, and mineral processing activities within the MDAB contribute to the region's ozone precursor emissions (ARB 2001).
- The MDAB is also impacted by emissions from the San Joaquin Valley and the South Coast, although local emissions also contribute to poor air quality. The portion of the Mojave Desert immediately to the north of the San Gabriel and San Bernardino Mountains is heavily impacted by transport from the South Coast. Air monitoring stations at Hesperia and Phelan show the impact of surface transport through the Cajon Pass. In addition, transport aloft carries pollutants over the mountains to impact a broad area including Twentynine Palms and Lancaster-Palmdale areas. The air basin receives pollutants from the southern San Joaquin Valley. Violations in the town of Mojave in the eastern portion of Kern County are attributed entirely to this transport. The influence of pollutants from the San Joaquin Valley extends as far as Lancaster (ARB 2001).

3.3.1.1.1 Criteria Air Pollutants

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas, standards established for the prevention of environmental and property damage are called secondary standards. The FCAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

The following provides a summary discussion of the primary and secondary criteria air pollutants of primary concern. In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere.

1. **Ozone (O_3)** is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NO_X and volatile organic compounds (VOC), also referred to as reactive organic gases (ROG) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields 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 some man-made materials, such as rubber, paint, and plastics.

2. **Reactive Organic Gas (ROG)** is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

3. **Volatile Organic Compounds (VOC)** are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

4. **Oxides of Nitrogen (NO_X)** are a family of gaseous nitrogen compounds and are a precursor to the formation of ozone and particulate matter. The major component of NO_X, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

5. **Particulate Matter (PM)**, also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can

affect the heart and lungs and cause serious health effects. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

a. "Inhalable coarse particles ($PM_{2.5}$- PM_{10})," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.

b. "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.

c. "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossils fuels, meat, wood and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

- PM_{10}, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

  Numerous scientific studies have linked both long- and short-term particle pollution exposure to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short term exposures, although they may experience temporary minor irritation when particle levels are elevated.

6. **Carbon Monoxide (CO)** is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, California Air Resources Board (ARB) and U.S. EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM_{10}. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

7. **Sulfur Dioxide (SO_2)** is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_X, suspended SO_X particles contribute to the poor visibility. These SO_X particles can also combine with other pollutants to form $PM_{2.5}$. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

8. **Lead (Pb)** is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of

leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

9. **Hydrogen Sulfide (H_2S)** is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 ppm can cause death). OSHA regulates workplace exposure to H_2S.

3.3.1.1.2 Other Pollutants

The State of California Air Resources Board (ARB) has established air quality standards for some pollutants not addressed by Federal standards. The ARB has established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. The following section summarizes these pollutants and provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

1. **Sulfates (SO_4^{2-})** are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur 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 takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

   The ARB sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilator function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

2. **Visibility Reducing Particles** are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

3. **Vinyl Chloride (C_2H_3Cl or VCM)** is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

3.3.1.1.3 Odors

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g. fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Odors from domestic wastewater are typically a result of anaerobic biological activity in the sewer collection and wastewater treatment systems. Odors are most prevalent during warm weather conditions, which favor a more rapid multiplication of the anaerobic bacteria. In addition, sewage containing industrial wastes may have odor problems compounded by organic gases from waste chemicals added to the sewer system. The anaerobic decomposition of compounds containing nitrogen and sulfur results in a number of gases, including hydrogen sulfide, ammonia, carbon dioxide, methane, nitrogen, oxygen and hydrogen. Although many different combinations of gases can occur at any given time, the most offensive odors associated with domestic wastewater are typically the result of emissions of hydrogen sulfide gas.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The EKAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be subject to EKAPCD's Rule 419, Nuisance. Any actions related to odors would be based on citizen complaints to local governments and the EKAPCD.

3.3.1.1.4 Toxic Air Contaminants

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA), and are thus not subject to National or California ambient air quality standards (NAAQS and CAAQS, respectively). Instead, the U.S. EPA and the ARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with EKAPCD rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. The following provides a summary of the primary TACs of concern within the State of California and related health effects:

1. **Diesel Exhaust Particulate Matter (Diesel Exhaust PM or DPM)** was identified as a TAC by the ARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3 percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas

production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities (ARB 2013).

In October 2000, the ARB issued a report entitled: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles", which is commonly referred to as the Diesel Risk Reduction Plan (DRRP). The DRRP provides a mechanism for combating the DPM problem. The goal of the DRRP is to reduce concentrations of DPM by 85 percent by the year 2020, in comparison to year 2000 baseline emissions. The key elements of the DRRP are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices on diesel engines. When fully implemented, the DRPP will significantly reduce emissions from both old and new diesel fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the ARB continues to promote the use of alternative fuels and electrification. As a result of these actions, DPM concentrations and associated health risks in future years are projected to decline (ARB 2013).

Exposure to DPM can have immediate health effects. DPM can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, Exposure to DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, DPM has been identified as a carcinogen.

2. **Acetaldehyde** is a federal hazardous air pollutant. The ARB identified acetaldehyde as a TAC in April 1993. Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Sources of acetaldehyde include emissions from combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. A majority of the statewide acetaldehyde emissions can be attributed to mobile sources, including on-road motor vehicles, construction and mining equipment, aircraft, recreational boats, and agricultural equipment. Area sources of emissions include the burning of wood in residential fireplaces and wood stoves. The primary stationary sources of acetaldehyde are from fuel combustion from the petroleum industry (ARB 2013).

   Acute exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic intoxication of acetaldehyde resemble those of alcoholism. The U.S. EPA has classified acetaldehyde as a probable human carcinogen. In California, acetaldehyde was classified on April 1, 1988, as a chemical known to the state to cause cancer (U.S. EPA 2014; ARB 2013).

3. **Benzene** is highly carcinogenic and occurs throughout California. The ARB identified benzene as a TAC in January 1985. A majority of benzene emitted in California (roughly 88 percent) comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. These sources include on-road motor vehicles, recreational boats, off-road recreational vehicles, and lawn and garden equipment. Benzene is also formed as a partial combustion product of larger aromatic fuel components. To a lesser extent, industry-related stationary sources are also sources of benzene emissions. The primary stationary sources of reported benzene emissions are crude petroleum and natural gas mining, petroleum refining, and electric generation that involves the use of petroleum products. The primary area sources include residential combustion of various types such as cooking

and water heating (ARB 2013).

Acute inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidences of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. The U.S. EPA has classified benzene as known human carcinogen for all routes of exposure (U.S. EPA 2014).

4. **1,3-butadiene** was identified by the ARB as a TAC in 1992. Most of the emissions of 1,3-butadiene are from incomplete combustion of gasoline and diesel fuels. Mobile sources account for a majority of the total statewide emissions. Additional sources include agricultural waste burning, open burning associated with forest management, petroleum refining, manufacturing of synthetics and man-made materials, and oil and gas extraction. The primary natural sources of 1,3-butadiene emissions are wildfires (ARB 2013).

   Acute exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. Epidemiological studies have reported a possible association between 1,3-butadiene exposure and cardiovascular diseases. Epidemiological studies of workers in rubber plants have shown an association between 1,3-butadiene exposure and increased incidence of leukemia. Animal studies have reported tumors at various sites from 1,3-butadiene exposure. In California, 1,3-butadiene has been identified as a carcinogen.

5. **Carbon Tetrachloride** was identified by the ARB as a TAC in 1987 under California's TAC program (ARB 2013). The primary stationary sources reporting emissions of carbon tetrachloride include chemical and allied product manufacturers and petroleum refineries. In the past, carbon tetrachloride was used for dry cleaning and as a grain-fumigant. Usage for these purposes is no longer allowed in the United States. Carbon tetrachloride has not been registered for pesticidal use in California since 1987. Also, the use of carbon tetrachloride in products to be used indoors has been discontinued in the United States. The statewide emissions of carbon tetrachloride are small (about 1.96 tons per year), and background concentrations account for most of the health risk (ARB 2013).

   The primary effects of carbon tetrachloride in humans are on the liver, kidneys, and central nervous system. Human symptoms of acute inhalation and oral exposures to carbon tetrachloride include headache, weakness, lethargy, nausea, and vomiting. Acute exposures to higher levels and chronic (long-term) inhalation or oral exposure to carbon tetrachloride produces liver and kidney damage in humans. Human data on the carcinogenic effects of carbon tetrachloride are limited. Studies in animals have shown that ingestion of carbon tetrachloride increases the risk of liver cancer. In California, carbon tetrachloride has been identified as a carcinogen.

6. **Hexavalent chromium** was identified as a TAC in 1986. Sources of Hexavalent chromium include industrial metal finishing processes, such as chrome plating and chromic acid anodizing, and firebrick lining of glass furnaces. Other sources include mobile sources, including gasoline motor vehicles, trains, and ships (ARB 2013).

   The respiratory tract is the major target organ for hexavalent chromium toxicity, for acute and chronic inhalation exposures. Shortness of breath, coughing, and wheezing were reported from a case of acute exposure to hexavalent chromium, while perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, and other respiratory effects have been noted from chronic exposure. Human studies have clearly established that inhaled hexavalent chromium is

a human carcinogen, resulting in an increased risk of lung cancer. In California, hexavalent chromium has been identified as a carcinogen.

7. **Para-Dichlorobenzene** was identified by the ARB as a TAC in April 1993. The primary area-wide sources that have reported emissions of para-dichlorobenzene include consumer products such as non-aerosol insect repellants and solid/gel air fresheners. These sources contribute nearly all of the statewide para-dichlorobenzene emissions (ARB 2013).

   Acute exposure to paradichlorobenzene via inhalation results in irritation to the eyes, skin, and throat in humans. In addition, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans. The U.S. EPA has classified para-dichlorobenzene as a possible human carcinogen.

8. **Formaldehyde** was identified by the ARB as a TAC in 1992. Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Photochemical oxidation is the largest source of formaldehyde concentrations in California ambient air. Directly-emitted formaldehyde is a product of incomplete combustion. One of the primary sources of directly-emitted formaldehyde is vehicular exhaust. Formaldehyde is also used in resins, can be found in many consumer products as an antimicrobial agent, and is also used in fumigants and soil disinfectants. The primary area sources of formaldehyde emissions include wood burning in residential fireplaces and wood stoves (ARB 2013).

   Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute and chronic inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. Formaldehyde is classified as a probable human carcinogen.

9. **Methylene Chloride** was identified by the ARB as a TAC in 1987. Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic fabrication, and as a solvent in paint stripping operations. Paint removers account for the largest use of methylene chloride in California, where methylene chloride is the main ingredient in many paint stripping formulations. Plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers are stationary sources reporting emissions of methylene chloride (ARB 2013).

   The acute effects of methylene chloride inhalation in humans consist mainly of nervous system effects including decreased visual, auditory, and motor functions, but these effects are reversible once exposure ceases. The effects of chronic exposure to methylene chloride suggest that the central nervous system is a potential target in humans and animals. Human data are inconclusive regarding methylene chloride and cancer. Animal studies have shown increases in liver and lung cancer and benign mammary gland tumors following the inhalation of methylene chloride. In California, methylene chloride has been identified as a carcinogen.

10. **Perchloroethylene** was identified by the ARB as a TAC in 1991. Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos, and laboratory solvents. In California, the stationary sources that have reported emissions of perchloroethylene are dry cleaning plants, aircraft part and equipment manufacturers, and fabricated metal product manufacturers. The primary area sources include consumer products such as automotive brake cleaners and tire sealants and inflators (ARB 2013).

    Acute inhalation exposure to perchloroethylene vapors can result in irritation of the upper respiratory

tract and eyes, kidney dysfunction, and at lower concentrations, neurological effects, such as reversible mood and behavioral changes, impairment of coordination, dizziness, headaches sleepiness, and unconsciousness. Chronic inhalation exposure can result in neurological effects, including sensory symptoms such as headaches, impairments in cognitive and motor neurobehavioral functioning, and color vision decrements. Cardiac arrhythmia, liver damage, and possible kidney damage may also occur. In California, perchloroethylene has been identified as a carcinogen.

3.3.1.1.5 Asbestos

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Serpentine rock often contains chrysotile asbestos. Serpentine rock, and its parent material, ultramafic rock, is abundant in the Sierra foothills, the Klamath Mountains, and Coast Ranges. The Project sites, however, are not located in an area of known ultramafic rock.

Additional sources of asbestos include building materials and other manmade materials. The most common sources are heat-resistant insulators, cement, furnace or pipe coverings, inert filler material, fireproof gloves and clothing, and brake linings. Asbestos has been used in the United States since the early 1900's; however, asbestos is no longer allowed as a constituent in most home products and materials. Many older buildings, schools, and homes still have asbestos containing products. Various other laws have also been adopted, including laws related to the control of asbestos-containing materials during the renovation and demolition of buildings.

All types of asbestos are hazardous and may cause lung disease and cancer. Health risks to people are dependent upon their exposure to asbestos. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem. Asbestos-related disease, such as lung cancer, may not occur for decades after breathing asbestos fibers. Cigarette smoking increases the risk of lung cancer from asbestos exposure.

3.3.1.1.6 Valley Fever

Valley fever is an infection caused by the fungus Coccidioides. The scientific name for valley fever is "coccidioidomycosis," and it is also sometimes called "desert rheumatism". The term "valley fever" usually refers to Coccidioides infection in the lungs, but the infection can spread to other parts of the body in severe cases.

Coccidioides spores circulate in the air after contaminated soil and dust are disturbed by humans, animals, or the weather. The spores are too small to see without a microscope. When people breathe in the spores, they are at risk for developing valley fever. After the spores enter the lungs, the person's body temperature allows the spores to change shape and grow into spherules. When the spherules get large enough, they break open and release smaller pieces (called endospores) which can then potentially spread within the lungs or to other organs and grow into new spherules. In extremely rare cases, the fungal spores can enter the skin through a cut, wound, or splinter and cause a skin infection.

Symptoms of valley fever may appear between one and three weeks after exposure. Symptoms commonly include fatigue, coughing, fever, shortness of breath, headaches, night sweats, muscle aches and joint pain, and rashes on the upper body or legs.

Approximately 5 to 10 percent of people who get valley fever will develop serious or long-term problems in their lungs. In an even smaller percent of people (about one percent), the infection spreads from the lungs to other parts of the body, such as the central nervous system (brain and spinal cord), skin, or bones and joints. Certain groups of people may be at higher risk for developing the severe forms of valley fever, such as people who have weakened immune systems. The fungus that causes valley fever, Coccidioides, cannot spread from

the lungs between people or between people and animals. However, in extremely rare instances, a wound infection with Coccidioides can spread valley fever to someone else, or the infection can be spread through an organ transplant with an infected organ.

For many people, the symptoms of valley fever will go away within a few months without any treatment. Healthcare providers choose to prescribe antifungal medication for some people to try to reduce the severity of symptoms or prevent the infection from getting worse. Antifungal medication is typically given to people who are at higher risk for developing severe valley fever. The treatment typically occurs over a period of roughly 3 to 6 months. In some instances, longer treatment may be required. If valley fever develops into meningitis, life-long antifungal treatment is typically necessary.

Between the years 1998 to 2012, nearly 130,000 valley fever cases were reported to the Centers for Disease Control (CDC). In states where valley fever is endemic and reportable (Arizona, California, Nevada, New Mexico, and Utah), overall incidence in 2011 was 42.6 cases per 100,000 population and was highest among persons aged 60-79 years. In Kern County, there are approximately 500 cases of Valley Fever reported in a typical year. However, during epidemic years, the number of reported cases can increase to 1,500, or more. The number of reported cases within Kern County during the last four years has ranged from a low of 1,724 in 2013 to a high of 2,745 in 2011. During epidemic years, deaths due to valley fever increase to more than 12 people per year.

Scientists continue to study how weather and climate patterns affect the habitat of the fungus that causes valley fever. Coccidioides is thought to grow best in soil after heavy rainfall and then disperse into the air most effectively during hot, dry conditions. For example, hot and dry weather conditions have been shown to correlate with an increase in the number of valley fever cases in Arizona and in California. The ways in which climate change may be affecting the number of valley fever infections, as well as the geographic range of Coccidioides, is not known yet, but is a subject for further research.

3.3.1.1.7 Ambient Air Quality

Air pollutant concentrations are measured at several monitoring stations in the MDAB. The Ridgecrest-100 West California Avenue and Mohave-923 Poole Street monitoring stations are the closest representative monitoring stations to the proposed Alternative sites with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. The Ridgecrest-100 West California Avenue monitoring station monitors ambient concentrations of PM_{10} and $PM_{2.5}$. Ambient concentrations of ozone were obtained from the Mohave-923 Poole Street monitoring station. Ambient monitoring data were obtained for the last three years of available measurement data (i.e. 2012 through 2014) and are summarized in **Table 3-1**. As depicted, the state and federal ozone and PM standards were exceeded on numerous occasions during the past 3 years.

Table 3-1. Summary of Ambient Air Quality Monitoring Data

Summary of Ambient Air Quality Monitoring Data			
Pollutant	Monitoring Year		
	2012	2013	2014
Ozone[1]			
Maximum concentration (1-hour/8-hour average)	0.096/0.086	0.094/0.086	0.104/0.095
Number of days state/national 1-hour standard exceeded	1/0	0/0	9/0
Number of days state/national 8-hour standard exceeded	55/29	29/9	95/57
Suspended Particulate Matter ($PM_{2.5}$)[2]			
Maximum concentration (state/national)	11.2/11.2	15.3/15.3	10.5/10.5
Annual Average (state/national)	NA/NA	NA/5.4	4.7/4.6

Suspended Particulate Matter (PM_{10})[2]			
Maximum concentration (state/national)	41.5/43.3	51.4/56.4	47.6/51.8
Number of days state standard exceeded (measured/calculated)[3]	0/0	1/NA	0/0
Number of days national standard exceeded (measured/calculated)[3]	0/0	0/0	0/0

ppm = parts per million by volume, µg/m³ = micrograms per cubic meter, NA=Not Available
1. Based on ambient concentrations obtained from the Mohave-923 Poole Street Monitoring Station.
2. Based on ambient concentrations obtained from the Ridgecrest-100 West California Avenue Monitoring Station
3. Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.

Source: ARB 2016a

3.3.2 Regulatory Setting

Air quality within the NCCAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the EKAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

3.3.2.1 Federal

3.3.2.1.1 U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act: The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in **Table 3-2**.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

Table 3-2. NAAQS Summary

NAAQS Summary			
Pollutant	**Averaging Time**	**California Standards***	**National Standards* (Primary)**
Ozone (O_3)	1-hour	0.09 ppm	–
	8-hour	0.070 ppm	0.075 ppm
Particulate Matter	AAM	20 µg/m³	–

NAAQS Summary			
Pollutant	**Averaging Time**	**California Standards***	**National Standards* (Primary)**
(PM_{10})	24-hour	50 µg/m^3	150 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	12 µg/m^3
	24-hour	No Standard	35 µg/m^3
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9 ppm	9 ppm
	8-hour (Lake Tahoe)	6 ppm	–
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppb
Sulfur Dioxide (SO_2)	AAM	–	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	3-hour	–	0.5 ppm (1300 µg/m^3)**
	1-hour	0.25 ppm	75 ppb
Lead	30-day Average	1.5 µg/m^3	–
	Calendar Quarter	–	1.5 µg/m^3
	Rolling 3-Month Average	–	0.15 µg/m^3
Sulfates	24-hour	25 µg/m^3	No Federal Standards
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent.	

** For more information on standards visit :http//ww.arb.ca.gov.research/aaqs/aaqs2.pdf*
***Secondary Standard*
Source: ARB 2016b

3.3.2.1.2 National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the U.S. EPA established the National Emission Standards for Hazardous Air Pollutants. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

3.3.2.2 State

3.3.2.2.1 California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in **Table 3-3** . The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used. Table 3-3. CAAQS

Pollutant	Averaging Time	California Standards*	National Standards* (Primary)
Ozone (O_3)	1-hour	0.09 ppm	–
	8-hour	0.070 ppm	0.075 ppm
Particulate Matter (PM_{10})	AAM	20 µg/m^3	–
	24-hour	50 µg/m^3	150 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	12 µg/m^3
	24-hour	No Standard	35 µg/m^3
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9 ppm	9 ppm
	8-hour (Lake Tahoe)	6 ppm	–
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppb
Sulfur Dioxide (SO_2)	AAM	–	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	3-hour	–	0.5 ppm (1300 µg/m^3)**
	1-hour	0.25 ppm	75 ppb
Lead	30-day Average	1.5 µg/m^3	–
	Calendar Quarter	–	1.5 µg/m^3
	Rolling 3-Month Average	–	0.15 µg/m^3
Sulfates	24-hour	25 µg/m^3	No Federal Standards
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent.	

** For more information on standards visit :http//ww.arb.ca.gov.research/aaqs/aaqs2.pdf*
***Secondary Standard*
Source: ARB 2016b

3.3.2.2.2 California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

3.3.2.2.3 Assembly Bills 1807 & 2588 – Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

3.3.2.2.4 Portable Equipment Registration Program

Owners or operators of portable engines and certain other types of equipment can register their units under the ARB's Statewide Portable Equipment Registration Program (PERP). PERP allows registered equipment to be operated throughout California without having to obtain individual permits from local air districts. To qualify, equipment must meet eligibility requirements, including applicable emissions standards.

3.3.2.3 Local

3.3.2.3.1 East Kern Air Pollution Control District

The EKAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained. Responsibilities of the EKAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The EKAPCD Rules and Regulations that are applicable to the proposed Project Alternatives include, but are not limited to, the following:

1. **Rule 201, Permits Required:** Rule 201 establishes permitting requirements for existing, modified and new stationary sources of emissions.
2. **Rule 210.9, Construction or Reconstruction of Major Stationary Sources of Hazardous Air Pollutants:** Rule 210.9 requires all new and reconstructed major sources of hazardous air pollutants (HAPs) to utilize Best Available Control Technology for air toxics (TBACT).
3. **Rule 402, Fugitive Dust:** Rule 402 addresses significant man-made dust sources from specified outdoor fugitive dust producing activities, which include: handling, storage, and transport of bulk storage piles, construction, demolition, excavation, extraction, and other earthmoving activities.
4. **Rule 419, Nuisance:** Rule 419 states that a person shall not discharge, from any source, quantities of contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or

safety of such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.

5. **Rule 422, New Source Performance Standards:** Rule 422 establishes standards, criteria and requirements that are applicable to new emission sources. Rule 422 incorporates the provisions of CFR Title 40, Chapter I, Parts 60. This regulation includes various requirements specific to new stationary sources of emissions including spark ignition internal combustion engines.

3.3.2.3.2 Kern County APCD California Clean Air Act Ozone Air Quality Attainment Plan

Kern County APCD's California Clean Air Act Ozone Air Quality Attainment Plan was approved by the ARB on February 18, 1993. The AQAP identifies measures to reduce emissions from stationary sources located within the EKAPCD. As a moderate ozone nonattainment area, EKAPCD is required to adopt retrofit Reasonably Available Control Technology rules and regulations for all sources of ozone precursor emissions. Transportation control measures are no longer included in the AQAP. The latest ozone attainment report, released in 2005, identified significant reductions in ozone emissions due, in part, to implementation of stationary source rules and regulations, as well as, reduction in pollutant transport from upwind locations (EKAPCD 2005).

3.3.2.3.3 City of Ridgecrest General Plan

The City of Ridgecrest General Plan Health & Safety Element includes policies to reduce the generation of air pollutants, to promote alternative methods of transportation, and to maximize the quality of life of City residents. Applicable policies and implementation measures are summarized below (City of Ridgecrest 2009).

1. **Policy HS-2.7 Construction Methods:** The City shall require developments to be located, designed and constructed in a manner that would minimize the production of air pollutants and avoid land use conflicts.
2. **Policy HS-2.9 Air Pollution Control Technology:** The City shall utilize the Best Available Control Measures (BACM) and Reasonably Available Control Measures (RACM) as adopted by the City to maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.
3. **Policy HS-2.10 Cumulative Air Quality Impacts:** The City shall require developments to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts. Developers shall be required to present alternatives that reduce air emissions and enhance, rather than harm, the environment.
4. **Policy HS-2.11 Dust Suppression Measures:** The City shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to, the following:
    a. Site watering or application of dust suppressants,
    b. Phasing or extension of grading operations,
    c. Covering of stockpiles,
    d. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour),
    e. Revegetation of graded areas.
5. **Policy HS-2.12 Indirect Source Review:** The City shall require major development projects, as defined by the EKAPCD, to mitigate air quality impacts associated with the Project Alternatives. As feasible the City shall work with EKAPCD to determine mitigations that may include, but are not limited to the following:

a. Providing bicycle access and parking facilities,

b. Increasing density,

c. Encouraging mixed use developments,

d. Providing walkable and pedestrian-oriented neighborhoods,

e. Providing increased access to public transportation,

f. Providing preferential parking for high-occupancy vehicles, car pools, or alternative fuels vehicles,

g. Establishing telecommuting programs or satellite work centers.

6. **Policy HS-2.13 Paving or Treatment of Roadways for Reduced Air Emissions:** The City shall require that all new roads be paved or treated to reduce dust generation where feasible. For new projects with unpaved roads, funding for roadway maintenance shall be addressed and secured prior to development approval.

3.3.3 Methodology

From Appendix B: "Short-term construction emissions of were quantified using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, based on estimated construction schedules, vehicle use, and off-road equipment anticipated to be required for construction. Emissions were calculated for both daily and annual conditions. Maximum daily and annual emissions were quantified based on the preliminary construction schedule anticipated to be required, including overlapping activities. Construction information would be similar for both alternatives. Refer to Appendix A for emissions modeling assumptions and results.

"Long-term operational emissions associated with energy use and motor vehicle use were quantified using the CalEEMod computer program based on project-specific information. Evaporative emissions associated with primary emission-source processes were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions from Publicly Owned Treatment Works (POTWs)*(1994). These emission factors were developed in a cooperative effort of POTWs and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP), the Joint Emissions Inventory Program (JEIP) submitted to the SCAQMD per Rule 1179, and toxics inventories from individual California POTWs. Evaporative VOC emissions were calculated based on average-daily flow rates of 2.6 million gallons per day (mgd) for existing/no-build conditions and 3.6 mgd for proposed build conditions.

"Long-term increases of toxic air contaminants were quantified based on emission factors derived from the TriTAC Guidance Document on Control Technology for VOC Air Emissions from Publicly Operated Treatment Works for primary TAC emission sources. Potential short-term exposure to TACs and associated health risks were assessed based on a screening-level health risk assessments prepared for onsite evaporative emissions of TACs and the proposed emergency generator. To ensure a conservative analysis, the generator was assumed to be diesel fueled. The generator was assumed to operate 200 hours per year, in accordance with EKAPCD's permitting limitations.

"Localized concentrations of CO were qualitatively assessed utilizing commonly applied screening methodologies identified in Caltran's Transportation Project-Level Carbon Monoxide Protocol (CO Protocol, 1996). Mobile-source emissions of CO are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. For this reason, modeling of mobile-source CO concentrations is typically

recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e. LOS E or F). Localized CO concentrations associated with the proposed Project Alternatives would be considered less-than-significant impact if: (1) traffic generated by the proposed project would not result in deterioration of a signalized intersection to a level of service (LOS) of E or F; or (2) the project would not contribute additional traffic to a signalized intersection that already operates at LOS of E or F. In instances where the project exceeds these screening criteria, detailed dispersion modeling is recommended to further evaluate potential impacts in comparison to applicable ambient air quality standards (Caltrans 1996).

"Potential exposure of nearby sensitive receptors to odorous emissions was qualitatively assessed, based on a review of project-generated emissions, proposed treatment processes, the location of nearby sensitive receptors, and odor-complaint information obtained from the EKAPCD" (Appendix B).

3.3.4 Impact Assessment

3.3.4.1 III-a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Alternatives 1 and 2: **Less Than Significant Impact.** Projects that would result in a significant increase in emissions, in excess of EKAPCD significance thresholds, would also be considered to potentially conflict with or obstruct implementation of applicable air quality attainment plans. As noted in Impact III-c, the proposed Project Alternatives would not result in significant short-term or long-term increases of criteria air pollutants that would exceed applicable thresholds. As a result, implementation of the proposed Project Alternatives is not anticipated to result in a substantial increase in either direct or indirect emissions that would conflict with or obstruct implementation of applicable air quality plans. This impact is considered less than significant.

No Project Alternative: **No Impact.** Under the No Project Alternative, no changes would be made to the existing environment. The environmental baseline would be maintained and no impact would occur.

3.3.4.2 III-b) Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporated.** As discussed in Impacts III-c, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a potentially significant impact. With incorporation of Mitigation Measure AQ-1, this impact would be considered less than significant.

No Project Alternative: **No Impact.** Under the No Project Alternative, no changes would be made to the existing environment. The environmental baseline would be maintained and no impact would occur.

3.3.4.3 III-c) Would the Project 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporated.** Given the similarities of either Alternative's planned construction and operation phases, the following analysis applies to both Alternative 1 and 2.

Short-term Construction: Construction of improvements for both alternatives would be similar, including the construction of treatment basins, clarifiers, lift stations, oxidation ditches, solids handling facilities, disinfection, and associated appurtenances. Most of the area within either the City site or the NAWS site will be disturbed and the resulting improvements will consist of basins, buildings, and paved or gravel areas. Construction of the proposed improvements for both alternatives would occur over an estimated 24-month period, beginning in 2017. The Project Alternatives' construction schedules would depend on a number of factors including regulatory approvals, funding commitments, and contractor availability and scheduling.

Short-term increases in emissions would occur during the construction process. Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed Project Alternatives would result in the temporary generation of emissions associated with various activities, including site preparation, grading, excavation, concrete work, installation of piping and electrical, and building construction. Emissions would be largely associated with off-road equipment use. Estimated construction-generated emissions are summarized in **Table 3-4**.

Table 3-4. Uncontrolled Construction-Generated Emissions of Criteria Air Pollutants Project Alternatives 1 & 2

Uncontrolled Construction-Generated Emissions of Criteria Air Pollutants Project Alternatives 1 & 2						
Construction Activity	Annual Emissions (Tons/Year)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction Year 1						
Mobilization	0.0	0.02	0.06	0.00	0.01	0.00
Grading & Site Work	0.13	1.48	0.99	0	0.20	0.13
Excavation	0.23	2.69	1.76	0.0	0.43	0.26
Concrete Work	0.02	0.21	0.16	0.00	0.02	0.01
Equipment Installation	0.02	0.23	0.12	0.00	0.01	0.01
Site Piping & Electrical	0.01	0.08	0.08	0.00	0.01	0.01
Total:	0.42	4.70	3.17	0.00	0.68	0.42
Significance Thresholds:	*25*	*25*	*--*	*27*	*15*	*--*
Exceed Thresholds?	*No*	*No*	*N/A*	*No*	*No*	*N/A*
Construction Year 2						
Concrete Work	0.03	0.28	0.24	0.00	0.02	0.02
Equipment Installation	0.07	0.69	0.35	0.00	0.04	0.04
Building Construction	0.02	0.10	0.13	0.00	0.02	0.01
Site Piping & Electrical	0.01	0.12	0.13	0.00	0.02	0.01
Final Grading & Paving	0.05	0.46	0.37	0.00	0.03	0.03
Startup	0.00	0.01	0.04	0.00	0.01	0.00
Total:	0.18	1.66	1.25	0.00	0.14	0.10
Significance Thresholds:	*25*	*25*	*--*	*27*	*15*	*--*
Exceed Thresholds?	*No*	*No*	*N/A*	*No*	*No*	*N/A*

Construction Activity	Daily Indirect Emissions (lbs/day)(1)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Worker & Haul Truck Trips	*0.3*	1.1	4.6	0.0	1.1	0.3
Significance Thresholds[2]:	*137*	*137*	--	--	--	--
Exceed Thresholds?	*No*	*No*	*N/A*	*N/A*	*N/A*	*N/A*

Emissions were quantified using CalEEMod, version 2013.2.2. Totals may not sum due to rounding.
1. EKAPCD daily emissions threshold applies to indirect on-road mobile-sources only. These thresholds typically apply to operational emissions, but have been included to ensure a conservative analysis of construction-generated emissions.
-- No applicable threshold. Refer to Appendix B for modeling results and assumptions.

During the initial year of construction, the proposed Project Alternatives would generate maximum uncontrolled annual emissions of approximately 0.4 tons/year of ROG, 4.7 tons/year of NO_x, 3.2 tons/year of CO, 0.7 tons/year of PM_{10}, and 0.4 tons/year of $PM_{2.5}$. During the second year of construction, the proposed Project Alternatives would generate maximum uncontrolled annual emissions of approximately 0.2 tons/year of ROG, 1.7 tons/year of NO_x, 1.3 tons/year of CO, 0.1 tons/year of PM_{10} and $PM_{2.5}$. Daily indirect construction-generated emissions of ROG and NO_X would be less than one pound per day. Construction-generated emissions would not exceed applicable EKAPCD significance thresholds. However, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a potentially significant impact.

3.3.5 Mitigation Measures

In order to reduce this potentially significant impact to less than significant, Mitigation Measure AQ-1 is recommended to be incorporated as follows:

AQ-1: The following measures for the control of construction-generated PM shall be implemented:

a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.

b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g. worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available.

c. Reduce and/or phase the amount of the disturbed area (e.g. grading, excavation) where possible.

d. All disturbed areas shall be sufficiently watered or stabilized by EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available.

e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or nearby occupied structures.

f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips,

g. All active and inactive disturbed surface areas shall be compacted, where feasible.

h. Limit equipment and vehicle access to disturbed areas.

i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities

j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust.

k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust.

l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering.

m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114.

n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.

o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-out/deposition of soil onto nearby paved roadways.

p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.

q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g. portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD.

r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.

s. Off-road equipment shall be maintained and properly tuned in accordance with manufacturer recommendations.

t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible.

u. Alternatively fueled equipment (e.g. electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available.

v. All on-road and off-road equipment shall be fitted with emission control devices (e.g. diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations.

w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.

- Incorporation of the proposed Mitigation Measure **AQ-1** would reduce fugitive dust emissions by approximately 50 to 61 percent. Additional measures have also been included that would reduce emissions of diesel PM from on-road vehicles and off-road equipment. Implementation of **AQ-1** would also ensure compliance with applicable EKAPCD rules and regulations, including Rule 402, which imposes limitations on visible dust emissions at offsite locations and Rule 419 for nuisance-related impacts. With mitigation, this impact would be considered less than significant.

Long-Term Operation: As noted earlier in this report, emissions of ozone-precursor pollutants (i.e. VOCs and NOx) are the regional pollutants of primary concern within the basin. Primary emission sources associated with the operation of the WWTP include evaporative emissions of VOCs that occur during the treatment process, mobile-source emissions associated with the vehicle trips to and from the facility, as well as occasional emissions from onsite stationary combustion sources. Operational emissions associated with the plant's primary emission sources are discussed separately, as follows:

3.3.5.1.1 Wastewater Treatment Evaporative Emissions

Evaporative emissions of VOCs are typically associated with water treatment facilities that contain high levels of VOCs in the wastewater influent, such as water treatment facilities at industrial and agricultural uses. Wastewater influent at municipal WWTPs typically includes influent generated by residential, institutional, and commercial land uses, which typically contain only trace levels of VOCs. The City of Ridgecrest's sewer service area is primarily consists of residential, retail, and light commercial/industrial uses. As a result, the waste sources and evaporative emissions of VOCs associated with existing and proposed WWTP operations are anticipated to be minor.

For municipal WWTPs, a majority of the VOCs commonly found in wastewater influent are often associated with the use of paint solvents, cleaning solutions, degreasing solutions, gasoline, and pesticides. However, the amount and types of industrial operations with waste discharges into municipal sewer systems are typically considered negligible, in part, due to existing regulatory discharge requirements. For instance, the U.S. EPA has established pretreatment standards for the discharge of industrial pollutants to publicly owned wastewater treatment facilities as part of the National Pretreatment Program. In California, the Regional Water Quality Control Board (RWQCB) implements this program and determines whether industrial discharges within a sewer service area warrant the permittee being subject to the pretreatment regulations. Source control measures are often considered the most effective method of reducing concentrations of VOCs in wastewater influent from industrial facilities. With incorporation of industrial source control measures, evaporative emissions of VOCs from municipal WWTPs are typically minor and, as a result, municipal WWTPs are typically not considered major sources of VOCs.

Sources of VOCs at municipal WWTPs are primarily associated with processes that result in the surface volatilization of emissions, particularly during the activated sludge process and secondary clarification, as well as surface volatilization during the thickening, dewatering, and handling of biosolids. Evaporative emissions associated with primary emission-source processes were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions form POTWs* (1994). These emission factors were developed in a cooperative effort of publicly-owned treatment works (POTWs) and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were

derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP), the Joint Emissions Inventory Program (JEIP) submitted to the SCAQMD per Rule 1179, and toxics inventories from individual California POTWs. These emissions factors are flow-based, specific to the individual treatment processes, and are considered to provide a conservative estimation of emissions.

Evaporative emissions were quantified for existing/no-build and proposed Project Alternatives, based on an existing average-daily flow rate of 2.6 mgd and an average-daily flow rate of 3.6 mgd. Because the treatment processes for proposed Project Alternatives would be similar, evaporative emissions associated with the proposed Project Alternatives would be similar. Evaporative VOC emissions for existing conditions/No-Project Alternative and proposed Project Alternatives are summarized in **Table 3-5**.

Table 3-5. Wastewater Treatment Plant Process VOC Emissions

Wastewater Treatment Plant Process VOC Emissions	
Process	**VOC Emissions (lbs/year)** [1]
Existing Conditions/No Project Alternative	
Headworks	0.3
Grit Removal	1.6
Primary Sedimentation	104.0
Flow Equalization	278.1
Activated Sludge	78.0
Secondary Clarifiers	31.2
Effluent Evaporation Ponds	1,361.3
Sludge Digestion	0.1
Sludge Drying Beds	33.8
Total Emissions (lbs/year):	1,966.3
Total Emissions (tons/year):	1.0
Proposed Alternatives	
Headworks	310.9
Grit Removal	2.2
Activated Sludge	108.0
Secondary Clarifiers	43.2
Effluent Filtration	1.1
Chlorination	1.6
Effluent Evaporation Ponds	1,884.8
Sludge Digestion	36.9
Sludge Dewatering	216.0
Sludge Cake Storage	22.0
Sludge Cake Truck Loading	6.3
Sludge Drying Beds	46.8
Total Emissions (lbs/year):	2,679.7
Total Emissions (tons/year):	1.3

Emissions were calculated using emission factors derived from Tri-TAC Guidance Document on Control Technology for VOC Air Emissions from POTWs (1994) based on an average flow rate of 2.6 mgd for existing/no-project conditions and 3.6 mgd for proposed project build alternatives 1 and 2.

Additional sources of criteria air pollutants would include minor emissions associated with motor vehicle use, energy use, area sources (e.g. use of cleaning products, architectural coatings, etc.) In comparison to existing operations, the proposed Project Alternatives would result in an increase of approximately 10 employee trips/day and roughly 48 haul truck trips/month. In addition, the proposed Project Alternatives would also include the installation of an emergency standby power generator for use during power outages. The generator will be sized to operate all essential pumps, process equipment, and control systems. Based on preliminary estimates, an approximate 750 kW generator would be required. The existing generator would be required to comply with EKAPCD's permitting requirements and operational limitations. Accordingly, the emergency standby power generator would only be operated for maintenance, testing, required regulatory purposes, and during emergency situations.

Operational emissions associated with existing and proposed Project conditions, including evaporative VOC emissions and emissions from mobile, stationary, and area sources, are summarized in **Table 3-6**. In comparison to existing conditions, the proposed project alternatives would result in overall net increases of approximately 0.4 lbs/day of ROG, 0.5 lbs/day of NO_X, and 0.8 lbs/day of CO. Operational emissions of SO_X and PM would be negligible, approximately 0.04, or less. The proposed Project Alternatives would not result in increased emissions of criteria air pollutants that would exceed applicable significance thresholds. This impact is considered less than significant. No mitigation is required.

Table 3-6. Summary of Operational Emissions of Criteria Air Pollutants Direct and Indirect Sources

Summary of Operational Emissions of Criteria Air Pollutants Direct and Indirect Sources						
Construction Activity	Annual Emissions (Tons/Year) [1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Conditions/No-Project Alternative						
WWTP Process Emissions	1.0					
Area Sources	0.01	0.00	0.00	0.00	0.00	0.00
Motor Vehicle Use [2]	0.00	0.02	0.05	0.00	0.01	0.00
Total:	*1.01*	*0.02*	*0.05*	*0.00*	*0.01*	*0.00*
Proposed Alternatives						
WWTP Process Emissions	1.3					
Area Sources	0.04	0.00	0.00	0.00	0.00	0.00
Emergency Generator [3]	0.02	0.14	0.08	0.00	0.00	0.00
Motor Vehicle Use [4]	0.05	0.36	0.72	0.00	0.05	0.02
Total:	*1.41*	*0.50*	*0.80*	*0*	*0.05*	*0.02*
Net Increase Compared to Existing:	*0.40*	*0.48*	*0.75*	*0*	*0.04*	*0.02*
Significance Thresholds:	*25*	*25*	*--*	*27*	*15*	*--*
Exceed Thresholds?	*No*	*No*	*N/A*	*No*	*No*	*N/A*

1. Emissions were quantified using CalEEMod, version 2013.2.2. Emissions associated with energy use and waste generation are negligible. Daily indirect source emissions of ROG, NO_X, SO_X, and PM_{10} for no-build and proposed build alternatives would be approximately 0.1 lbs/day, or less, and would not exceed EKAPCD's significance thresholds of 137 lbs/day.
2. Assumes two employees daily; 16 septage haul truck trips monthly.
3. Assumes a maximum of 200 hours annually, In accordance with EKAPCD permitting requirements.
4. Assumes 12 employees daily; 24 septage and 30 biosolids removal haul truck trips monthly.

-- No applicable threshold. Refer to Appendix B for modeling results and assumptions.

No Project Alternative: Under the No Project Alternative, no changes would be made to the existing environment. The environmental baseline would be maintained and no impact would occur.

3.3.5.2 III-d) Would the Project expose sensitive receptors to substantial pollutant concentrations?

Alternatives 1 and 2: **Less Than Significant Impact.**

Short-Term Exposure: Implementation of the proposed Project would result in short-term emissions of fugitive PM associated with Project Alternative construction. Localized pollutants of primary concern typically associated with construction projects are commonly associated with increased emissions of PM generated by ground disturbance, including site preparation and grading. However, as previously noted, the proposed Project Alternatives would not require the demolition of existing structures, nor would the proposed Project Alternatives result in emissions that would exceed EKAPCD significance thresholds. Compliance with applicable EKAPCD rules and regulations, including but not limited to Rule 402, would minimize potential nuisance impacts to occupants of nearby land uses and would also minimize potential exposure of nearby sensitive receptors to Coccidioides spores which may become airborne during soil disturbance activities (e.g. grading, excavation, etc.). As previously discussed, exposure to Coccidioides spores could result in increased occurrences of Valley Fever.

Long-Term Exposure: **Carbon Monoxide (CO)** is an odorless, colorless gas formed when carbon in fuel is not burned completely; a component of combustion emissions. CO reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system, and impairs vision, causes dizziness, and can also lead to unconsciousness or death. Carbon monoxide transport is extremely limited and disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to emission sources, such as congested roadways or intersections, may reach unhealthy levels. Localized concentrations of CO can adversely affect nearby sensitive receptors (residents, school children, hospital patients, the elderly, etc.). As a result, CO emissions are typically evaluated at a local rather than regional level.

In comparison to existing conditions, the proposed alternatives would result in an increase of approximately ten employee trips/day and roughly 38 haul truck trips/month. The proposed alternatives would not result in a substantial increase in vehicle trips that would affect nearby intersection operations. As a result, implementation of the proposed Project Alternatives would not result in a significant contribution to nearby roadway intersections. Based on this information and given the relatively low background CO concentrations in the project area, this impact would be considered less than significant. No mitigation is required.

Increases of **Toxic Air Contaminants (TACs)** associated with the proposed Project Alternatives would be primarily associated with the operation of the proposed onsite emergency generator (if diesel powered), as well as, evaporative emissions of TACs from onsite treatment processes. TAC emissions and associated health risks associated with the proposed Project Alternatives are discussed, as follows:

- Emergency Generator (Alternatives 1 & 2): As previously noted, the proposed Project Alternatives would include the installation of an emergency standby power generator for use during power outages. The specifications for the generator, including size and fuel source, have not yet been

identified. However, based on preliminary estimates, an approximate 750 kW generator would be required. The existing generator would be required to comply with EKAPCD's permitting requirements and operational limitations. Accordingly, the emergency standby power generator would only be operated for maintenance, testing, required regulatory purposes, and during emergency situations. The emergency generator would be located at the proposed WWTP. Under Alternative 1, the nearest sensitive receptors include residential dwellings located approximately 1,750 feet to the southeast of the proposed plant. Under Alternative 2, nearest residences are located approximately 960 feet to the east of the proposed plant.

- Wastewater Treatment Process Emissions: As with emissions of VOCs/ROGs discussed earlier in this report, evaporative TACs emitted by WWTPs are typically considered minor. Because most emissions of TACs occur during the treatment process in which dissolved volatile organic compounds are volatilized, emissions of TACs are generally considered to be roughly proportional to the wastewater influent flow rates associated with the individual treatment processes. Evaporative emissions were quantified based on an existing flow rate of 2.6 mgd and a projected project flow rate of 3.6 mgd. A screening-level health risk assessment was prepared to analyze cancer, chronic non-cancer, and acute non-cancer health risks. The annual emissions of TACs and associated health risks are summarized in **Table 3-7** and discussed below. Emissions modeling assumptions and results are included in Appendix B. As depicted, the proposed alternatives would result in predicted cancer risks of less than one in ten million and the predicted hazard index for non-cancer acute and chronic risks would be less than one at the nearest sensitive receptor.

- For the assessment of potential health-related impacts associated with TACs, the EKAPCD has established stationary source cancer-risk thresholds of 10 in one million and a non-cancer risk hazard index of one. Stationary emission sources that exceed these thresholds would be considered to have a potentially significant impact. Based on the screening-level health risk assessments conducted, combined health risks associated with the operation of the proposed emergency generator and evaporative TAC emissions with treatment processes would result in a predicted cancer risk at the nearest receptor of 0.24 in one million for Alternative 1 and 0.84 in one million for Alternative 2. The hazard index for both acute and chronic non-cancer inhalation risk at the nearest receptors would be 0.02, or less, for Alternative 1 and 0.06, or less, for Alternative 2. Predicted cancer and non-cancer health risks would not exceed EKAPCD's significance thresholds.

- It is also important to note that the proposed emergency generator would be required to comply with EKAPCD permitting requirements. In particular, EKAPCD Rule 201 establishes permitting requirements for stationary sources. In the event that the emergency generator is diesel fueled, implementation of TBACT may also be required, in accordance with Rule 210.9. Compliance with EKAPCD rules and regulations would ensure that health risks to nearby receptors would not exceed applicable standards. For these reasons, this impact would be considered less than significant. No mitigation is required.

Table 3-7. Operational TACs & Health Risks Associated with Water Treatment Processes

Operational TACs & Health Risks Associated with Water Treatment Processes			
TACs	Emissions (lbs/year)		
	No-Project Alternative[1]	Proposed Project Alternative 1[2]	Proposed Project Alternative 2[3]
Benzene	0.1	9.0	9.0
Ethyl-Benzene	0.1	11.9	11.9
Toluene	0.5	72.1	72.1

Operational TACs & Health Risks Associated with Water Treatment Processes			
TACs	Emissions (lbs/year)		
	No-Project Alternative[1]	Proposed Project Alternative 1[2]	Proposed Project Alternative 2[3]
Xylenes	0.0	22.8	22.8
Chloroform	10.4	14.3	14.3
Methylene Chloride	19.4	26.7	26.7
Tetrachloroethylene	13.2	18.2	18.2
1,1,1-Trichloroethane	7.7	10.6	10.6
Acetone	81.4	60.5	60.5
Methyl Ethyl Ketone (MEK)	16.3	12.1	12.1
Methyl Isobutyl Ketone (MIBK)	14.7	11.0	11.0
Distance to Nearest Sensitive Land Use (feet):	1,575	1,750	960
Carcinogenic Risk:	0.003	0.01	0.1
Significance Threshold[4]:	10	10	10
Exceeds Cancer Risk Threshold?	No	No	No
Non-Carcinogenic Acute Risk:	0.001	0.001	0.01
Non-Carcinogenic Chronic Risk:	0.000	0.001	0.00
Significance Threshold[4]:	1	1	1
Exceeds Non-Cancer Risk Thresholds?	No	No	No

1. Based on distance of 1,575 feet to the nearest receptor to the existing WWTP boundary.
2. Based on distance of 1,750 feet to the nearest receptor to the proposed WWTP boundary.
3. Based on distance of 960 feet to the nearest receptor to the proposed WWTP boundary.
4. The significance threshold for increased cancer risk is ten in one million. Non-cancer acute and chronic significance thresholds are based on a hazard index of one.

Refer to Appendix B for modeling results and assumptions.

No Project Alternative: Under the No Project Alternative, no changes would be made to the existing environment. The environmental baseline would be maintained and no impact would occur.

3.3.5.3 III-e) Create objectionable odors affecting a substantial number of people?

Alternatives 1 and 2: **Potentially Significant – Less Than Significant With Mitigation Incorporated** The Project Alternatives would both increase the treatment capacity of the plant from an existing average-daily flow of approximately 2.6 mgd to approximately 3.6 mgd. However, an increase in odor potential (e.g. treatment of higher volumes of wastewater) does not necessarily result in a greater odor impact to the surrounding community. The location, size, and type of the treatment facilities, the sensitivity of nearby receptors, and the direction and speed of prevailing winds are all factors in determining whether odors from the treatment plant are likely to have a significant effect on the surrounding community. Processes having the greatest potential for odor generation at WWTPs are typically associated with sludge handling and drying practices. Potential increases in odors may be offset by improvements in design and/or operational procedures, including the use of chemicals and incorporation of additional treatment technologies. Design technologies considered to be the most effective in controlling onsite odors most often include the enclosure of process facilities and the treatment of air emitted from odor-generating equipment.

No odor complaints have been filed during the last five years for the City of Ridgecrest wastewater treatment facility (EKAPCD 2016). In comparison to the existing facility, the proposed Project Alternatives would

result in additional treatment processes that would help to reduce the odor-generation potential of the facility, including effluent filtration, chlorination, and aerobic sludge digestion. Sludge handling activities, however, could result in an increase in the facilities odor-generation potential.

WWTPs located within approximately one mile of sensitive land uses are generally considered to have a potentially significant impact with regard to nuisance odors. Under Alternative 1, the nearest residences would be located approximately 1,750 feet from the proposed treatment facility. Under Alternative 2, the nearest residences would be located approximately 960 feet from the treatment facility. Given that residential land uses are located within one mile of the proposed treatment plants and the proposed Project Alternatives would result in a potential increase in odor-generating potential, this impact is considered potentially significant. The following mitigation measure shall be implemented to reduce impacts to a less than significant level.

3.3.6 Mitigation Measures

- **AQ-2:** An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project Alternatives to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation and appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.

Mitigation Measure AQ-2 would require the preparation of an odor control plan. Implementation of the OCMP would help to minimize and control odorous emissions from the facility. In addition, the OCMP would also help to ensure compliance with applicable EKAPCD Rule 419 for the control of nuisance impacts. With mitigation, this impact would be considered less than significant.

No Project/Action: Under the No Project Alternative, no changes would be made to the existing environment. The environmental baseline would be maintained and no impact would occur.

3.3.7 References

See Air Quality & GHG Impact Assessment prepared by Ambient Air Quality & Noise Consulting (Appendix B).

3.4 Biological Resources

3.4.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.

2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Regional Setting: Given that Alternatives 1 and 2 involve the same two sites, the setting and analysis for both alternatives is interchangeable. From Appendix C: "The Project site is located within the Indian Wells Valley region of the western Mohave Desert. The area is loosely bound by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south. At the time of the survey the project sites contained desert scrub, ruderal land, wastewater ponds, agricultural fields, and ephemeral drainage.

"The topography of the Project Alterative sites are relatively flat with elevations ranging from approximately 2,213 – 2,327 feet National Geodetic Vertical Datum (NGVD). A small ephemeral drainage crosses the project site and drains into the Mirror Lake basin. The Mirror Lake basin is a closed basin with no hydrologic outlet. Mirror Lake is rarely inundated.

"In general, soils of the Project Alternative sites are mostly sandy. Surface soils are deficient in nitrogen and relatively high in salt accumulation. Some soils of the site, primarily in agricultural and ruderal areas have been disturbed or altered through farming, grading, the construction of WWTP infrastructure, and other development. As such, native soil characteristics within these areas have been altered or destroyed.

"The Project Alternative sites are located in a region of California having a desert climate. Summers are dry and hot with daytime temperatures commonly exceeding 100 degrees Fahrenheit. Winters are mild to cold with occasional freezing nighttime temperatures. Annual precipitation in the general vicinity of the sites is low with a mean annual rainfall of approximately 3.7 inches, most of which falls between the months of December and March. Virtually all precipitation falls in the form of rain with stormwater infiltrating onsite soils.

"The surrounding lands consist of desert scrub, Mirror Lake dry lake bed, and developed lands associated with the City of Ridgecrest and the NAWS.

"Five habitat/land use types were observed on the project sites during the September 2014 biological field survey; desert scrub, ruderal land, wastewater ponds, agricultural fields, and ephemeral drainage" (Appendix C). A list of the vascular plant species observed within the project sites and the terrestrial vertebrates using, or potentially using, the sites and photos of the projects sites can be found in Appendix C.

3.4.2 Regulatory Setting

3.4.2.1 Federal

Federal Endangered Species Act of 1973 (16 U.S.C. 1531 through 1543): The Endangered Species Act (ESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The ESA defines species as "threatened" or "endangered" and provides regulatory protection for listed species. The federal ESA provides a program for conservation and recovery of threatened and endangered species, and conservation of designated critical habitat that the United States Fish and Wildlife Service (USFWS) has determined is required for the survival and recovery of these listed species.

Migratory Bird Treaty Act (16 U.S.C. 703 through 711): The Migratory Bird Treaty Act (MBTA) is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. The MBTA makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law also applies to the removal of nests occupied by migratory birds during the breeding season. The MBTA makes it unlawful to take, pursue, molest, or disturb these species, their nests, or their eggs anywhere in the United States.

Federal Clean Water Act: The Federal CWA Section 404 regulates the discharge of dredged and fill materials into waters of the United States, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from the U.S Army Corps of Engineers (USACE) for all discharges of dredged or fill material into waters of the United States before proceeding with a proposed activity. Before any actions that may impact surface waters are carried out, a delineation of jurisdictional waters of the United States must be completed following USACE protocols (Environmental Laboratory 1987) to determine whether a particular Project Area encompasses wetlands or other waters of the United States that qualify for CWA protection. These include any or all of the following:

- Areas within the ordinary high water mark of a stream, including non-perennial streams with a defined bed and bank, and any stream channel that conveys natural runoff, even if it has been realigned; or
- Seasonal and perennial wetlands, including coastal wetlands.

Wetlands are defined for regulatory purposes as areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3; 40 CFR 230.3).

Under the CWA 404 permit program, general permits (known as nationwide permits) have been adopted, and coverage under nationwide permits is possible when the amount of fill is relatively small (usually less than 0.5 acre).

3.4.2.2 State

California Endangered Species Act (Fish and Game Code 2050 et seq.): The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that State agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no State agency consultation procedures under CESA. For projects that affect both a State and federal listed species, compliance with the ESA will satisfy CESA if the Department of Fish and Game (CDFG) determines that the federal incidental take authorization

is "consistent" with CESA under Fish and Game Code Section 2080.1. For projects that will result in a take of a State-only listed species, the project proponent must apply for a take permit under Section 2081(b).

Sections 2080 and 2081: Section 2080 of the California State Fish and Game Code (the Code) states, "No person shall import into this state [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the Code, the CDFG may authorize individuals or public agencies to import, export, take, or possess, and State-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if: (1) the take is incidental to an otherwise lawful activity, (2) impacts of the authorized take are minimized and fully mitigated, (3) the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and (4) the project proponent ensures adequate funding to implement the measures required by the CDFG. The CDFG makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

Sections 3503 and 3503.5: Under these sections of the Fish and Game Code, the project proponent is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the Migratory Bird Treaty Act, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the Migratory Bird Treaty Act, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

Native Plant Protection Act (Fish and Game Code 1900 through 1913): California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFG at least 10 days in advance of any change in land use. This allows CDFG to salvage listed plant species that would otherwise be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFG during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

3.4.2.3 Local

City of Ridgecrest General Plan: The City of Ridgecrest Open Space & Conservation Element includes policies to reduce biological impacts. Applicable policies and implementation measures are summarized below (City of Ridgecrest 2009).

1. **Goal OSC-5:** To continue to make the Indian Wells Valley a desirable place to live, work, and enjoy leisure time, by maintaining the high level of environmental quality characteristic of the Indian Wells Valley. [Source: Conservation Element, Goal 5.1 - revised]

    a. OSC-5.1 Off-Highway Vehicles. The City shall prohibit off-highway vehicle use in designated habitat preservation areas, as well as in ecologically important and sensitive lands. [Source: Modified Policy 5.1.8, Conservation Element]

    b. OSC-5.3 Maintain Biological Resource Database. The City shall maintain a current database of biological resources, including maps that identify the locations of specific environmentally-sensitive habitats and lists of special-status species. [New Policy]

    c. OSC-5.4 Development Review. The City shall review development proposals in accordance with applicable Federal, State and local statues protecting special-status species and jurisdictional wetlands. [New Policy]

d. OSC-5.5 Requirements for Biological Studies. On sites that have the potential to contain special-species, critical / sensitive habitats or are within 100 feet of such areas, the City shall require the project applicant to have the site surveyed by a qualified biologist in order to determine the biological impact of the development. A report on the findings of the survey shall be submitted to the City as part of the application process. [New Policy]

e. OSC-5.6 Regional Habitat Conservation Plan. The City shall consider the adoption of the West Mojave Habitat Conservation Plan as the regional habitat conservation plan. [New Policy – R-508 JLUS]

f. OSC-5.7 Appropriate Mitigation Measures. The City shall consider using appropriate mitigation measures for future projects (i.e. specific plans or individual projects) based on mitigation standards or protocols adopted by the applicable statute or agency (e.g. USFWS, CDFG, etc.) with jurisdiction over any affected sensitive habitats or special status species. [New Policy]

g. OSC-5.8 New Development in Sensitive Areas. The City shall require that new development in areas that are known to have particular value for biological resources be carefully planned and where possible avoided so that the value of existing sensitive vegetation and wildlife habitat can be maintained. [New Policy]

2. **Goal OSC-6:** To ensure that a supply of acceptable quality water is available to meet the present and future needs of the City and the Indian Wells Valley. The City shall continue to support the Indian Wells Valley Water District [Source: Goal 5.2, Conservation Element]

   a. OSC-6.1 Reduce Surface and Runoff. The City shall require a construction plan prior to the groundbreaking that uses site design and grading techniques to reduce the amount of impervious surface and runoff for all new urban commercial or residential developments proposed projects. [Source: Modified Policy 5.1.10, Conservation Element]

   b. OSC-6.2 Solid and Liquid Waste Disposal. The City shall require the disposition of solid and liquid wastes in a manner consistent with state and federal regulations to prevent contamination of the aquifer. [Source: Modified Policy 5.1.11, Conservation Element]

County of San Bernardino: The County of San Bernardino Conservation Element includes policies to reduce biological impacts. Applicable policies and implementation measures are summarized below.

1. **Goal CO 2:** The County will maintain and enhance biological diversity and healthy ecosystems throughout the County.
   a. Policies
      i. CO 2.1. The County will coordinate with state and federal agencies and departments to ensure that their programs to preserve rare and endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs.
         1. Programs
            a. All County Land Use Map changes and discretionary land use proposals, for areas within the Biotic Resource Overlay or Open Space Mapping on the Resources Overlay, shall be accompanied by a report that identifies all biotic resources located on the site and those on adjacent parcels, which could be adversely affected by the proposal. The report shall outline mitigation measures designed to eliminate or reduce impacts to identified resources. An appropriate

expert such as a qualified biologist, botanist, herpetologist or other professional "life scientist" shall prepare the report.

b. The County shall require the conditions of approval of any land use application to incorporate the County's identified mitigation measures in addition to those that may be required by state or federal agencies to protect and preserve the habitats of the identified species. This measure is implemented through the land use regulations of the County Development Code and compliance with the CEQA, CESA, ESA and related environmental laws and regulations.

c. The County shall coordinate with local, state, and federal agencies to create a specific and detailed wildlife corridor map for the County of San Bernardino. The map will identify movement corridors and refuge area for large mammal, migratory species, and desert species dependent on transitory resource based on rainfall. The wildlife corridor and refuge area map will be used for preparation of biological assessments prior to permitting land use conversion within County jurisdictional areas. The mapping will be included in the Open Space and Biological Resource Overlays.

d. The County shall coordinate with state and federal agencies and departments to ensure that their programs to preserve rare and endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs. This coordination shall be accomplished by notification of development applications and through distributed CEQA documents.

e. The San Bernardino County Museum (Museum) will review and update the Biological Resources Overlay and Open Space Overlay to provide accurate and current spatial data based on rare, threatened, endangered species and the habitats that they rely on. An updated database that integrates CNDDB data with other occurrence data from the Museum and other sources such as the USFWS, CDFG, USFS, BLM, National Park Service, California Native Plant Society to identify areas where biological surveys are required. Overlay maps will identify movement corridors and refuge area for large mammal, migratory species, and desert species dependent on transitory resource based on rainfall. South Coast Wildlands Corridor Project and other data from the resource agencies will be consulted as an information reference base. The wildlife corridor and refuge area map will be used for preparation of biological assessments prior to permitting land use conversion within County jurisdictional areas. The mapping will be included in the Open Space and Biological Resource Overlays. As a federal or state agency revises its database of endangered, threatened, or sensitive species of flora and fauna, the County may publish new Biotic Resources Overlay Maps to reflect new species or a revised distribution of the species already included on the maps without

requiring a General Plan Amendment to be adopted by the Board of Supervisors.

ii. CO 2.2. Provide a balanced approach to resource protection and recreational use of the natural environment.

iii. CO 2.3. In addition to conditions of approval that may be required for specific future development proposals, the County shall establish long-term comprehensive plans for the County's role in the protection of native species because preservation and conservation of biological resources are statewide, Regional, and local issues that directly affect development rights. The conditions of approval of any land use application approved with the BR overlay district shall incorporate the mitigation measures identified in the report required by Section 82.13.030 (Application Requirements), to protect and preserve the habitats of the identified plants and/or animals.

1. Programs

a. Prepare or participate in Habitat Conservation Plans when there is sufficient support of such plans, and adequate funding for their preparation, and a strong likelihood of success.

b. Establish a land ownership transfer program.

c. Establish a land conservation easement program.

d. The County shall work with local communities to improve trash collection, recycling programs, and reduce illegal dumping in unincorporated areas. The County shall sponsor mitigation efforts that minimize landfill growth, reduce trash haul routes that spread litter and increase predator species numbers (i.e. raven or crow in the Desert Region), and reduce illegal dumping of large bulk items (e.g. furniture, appliances, tires, batteries).

e. The County shall participate with Regional plans to improve water quality and habitat that are downstream but may be beyond County limits. The County shall coordinate with Regional plans to minimize degradation of water quality within the County that affects downstream resources and habitats.

iv. CO 2.4. All discretionary approvals requiring mitigation measures for impacts to biological resources will include the condition that the mitigation measures be monitored and modified, if necessary, unless a finding is made that such monitoring is not feasible.

1. Programs

a. The monitoring program will be designed to determine whether the mitigation measures were implemented and effective.

b. The monitoring program will be funded by the project applicant to ensure compliance with and effectiveness of conditions of approval.

c. The County shall not permit land conversion until adequate mitigation is provided to reduce impacts to less than significant in cases where a Mitigated Negative Declaration is used for CEQA compliance. Direct and growth inducing impacts determined to

cause a significant adverse effect on rare, threatened or endangered desert species shall be mitigated by avoidance, habitat restoration or compensated by off-site mitigation and evaluated through a project level EIR. Mitigation will be required for adverse impacts to critical areas around residential land conversion when it can be shown that the indirect effects of pets, associate human activity and other encroachments into sensitive habitats will be significant.

d. The County shall require all new roadways, roadway expansion, and utility installation within the wildlife corridors identified in the Open Space and Biological Resource Overlays to provide suitable wildlife crossings for affected wildlife. Design will include measures to reduce or prevent habitat fragmentation and provide wildlife a means of safe egress through respective foraging and breeding habitats. A qualified biologist will assist with the design and implementation of wildlife crossing including culverts, overcrossings, undercrossings, and fencing.

3.4.3 Methodology

The analysis of biological impacts is based on the known and potential biotic resources of the Project Alternative sites discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2015), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2015), and (3) manuals, reports, and references related to plants and animals of the Mohave Desert region. A reconnaissance-level field survey of the Alternatives' sites was conducted on June 8 & 9, 2015 by Live Oak Associates, Inc. (LOA) biologist Jeff Gurule. The survey consisted of walking the project such that all represented habitats could be thoroughly inspected. During this time principal land uses of the sites were identified and the constituent plants and animals were noted on a field datasheet. The field survey conducted for this study was sufficient to assess the significance of possible biological impacts associated with the development plans for the sites (Appendix C).

3.4.4 Impact Assessment

3.4.4.1 IV-a) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Alternatives 1 and 2: **Less Than Significant with Mitigation Incorporated**. Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of

native plants considered rare, threatened, or endangered (CNPS 2015). Collectively, these plants and animals are referred to as "special status species."[16]

Recorded observations of special status species within a 3.1 mile radius of the Project Alternatives are illustrated in Figure 6 of Appendix C. Special status species, and their potential to occur on the sites, are listed in Table 1. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988-1990), *California Natural Diversity Data Base* (CDFW 2016), *eBird Species Occurrence Range Map* (eBird 2016), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016). This information was used to evaluate the potential for special status plant and animal species to occur onsite[17].

A search of published accounts for all of the relevant special status plant and animal species was conducted by Live Oak Associates for 10 USGS 7.5-minute quadrangles in which the Project Alternatives occur and that immediately surround the project quadrangle. The CNDDB Rarefind 5 (CDFW 2016) was queried for the following 10 quadrangles; Burro Canyon, Inyokern, Inyokern SE, Lone Butte, Pearsonville, Ridgecrest North, Ridgecrest South, Spangler Hills West, White Hills, and Freeman Junction. In addition, the USFWS on-line database was queried for occurrences of federally listed species and critical habitat within the project vicinity (http://ecos.fws.gov/ipac/)[18].

Table 3-8. List of Special Status Species That Could Occur in the Project Vicinity

List of Special Status Species That Could Occur in the Project Vicinity			
Species	**Status**	**Habitat**	***Occurrence on Alternative 1 and Alternative 2 Project Sites**
Plants (adapted from CDFW 2016 and CNPS 2016) Special status plants are listed as rare, threatened, or endangered by CNPS			
Clokey's Cryptantha (*Cryptantha clokeyi*)	CNPS 1B.2	Mojavean desert scrub. Found in sandy or gravelly soils in mountainous and hilly areas. Blooms in April.	**Unlikely.** Mountainous or hilly terrain required by this species is absent from the project sites.
Pale Yellow Layia (*Layia heterotricha*)	CNPS 1B.1	Occurs in alkaline or clay soils of pinyon juniper woodland, foothill woodland, and grassland between 980 – 5,250 ft. Blooms March – June.	**Absent.** Habitats and soils required by this species are absent from the project sites.
Charlottes phacelia (*Phacelia nashiana*)	CNPS 1B.2	Occurs in granitic soils within Joshua tree woodland, Mojavean desert scrub, pinyon juniper woodland. Prefers sandy or rocky areas in mountainous and hilly areas between 1,970-7,200 feet in elevation. Blooms March – June.	**Absent.** Mountainous or hilly terrain required by this species is absent from the project sites.
Animals (adapted from CDFW 2016 and CNPS 2016) Species listed as Threatened of Endangered under the State and/or Federal Endangered Species Act			
Mohave tui chub (*Siphateles bicolor mohavensis*)	FE, CE	Endemic to the Mojave river basin, adapted to alkaline, mineralized waters. Requires deep pools, ponds, or slough-like areas with vegetation for spawning.	**Absent.** Suitable habitat is absent. A large population occurs approximately 2.0 miles northeast of the project site in two large seeps and associated canals.
Desert Tortoise (*Gopherus agassizii*)	FT, CT	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**Possible.** This species may occur in desert scrub areas of the project sites.

[16] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 15.
[17] Ibid. Page 16.
[18] Ibid. Page 16.

List of Special Status Species That Could Occur in the Project Vicinity			
Species	**Status**	**Habitat**	***Occurrence on Alternative 1 and Alternative 2 Project Sites**
Inyo California Towhee (*Melozone crissalis eremophilus*)	FT, CE	Inhabits the west and east slope of the southern Argus Range from 2,680 to 6,200 ft. Breeds in small patches of dense thickets of willows and desert olive along stream sides, springs and seeps.	**Absent.** The project sites are outside the known range of this species.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Nests in deep canyons that contain clefts in rocky walls.	**Absent.** Suitable habitat is absent from the project sites. Furthermore the site is outside the current range of the species.
Mohave ground squirrel (*Xerospermophilus mohavensis*)	CT	Open desert scrub, alkali scrub & Joshua tree woodland. Restricted to Mojave desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover and nesting.	**Possible.** Desert scrub areas of the project sites provide potential habitat for this species. Historic observations of this species are documented adjacent to the project sites.
Townsend's Big Eared Bat (*Corynorhinus townsendii*)	CCT	Found throughout California. Roosts most frequently in caves and cave-like structures, but has also been reported to utilize bridges, buildings, rock crevices, and hollow trees.	**Possible.** This species could conceivably forage over the sites. Suitable roosting habitat is absent within proposed development areas.
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**Possible.** Burrows of suitable size for burrowing owl occupation were not observed on the project site during LOA's reconnaissance survey. However, this species has the potential to occur in burrows not observed on the sites, or to move onto the sites at some point in the future.
Long-eared Owl (*Asio otus*)	CSC	Nests and roosts in riparian woodlands and forests. Forages in adjacent open lands.	**Possible.** The project sites are located outside this species breeding range. Potential roosting habitat occurs within stands of ornamental trees within the project sites and adjacent open lands provide potential foraging habitat.
Le Conte's thrasher (*Toxostoma lecontei*)	CSC	Desert resident primarily found in open desert washes, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Nests in dense spiny shrubs or branched cactus.	**Possible.** Potential breeding and foraging habitat occurs in desert scrub habitats of the project sites.
Spotted Bat (*Euderma maculatum*)	CSC	Frequents semi-arid to arid habitats from low desert habitats to high elevation conifer forests. Prominent rock features used for roosting.	**Possible.** This species may forage over the sites; roosting habitat is absent.
Pallid Bat (*Antrozous pallidus*)	CSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	**Possible.** This species may forage over the sites; suitable roosting habitat is absent within proposed development areas.
American Badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Absent.** Although no badger burrows or digs were observed during the LOA field survey, suitable habitat occurs within desert scrub habitats of the sites.

List of Special Status Species That Could Occur in the Project Vicinity			
Species	**Status**	**Habitat**	***Occurrence on Alternative 1 and Alternative 2 Project Sites**
Desert Bighorn Sheep (*Ovis canadensis nelsoni*)	FP	Found in the dry, steep, rocky desert mountains of southeastern California. Prefers open terrain.	**Absent.** Suitable habitat in the form of mountainous terrain is absent from the project sites.
**Explanation of Occurrence Designations and Status Codes* Present: Species observed on the sites at time of field surveys or during recent past. Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis. Possible: Species not observed on the sites, but it could occur there from time to time. Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient. Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.			

The following impact analysis is for both Alternative 1 and Alternative 2:

Loss of Habitat for Special Status Plants: **Potential Impacts.** Three special status vascular plant species are known to occur in the vicinity of the sites (**Table 3-8**). These plant species are considered absent from the project site due to the absence of suitable habitat. Therefore, the proposed Project Alternatives would have no impact on regional populations of these special status plant species. Mitigation measures are not warranted[19].

Loss of Habitat or Direct Impact to Special Status Animals Absent or Unlikely to Occur on the Site: **Potential Impacts.** Of the 13 special status animal species potentially occurring in the region, four species would be absent or unlikely to occur on the site due to the absence of suitable habitat, or the project's location outside the known range of the species (**Table 3-8**). These species include the Mohave tui chub, Inyo California towhee, California condor, and desert bighorn sheep. Since there is little to no likelihood that these species would use the site, disturbance from future development of the sites would have no effect on these species. Mitigation measures are not warranted[20].

Loss of Habitat for Special Status Animals that may Occur on the Site as Occasional or Regular Foragers but Breed Elsewhere: **Potential Impacts.** Four species may utilize the site for foraging only. These species include the long-eared owl, Townsend's big-eared bat, spotted bat, and pallid bat. Similar and more suitable foraging habitat is abundant throughout the region. Furthermore, the air space above the completed Alternatives will continue to provide nearly the same foraging opportunity for bats due to the increase in water to the area that may result in greater numbers of flying insect. Therefore, the Alternatives would not significantly reduce the amount or quality of foraging habitat currently available in the region for these four species. Mitigation measures are not warranted[21].

Loss of Habitat for Special Status Animals that may Breed and Forage on the Site: **Potential Impacts.** Five species may utilize desert scrub habitat on the site for breeding and foraging, of which approximately 87 acres would experience permanent impacts. These species include the desert tortoise, Le Conte's thrasher, burrowing owl, Mohave ground squirrel, and American badger. The habitat value of onsite desert scrub habitat is diminished by the close proximity of human development. None of these species were observed on the sites during the June field survey and no CNDDB occurrences of these species exist on the sites. Actual use of the sites by these species is unknown at this time. Many square miles of similar and more suitable foraging habitat is abundant throughout the region, including numerous acres of desert scrub habitat monitored and managed by the Department of the Navy located within the NAWS. For the reasons stated

[19] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 33, 42.
[20] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 33, 42.
[21] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 33, 42.

above, the Alternatives would not significantly reduce the amount or quality of foraging habitat currently available in the region for these five species[22].

Alternative 1: **Less Than Significant with Mitigation Incorporated**. The project considered in this evaluation of impacts to biological resources is the development of wastewater treatment facilities on approximately7.4 acres of relatively undisturbed desert scrub lands west of the existing treatment facility at the NAWS site and the construction of 90 acres of treatment ponds at the City site. Additionally, some existing waste treatment facilities will be decommissioned. This action will result in permanent disturbance to approximately 80 acres of desert scrub habitat and approximately 50 acres of ruderal habitat at the City site and approximately 7.4 acres of desert scrub habitat at the NAWS site[23].

Project Alternative Related Mortality or Disturbance to Le Conte's Thrasher and Other Nesting Migratory Birds: **Potential Impacts.** The sites have the potential to be used for nesting by the Le Conte's thrasher and a number of other avian species protected under the federal Migratory Bird Treaty Act and related state laws. If any birds were to nest on the sites prior to construction, project-related activities could result in the abandonment of active nests or direct mortality to birds. Such an activity would constitute a violation of state and federal laws (see Section 3.4.2) and would be considered a significant impact under CEQA[24]. To reduce this impact to less than significant the following Mitigation Measure is recommended:

3.4.5 Mitigation Measures

BIO – 1: In order to minimize construction disturbance to Le Conte's thrasher and other migratory bird nests, the applicant will implement one or more of the following measure(s) as necessary, prior to Project Alternative construction:

a. Avoidance. In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season, or between September 1 and January 31.

b. Pre-construction surveys. If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities.

c. Establish buffers. Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will reduce potential project impacts to Le Conte's thrasher and other nesting migratory birds to a less than significant level under CEQA, and ensure that the Project Alternatives will be in compliance with state and federal laws protecting nesting birds[25].

Project Alternative Impacts to Desert Tortoise from Construction Mortality: **Potential Impacts.** The Project Alternatives sites contain areas of relatively undisturbed desert scrub habitat. Much of the desert scrub habitat on the site provides relatively low quality desert tortoise habitat due to the low density of creosote bushes and the presence of nearby development that increases the chances of potentially harmful encounters with humans, ravens, and domestic dogs. Nonetheless, desert tortoise could potentially occur within this habitat on the sites. Ruderal lands of the sites are unlikely to support desert tortoise due to the lack of

[22] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 34, 43.
[23] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 28.
[24] Ibid. Page 28.
[25] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 29.

suitable vegetation for foraging and cover and regular human disturbance. Should a desert tortoise occur in desert scrub habitat at the time of construction, then construction related activities have the potential to cause desert tortoise mortality. Project Alternative related mortality of desert tortoise would be a violation of state and federal laws protecting the species and is a potentially significant impact under CEQA requiring mitigation to reduce the impact to less than significant. protecting the species.

3.4.6 Mitigation Measures

BIO – 2: Prior to construction, the following measures adapted from the U.S. Fish and Wildlife Service Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii) (December 2009) will be implemented.

a. Pre-construction Surveys. Pre-construction surveys will be conducted in suitable desert tortoise habitats on the Project Alternative sites prior to the beginning of ground disturbance, construction activities, and/or any Project Alternative activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS Desert Tortoise Field Manual.

b. Consultation and Permitting. Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses) consultation with the USFWS and CDFW will likely result in the requirement of "take authorization" in the form of a Biological Opinion (BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the project to lawfully proceed.

c. Permit Compliance. The project applicant will comply with all conditions of a BO and ITP issued for the Project Alternative. Conditions of these permits generally include but are not limited to compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.

Implementation of these measures will reduce construction related impacts to the desert tortoise to a less than significant level under CEQA, ensure compliance with state and federal law, and minimize the risk that construction activities during project development would result in mortality to individual tortoises[26].

Project Alternative Impacts to Burrowing Owls from Construction Mortality: **Potential Impacts.** Evidence of past or present burrowing owl occupation of the sites was not observed during the survey conducted by LOA in June of 2015. In fact, suitable nesting habitat in the form of suitably sized burrows was also not observed during the field survey. However, if burrowing owls were to occur on or adjacent to the site prior to project construction, ground disturbance from construction related activities could result in the mortality of burrowing owls through burying of individual owls during earth moving activities or nest abandonment. These small raptors are protected under the federal Migratory Bird Treaty Act and Fish and Game Code. Mortality of individual birds would be a violation of state and federal law. Mortality of individual burrowing owls would constitute a potentially significant impact of the Project Alternative under CEQA requiring mitigation to reduce the impact to less than significant.

[26] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 29.

3.4.7 Mitigation Measures

BIO – 3: Prior to construction one or more of the following measures will be implemented as necessary:

a. Take Avoidance Surveys. A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of Project Alternative impact areas, where accessible.

b. Avoidance of Active Nests. If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet should be established around all active owl nests. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

c. Passive Relocation of Resident Owls. During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development may be relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist. Passive relocation will be the preferred method of relocation.

Compliance with the above mitigation measures will reduce construction related impacts to burrowing owls to a less than significant level under CEQA, and ensure compliance with state and federal laws protecting nesting raptors and migratory birds[27].

Project Alternative Impacts to Mohave Ground Squirrel from Construction Mortality: **Potential Impacts.** Areas of the Project Alternative sites containing desert scrub habitat provide potential foraging and breeding habitat for the Mohave ground squirrel. This species has been documented in similar habitat adjacent to the sites. Ruderal and agricultural lands of the sites provide unsuitable to marginal Mohave ground squirrel habitat. If Mohave ground squirrel were present at the time of construction, then construction related activities have the potential to cause Mohave ground squirrel mortality. Project Alternative related mortality of Mohave ground squirrels would be a violation of the state ESA and is a potentially significant impact under CEQA, requiring mitigation measures to reduce the impacts to less than significant.

3.4.8 Mitigation Measures

BIO – 4: Prior to construction, the following measures will be implemented.

a. **Pre-construction Surveys.** Protocol level surveys will be conducted in desert scrub habitats of the Project Alternative sites prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's Mohave Ground Squirrel Survey Guidelines (July 2010). The surveys consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Negative results of these surveys are valid for one year.

[27] Ibid. Page 30.

b. **Consultation and Permitting.** Survey results will be submitted to the CDFW. Should surveys find Mohave ground squirrel on site, consultation with the CDFW will be required, and likely result in the requirement of "take authorization" in the form of a an Incidental Take Permit (ITP).

c. **Permit Compliance.** If an ITP is issued for the Project Alternative, the project applicant will comply with all conditions of the ITP. Conditions of this permit generally include but are not limited to compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.

Implementation of these measures will reduce construction related impacts to the Mohave ground squirrel to a less than significant level under CEQA, ensure compliance with state law, and minimize the risk that construction activities during project development would result in mortality to individual Mohave ground squirrels[28].

Construction Mortality of the American Badger: **Potential Impacts.** Evidence of past or present American badger occupation of the sites in the form of suitably sized burrows or evidence of badger digging was not observed during the survey conducted by LOA in June of 2015. However, potentially suitable habitat occurs within desert scrub portions of the Project Alternative sites. If badgers were to occur on the sites prior to construction, ground disturbance from construction related activities could result in the mortality of American badgers. Mortality of individual badgers would constitute a potentially significant impact of the Project Alternative under CEQA requiring mitigation to reduce the impacts to less than significant.

3.4.9 Mitigation Measures

BIO – 5: The following measures will be implemented to avoid and minimize the potential for Project Alternative-related mortality of American badgers.

a. Preconstruction Surveys. A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the Project Alternative sites.

b. Avoidance. Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.

Implementation of these measures will reduce potential construction related Project Alternative impacts to the American badger to a less than significant level[29].

Alternative 2: **Less Than Significant with Mitigation Incorporated**. The Project Alternative considered in this evaluation of impacts to biological resources is the development of wastewater treatment facilities on portions of 230 acres of City owned land that contain wastewater ponds, an off-road vehicle park and other ruderal lands, and vacant land containing desert scrub habitat. Proposed development would convert approximately 60 acres of ruderal lands and 80 acres of desert scrub habitat to new wastewater treatment facilities. Also, this Project Alternative will entail the underground installation of approximately four miles of piping that will connect with the City of Ridgecrest WWTP with the NAWS WWTP. The pipeline installation will require an 80 foot wide temporary disturbance corridor along the length of the four-mile long pipeline. Habitats within

[28] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 31.
[29] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 32.

the pipeline disturbance corridor include desert scrub, ruderal, and ephemeral drainage habitat. Elements of the existing NAWS waste treatment plant will be decommissioned.

Project Alternative Related Mortality or Disturbance to Le Conte's Thrasher and Other Nesting Migratory Birds: **Potential Impacts.** The Project Alternative sites have the potential to be used for nesting by the Le Conte's thrasher and a number of other avian species protected under the federal Migratory Bird Treaty Act and related state laws. If any birds were to nest on the sites prior to construction, Project Alternative-related activities could result in the abandonment of active nests or direct mortality to birds. Such an activity would constitute a violation of state and federal laws (see Section 3.2.3) and would be considered a significant impact under CEQA requiring mitigation to reduce the impacts to less than significant.

Implementation of Mitigation Measure **BIO-1** will reduce potential impacts to Le Conte's thrasher and other nesting migratory birds to a less than significant level under CEQA, and ensure that the project will be in compliance with state and federal laws protecting nesting birds.

Project Alternative Impacts to Desert Tortoise from Construction Mortality: **Potential Impacts.** The Project Alternative sites contain areas of relatively undisturbed desert scrub habitat. Much of the desert scrub habitat on the site provides relatively low quality desert tortoise habitat due to the low density of creosote bushes and the presence of nearby development that increases the chances of potentially harmful encounters with humans, ravens, and domestic dogs. Nonetheless, desert tortoise could potentially occur within this habitat on the sites. Ruderal lands of the sites are unlikely to support desert tortoise due to the lack of suitable vegetation for foraging and cover and regular human disturbance. Should a desert tortoise occur in desert scrub habitat at the time of construction, then construction related activities have the potential to cause desert tortoise mortality. Project Alternative related mortality of desert tortoise would be a violation of state and federal laws protecting the species and is a potentially significant impact under CEQA requiring mitigation to reduce the impact to less than significant.

Implementation of Mitigation Measure **BIO – 2** prior to construction will reduce construction related impacts to the desert tortoise to a less than significant level under CEQA, ensuring compliance with state and federal law, and minimizing the risk that construction activities would not result in mortality to individual tortoises.

Project Alternative Impacts to Burrowing Owls from Construction Mortality: **Potential Impacts.** Evidence of past or present burrowing owl occupation of the sites was not observed during the survey conducted by LOA in June of 2015. In fact, suitable nesting habitat in the form of suitably sized burrows was also not observed during the field survey. However, if burrowing owls were to occur on or adjacent to the site prior to construction, ground disturbance from construction related activities could result in the mortality of burrowing owls through burying of individual owls during earth moving activities or nest abandonment. These small raptors are protected under the federal Migratory Bird Treaty Act and Fish and Game Code. Mortality of individual birds would be a violation of state and federal law. Mortality of individual burrowing owls would constitute a potentially significant impact under CEQA requiring mitigation to reduce the impact to less than significant.

Implementation of **Mitigation Measure BIO – 3** prior to project construction will reduce construction related impacts to burrowing owls to a less than significant level under CEQA, and ensure compliance with state and federal laws protecting nesting raptors and migratory birds.

Project Alternative Impacts to Mohave Ground Squirrel from Construction Mortality: **Potential Impacts.** Areas of the Project Alternative sites containing desert scrub habitat provide potential foraging and breeding habitat for the Mohave ground squirrel. This species has been documented in similar habitat adjacent to the project site. Ruderal and agricultural lands of the sites provide unsuitable to marginal Mohave ground squirrel habitat. If Mohave ground squirrel were present at the time of construction, then construction related

activities have the potential to cause Mohave ground squirrel mortality. Project Alternative related mortality of Mohave ground squirrels is a potentially significant impact under CEQA and would be a violation of the state ESA.

Implementation of Mitigation Measure **BIO – 4** will be implemented prior to construction. Implementation of this measure will reduce construction related impacts to the Mohave ground squirrel to a less than significant level under CEQA, ensure compliance with state law, and minimize the risk that construction activities during Project Alternative development would result in mortality to individual Mohave ground squirrels.

Construction Mortality of the American Badger: **Potential Impacts.** Evidence of past or present American badger occupation of the Project Alternative sites in the form of suitably sized burrows or evidence of badger digging was not observed during the survey conducted by LOA in June of 2015. However, potentially suitable habitat occurs within desert scrub portions of the sites. If badgers were to occur on the sites prior to construction, ground disturbance from construction related activities could result in the mortality of American badgers. Mortality of individual badgers would constitute a potentially significant impact under CEQA requiring mitigation to reduce the impacts to less than significant.

Implementation of **Mitigation Measure BIO – 5,** will reduce potential construction related project impacts to the American badger to a less than significant level.

No Project Alternative: **No Impact**. Under this alternative the City of Ridgecrest would continue to utilize the existing WWTP infrastructure at both the NAWS site and City site in the same manner as they currently do to treat City wastewater. This Project Alternative would result in no additional alterations to biotic habitats than currently occur during routine operations and maintenance activities associated with the NAWS and City WWTPs. Therefore, No Project Alternative would have no impacts to sensitive or protected biological resources.

3.4.9.1 IV-b) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Alternatives 1 and 2: **No Impact.** No riparian or other sensitive habitats occur on Alternative 1 or Alternative 2 sites. Furthermore, no designated critical habitat occurs on or near the sites. Therefore, there will be no Project Alternative effect on riparian, sensitive, or critical habitat. No mitigation measures are warranted.

No Project Alternative: **No Impact.** Under this Alternative the City of Ridgecrest would continue to utilize the existing WWTP infrastructure at both the NAWS site and City site in the same manner as they currently do to treat City wastewater. This Alternative would result in no additional alterations to biotic habitats than currently occur during routine operations and maintenance activities associated with the NAWS and City WWTPs. Therefore, No Project Alternative would have no impacts to sensitive or protected biological resources.

3.4.9.2 IV-c) Would the Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Alternative 1: **Less Than Significant Impact.** Extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. However, hydrologic features are absent for the Project Alternative sites and surrounding lands. Furthermore, the subject area is

flat and receives very little rainfall. Therefore, Project Alternative impacts to downstream waters are considered less than significant. Mitigations are not warranted[30].

Alternative 2: **Less Than Significant with Mitigation Incorporated**. Extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. Hydrologic features found on the study area consist of a small ephemeral drainage. Project Alternative construction may result in the deposition of sediment or pollutants into portions of this drainage. In addition, the Project Alternative 2 may result in the placement of fill or the deposition of sediment in the onsite ephemeral drainage, portions of which appear to meet the definition of a water of the state. Direct impacts to a water of the state require a Notification of Waste Discharge submitted to the RWQCB for review. The CDFW may also assert jurisdiction over this drainage, in which case a Stream Alteration Agreement would be issued by CDFW, upon review of a completed notification form. Such impacts are considered a potentially significant impact of Project Alternative 2 under CEQA, requiring mitigation to reduce the impact to less than significant[31].

3.4.10 Mitigation Measures

BIO-6: (Preparation of erosion control plan). Prior to the start of construction, an erosion control plan will be prepared, Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. The site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing onsite erosion and the concomitant deposition of sediment in onsite and offsite drainages. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of the erosion control plan will include the following:

i. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three.

ii. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures 1 above, but they may include any number of additional measures appropriate for this particular site and this particular Project Alternative, including grease traps in parking areas, regular site inspections for pollutants that could be carried by runoff into natural drainages, etc.

Implementation of an erosion control plan as discussed above will reduce impacts to water quality in downstream waters to a less than significant level.

No Project Alternative: Under this alternative the City of Ridgecrest would continue to utilize the existing WWTP infrastructure at both the NAWS site and City site in the same manner as they currently do to treat City wastewater. This Alternative would result in no additional alterations to biotic habitats than currently occur during routine operations and maintenance activities associated with the NAWS and City WWTPs. Therefore, No Project Alternative would have no impacts to sensitive or protected biological resources.

[30] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 35.
[31] Ibid. Page 41.

3.4.10.1 IV-d) Would the Project 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?

Alternatives 1 and 2: **No Impact.** The Project Alternative sites contain no geographic elements characteristic of a movement corridor (i.e. ridge tops, significant drainages, riparian corridors, etc.) and does not serve as a fish or wildlife movement corridor. Because no part of the sites serves as a fish and wildlife movement corridor, the Project Alternatives will have no effect on regional fish or wildlife movements at Alternative 1 or at Alternative 2. Mitigation measures are not warranted[32].

No Project Alternative: **No Impact.** Under this alternative the City of Ridgecrest would continue to utilize the existing WWTP infrastructure at both the NAWS site and City site in the same manner as they currently do to treat City wastewater. This Alternative would result in no additional alterations to biotic habitats than currently occur during routine operations and maintenance activities associated with the NAWS and City WWTPs. Therefore, No Project Alternative would have no impacts to sensitive or protected biological resources.

3.4.10.2 IV-e) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Alternatives 1 and 2: **No Impact.** There are no tree preservation ordinances that would be in conflict with either Alternative 1 or Alternative 2. No additional mitigation is required.

No Project Alternative: **No Impact.** Under this alternative the City of Ridgecrest would continue to utilize the existing WWTP infrastructure at both the NAWS site and City site in the same manner as they currently do to treat City wastewater. This Alternative would result in no additional alterations to biotic habitats than currently occur during routine operations and maintenance activities associated with the NAWS and City WWTPs. Therefore, No Project Alternative would have no impacts to sensitive or protected biological resources.

3.4.10.3 IV-f) Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Alternatives 1 and 2: **No Impact.** Both Alternative 1 and Alternative 2 will comply with the provisions of the 2030 City of Ridgecrest General Plan and 2007 County of San Bernardino General Plan policies (as amended in 2014) related to biological resources. These policies can be found in Attachment D of Appendix D. No habitat conservation plans are in effect for the Project Alternatives areas. Mitigation measures are not warranted.

No Project Alternative: **No Impact.** Under this alternative the City of Ridgecrest would continue to utilize the existing WWTP infrastructure at both the NAWS site and City site in the same manner as they currently do to treat City wastewater. This Alternative would result in no additional alterations to biotic habitats than currently occur during routine operations and maintenance activities associated with the NAWS and City WWTPs. Therefore, No Project Alternative would have no impacts to sensitive or protected biological resources.

3.4.11 References

Appendix D.

[32] Appendix C. Ridgecrest Wastewater Treatment Plant Expansion Project Biological Evaluation. Page 34, 43.

3.5 Cultural Resources

3.5.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on the China Lake NAWS. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Given that Alternatives 1 and 2 involve the same two sites, the setting and analysis for both alternatives is interchangeable. From Appendix D: "The project lies within the northern Mojave Desert, a triangle shaped area bounded by the southern extent of the Sierra Nevada, Garlock Fault, Owens Valley and the Great Basin province to the north and west with the San Andras fault as the boundary to the south (Norris and Webb 1990; Schoenherr 1992). The Mojave extends east into Nevada and Arizona. Average elevation is approximately 3500 feet (1200 meters); however, Death Valley, the lowest elevation in the United States is contained with the Mojave. Vegetation of the area is characterized by Joshua Trees, Creosote Bush and various cacti at warmer, lower elevations with more cold resistant sagebrush and pinyon pine at higher elevations (Schoenherr 1992). Cold resistant vegetation continues into the Great Basin; however, warm weather flora tends to only occur in the Mojave (Schoenherr 1992). The Mojave is a hot desert with very little precipitation, which occurs primarily in the winter months. The dry climate and sandy coarse soils mean vegetation is very drought resistant. This Project is located in the City of Ridgecrest, which lies in the Indian Wells Valley, bounded by the Coso Range to the north, which separates it from the Owens Valley to the north with the El Paso Mountains bounding it to the south.

"Human occupation in the region has been dated from the Terminal Pleistocene, 12,000 – 10,000 B.P., to present times. In terms of more recent history the Project lies within the traditional territory of the Koso, which spans 1,500 miles from the Sierra Nevada across California and into Nevada. The Ridgecrest area was settled by the Robertson family in 2912, although the first major population increase occurred after World

War I due to plans to create an irrigation district to bring water into Indian Wells Valley from Mono Lake" (Appendix D).

3.5.2 Regulatory Setting

3.5.2.1 Federal

National Register of Historic Places: The National Register of Historic Places (NRHP) is the nation's master inventory of known historic resources. The NRHP is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.
Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the NRHP as significant historic resources. However, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP. The criteria for listing in the NRHP include resources that:

- Are associated with events that have made a significant contribution to the broad patterns of history;
- Are associated with the lives of persons significant in our past;
- 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
- Have yielded or may likely yield information important about prehistory or history.

3.5.2.2 State

California Environmental Quality Act (CEQA): The project is subject to CEQA which requires public or private projects financed or approved by public agencies to assess their effects on historical resources. CEQA uses the term "historical resources" to include buildings, sites, structures, objects or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance. CEQA states that if implementation of a project results in significant effects on historical resources, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed (CCR 15064.5, 15126.4). For the purposes of this CEQA document, a significant impact would occur if project implementation:

- Causes a substantial change in the significance of a historical resource
- Causes a substantial adverse change in the significance of an archaeological resource
- Disturbs any human remains, including those interred outside of formal cemeteries

Therefore, before impacts and mitigation measures can be identified, the significance of historical resources must be determined. CEQA guidelines define three ways that a property may qualify as a historical resource for the purposes of CEQA review:

- If the resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR)
- If the resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the PRC unless the preponderance of evidence demonstrates that it is not historically or culturally significant

- The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (CCR, Title 14, Division 6, Chapter 3, Section 15064.5(a))

Each of these ways of qualifying as a historical resource for the purpose of CEQA is related to the eligibility criteria for inclusion in the CRHR (PRC 5020.1(k), 5024.1, 5024.1(g)).

A historical resource may be eligible for inclusion in the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- Is associated with the lives of persons important in our past
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- Has yielded, or may be likely to yield, information important in prehistory or history

Properties that area listed in or eligible for listing in the National Register of Historic Places are considered eligible for listing in the CRHR, and thus are significant historical resources for the purpose of CEQA (PRC Section 5024.1(d)(1)).

Public Resources Code §5097.5: California Public Resources Code §5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

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

Paleontological Resources: Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources .CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 (see above) also applies to paleontological resources.

3.5.2.3 Local

Kern County General Plan: The existing Kern County General Plan was adopted in March of 2007. The following policies and implementation measures regarding cultural resources that are applicable to the survey area are as follows:

Policies:

25. The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measures:

K. Coordinate with the California State University, Bakersfield's Archaeological Inventory Center.

L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).

M. In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

N. The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

O. On a project specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

San Bernardino County General Plan: The existing Kern County General Plan was adopted in May of 2012. The following goals, policies, and programs regarding cultural resources that are applicable to the survey area are as follows:

Goal CO 3. Identify and protect important archaeological and historic cultural resources in areas of the County that have been determined to have known cultural resource sensitivity.

CO 3.1. Identify and protect important archaeological and historic cultural resources in areas of the County that have been determined to have known cultural resource sensitivity.

- Program 1: Require a cultural resources field survey and evaluation prepared by a qualified professional for projects located within the mapped Cultural Resource Overlay area.
- Program 2: Mitigation of impacts to important cultural resources will follow the standards established in Appendix K of the California Environmental Quality Act Guidelines, as amended to date.

CO 3.2. Identify and protect important archeological and historic cultural resources in all lands that involves disturbance of previously undisturbed ground.

- Program 1: Require the Archaeological Information Center at the San Bernardino County Museum to conduct a preliminary cultural resource review prior to the County's application acceptance for all land use applications in planning regions lacking Cultural Resource Overlays and in lands located outside of planning regions.
- Program 2: Should the County's preliminary review indicate the presence of known cultural resources or moderate to high sensitivity for the potential presence of cultural resources, a field survey and evaluation prepared by a qualified professional will be required with project submittal. The format of the report and standards for evaluation will follow the "Guidelines for Cultural Resource Management Reports" on file with the San Bernardino County Land Use Services Department.

CO 3.3. Establish programs to preserve the information and heritage value of cultural and historical resources.

CO 3.5. Ensure that important cultural resources are avoided or minimized to protect Native American beliefs and traditions.

- Program 1: Consistent with SB 18, as well as possible mitigation measures identified through the CEQA process, the County will work and consult with local tribes to identify, protect and preserve "traditional cultural properties" (TCPs). TCPs include both manmade sites and resources as well as natural landscapes that contribute to the cultural significance of areas.
- Program 2: The County will protect confidential information concerning Native American cultural resources with internal procedures, per the requirements of SB 922, an addendum to SB 18. The purpose of SB 922 is to exempt cultural site information from public review as provided for in the Public Records Act. Information provided by tribes to the County shall be considered confidential or sacred.
- Program 3: The County will work in good faith with the local tribes, developers/applicants and other parties if the local affected tribes request the return of certain Native American artifacts from private development projects. The developer is expected to act in good faith when considering the local tribe's request for artifacts. Artifacts not desired by the local tribe will be placed in a qualified repository as established by the California State Historical Resources Commission. If no facility is available, then all artifacts will be donated to the local tribe.
- Program 4: The County will work with the developer of any "gated community" to ensure that the Native Americans are allowed future access, under reasonable conditions, to view and/or visit known sites within the "gated community." If a site is identified within a gated community project, and preferably preserved as open space, the development will be conditioned by the County allow future access to Native Americans to view and/or visit that site.
- Program 5: Because contemporary Native Americans have expressed concern over the handling of the remains of their ancestors, particularly with respect to archaeological sites containing human burials or cremations, artifacts of ceremonial or spiritual significance, and rock art, the following actions will be taken when decisions are made regarding the disposition of archaeological sites that are the result of prehistoric or historic Native American cultural activity:

    a. The Native American Heritage Commission and local reservation, museum, and other concerned Native American leaders will be notified in writing of any proposed evaluation or mitigation activities that involve excavation of Native American archaeological sites, and their comments and concerns solicited.

    b. The concerns of the Native American community will be fully considered in the planning process.

    c. If human remains are encountered during grading and other construction excavation, work in the immediate vicinity will cease and the County Coroner will be contacted pursuant to the state Health and Safety Code.

    d. In the event that Native American cultural resources are discovered during project development and/or construction, all work in the immediate vicinity of the find will cease and a qualified archaeologist meeting U.S. Secretary of Interior standards will be hired to assess the find. Work on the overall project may continue during this assessment period.

e. If Native American cultural resources are discovered, the County will contact the local tribe. If requested by the tribe, the County will, in good faith, consult on the discovery and its disposition with the tribe.

3.5.3 Methodology

Applied Earthworks, Inc. (AE) conducted a cultural resources study including the following tasks, which are described in further detail in Appendix D.

- Records Search: On June 11, 2015 AE requested a records search of the California Historical Resources Information System (CHRIS) from the Southern San Joaquin Valley Information Center (CHRIS) at California State University, Bakersfield and the South Central Coastal Information Center at California State University, Fullerton.
- Native American Outreach: A Sacred Lands File search and a list of interested parties were requested of the Native American Heritage Commission (NAHC) on June 11, 2015. Identified contacts were contacted by AE on July 1, 2015, with a letter describing the Project and its location.
- Pedestrian Survey: Pedestrian surveys were conducted by five AE archaeologists on June 8, 2015, between July 13 and 16, 2015, and on July 22, 2015. Surveys were conducted using parallel and meandering transects spaced no more than 15 to 20 meters apart. The survey area was photographed and GPS data was recorded.
- Cultural Resource Documentation: When an artifact that appeared to be of historic age was encountered, its position was marked and surveyors closely examined the surrounding area for associated artifacts or features. It was then assigned a temporary number, recorded on the appropriate California Department of Parks and Recreation forms, and photographed by AE staff.

3.5.4 Impact Assessment

3.5.4.1 V-a) Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporated.** The study conducted by AE discovered two previously recorded resources within the survey area, the Inyoken-Searles-McGen No. 2 115kV transmission line and historic road. Neither has been evaluated for eligibility to the California Register of Historical Resources (CRHR). Given that neither resource is likely to be affected by the Project Alternatives, it is recommended that the resources are avoided during the project to prevent disturbances. If impacts are unavoidable, it is further recommended that the significance and eligibility for inclusion in the CRHR be evaluated. The pedestrian survey identified four previously unrecorded isolated resources; this included one historical glass fragment, two historic tin cans, and two spatially separate tin cans. Isolated artifacts are not eligible for listing on the CRHR because they lack association and context with other archaeological materials, therefore the presence of the four isolated resources will pose no threat of impact. Given the potential threat of a significant impact if historical resources were uncovered during Project construction, the following implementation measure is given to reduce potential impacts to less than significant.

3.5.5 Mitigation Measures

CR-1: If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be ceased and the County of Fresno shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using

DPR 523 forms and file said forms with the California Historical Resources Information System (CHRIS). The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.

No Project Alternative: **No Impact.** Under the No Project Alternative, no ground disturbance would occur. There would be no impact.

3.5.5.1 V-b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporated.** Mitigation Measure **CR-1** discussed under Impact V-a will ensure that any impacts will be less than significant.

No Project Alternative: **No Impact.** Under the No Project Alternative, no ground disturbance would occur. There would be no impact.

3.5.5.2 V-c) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporated.** The records search conducted with the CHRIS did not identify any known paleontological resources within the Project Alternatives' area, nor are there any known geologic features in the Project area. Project construction will not be expected to disturb any paleontological resources not previously disturbed; however, the Mitigation Measure CR-1 discussed under Impact V-a will ensure that impacts will be less than significant.

No Project Alternative: **No Impact.** Under the No Project Alternative, no ground disturbance would occur. There would be no impact.

3.5.5.3 V-d) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporated**. Although there is no indication that the Project will disturb any human remains, in the event that human remains are encountered the following mitigation measure shall be followed. Adherence will reduce the impact to less than significant.

3.5.6 Mitigation Measures

CR-2: If human remains are uncovered, or in any other case where human remains are discovered, the Kern or San Bernardino (where applicable) County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.

No Project Alternative: **No Impact.** Under the No Project Alternative, no ground disturbance would occur. There would be no impact.

3.5.7 References

Appendix D.

3.6 Geology and Soils

3.6.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

General Setting: The two Project Alternatives are located in eastern Kern County, within the southeastern portion of the Indian Wells Valley in the southern end of the Basin and Range province. The valley is bounded to the west by the Sierra Nevada, the Caso range to the north, the El Paso Mountains to the south, and the Argus Range to the east. The valley is characterized by broad alluvial basin of Cenozoic-age sedimentary and volcanic materials overlying older plutonic and metamorphic rocks. Quaternary lacustrine deposits are also found in the region as a result of playas in the northeastern portion of the valley. Indian Wells Valley is underlain with alluvial deposits up to 2,000 feet thick.

Surface water in the Indian Wells Valley drains from the surrounding mountains toward China Lake, a dry lake or playa, just north of Ridgecrest, which is located approximately 2.65 miles north of Alternative 1 and the No Project Alternative and approximately 5.85 miles north of Alternative 2. The Alternatives and surrounding areas are within the Indian Valley Wells Groundwater Basin, an area of approximately 597 square

miles or 382,000 acres[33]. Water resources, their occurrence, quality and use are complex issues within the region. Groundwater in the area provides an important resource for domestic, agricultural, commercial and industrial use and is the sole source for municipal, agricultural, and domestic water supply in the Indian Valley Wells Groundwater Basin[34].

Geological Setting: The proposed Project Alternatives are located within Indian Wells Valley, which is in the southern end of the Basin and Range Province east of the Sierra Nevada, south of the Caso range, north of the El Paso Mountains, and west of the Argus Range. The Basin and Range geomorphic province is is characterized by extensional tectonics that have resulted in the formation of numerous structural ranges and depressions known as horsts and grabens. Indian Wells Valley is also situated between the Sierra Nevada Fault Zone to the west and the El Paso and Garlock faults to the south. The Valley is characterized by a broad alluvial basin of Cenozoic-age sedimentary and volcanic material overlying older plutonic and metamorphic rocks . Quaternary lacustrine deposits are also found in the region as a result of playas in the northeastern portion of the valley. Indian Wells Valley is underlain with alluvial deposits up to 2,000 feet thick. Previous authors have grouped the Indian Wells Valley geologic units into the two main categories of consolidated rocks and unconsolidated sediments based on their capacity to contain and yield water.[35]

Soils Setting: USDA NRCS was queried for soil information for each of the two sites however the areas are listed as 'No Digital Data Available'. Additional resources were reviewed; findings are detailed below by site. All sites: A draft environmental impact report titled *City of Ridgecrest General Plan Update* (Draft EIR) was prepared in 2009. The Draft EIR states that generally the City of Ridgecrest sits upon a mixture of three soil types. The two main soil types are Recent Alluvium and Quaternary Lake Deposit which are made up of eroded rock particles and small amounts of clay. Mesozoic Granite Rock makes up the third and smallest portion of soil present within the City.[36]

1. **City of Ridgecrest Site:** In 1991, an on-site soil investigation was performed and documented by Converse Consultants Southwest, Inc. (CCS) in a report titled Preliminary Slow Rate Infiltration Study. In this report, soils in the area of the proposed Alternative 2 were classified as Helendale Sand.[37] |

   In November 2010, a soil investigation to estimate infiltration rates was conducted by BSK Associates in the area of the Alternative 2 proposed treatment facility and the proposed ponds on the San Bernardino County site proposed for both Alternatives 1 and 2. Based on the collected data, soils in the area the proposed Alternative 2 generally consist of dense silty sands from the surface to approximately 10 feet below surface grade (bsg). From approximately 10 feet bsg to 50.5 feet bsg (the maximum depth explored) soils generally consist of layers of silty sandy, clayey sand, and sandy clay. Soils in the area of the proposed ponds on the San Bernardino County site (Alternatives 1 and 2) were found to generally consist of dense silty sands from the surface to approximately 25.5 feet bsg (the maximum depth explored).[38]

2. **NAWS China Lake Site:** In November 2002, an Environmental Impact Statement was prepared for the NAWS for proposed military operational increases that classified soil in the Alternative 1 project

[33] Department of Water Resources. California's Groundwater Update Bulletin 118. South Lahontan Hydrologic Region: Indian Wells Valley Groundwater Basin. February 2004.
[34] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.
[35] Dutcher, L.C. and Moyle, W.R., Jr. Geologic and Hydrologic Features of Indian Wells Valley, California: USGS Water-Supply Paper. 1973
[36] City of Ridgecrest Plan Update. Draft Environmental Impact Report. 2009
[37] Converse Consultants Southwest, Inc. Preliminary Slow Rate Infiltration Study. 1991.
[38] BSK Associates, Inc. Draft Preliminary Soil Investigation Report, Ridgecrest Wastewater Treatment Plant, Ridgecrest, California. 2011.

area as Rosamond Variant Playas, soil map unit CA339.[39] CA339 soil map units are typically deep, well drained, and formed from granitic parent material or granitic alluvium.[40]

In August 2015, a preliminary geotechnical investigation was conducted in the area of Alternative 1 at NAWS by BSK Associates. During this investigation, a total of 8 soil borings were drilled to a maximum depth of 26 feet bsg. Soil descriptions presented in the BSK Associates report are as follows:[41]

Table 3-9. Soil Descriptions

Soil Descriptions	
Boring	**Soil Description**
Boring B-1	Sandy Silt from 0 to 5 feet bgs, fine to coarse grained Silty Sand from 5 to 10 feet bgs, fine grained Sand from 10 to 25 feet bgs, Clayey Silt from 25 to 26 feet bgs.
Boring B-2	Sandy Silt from 0 to 2 feet bgs, fine to medium grained Silty Sand from 2 to 15 feet bgs, fine grained Sand from 15 to 20 feet bgs, Sandy Clay from 20 to 25 feet bgs, fine to medium grained Silty Sand from 25 to 26.5 feet bgs.
Boring B-3	Sandy Silt from 0 to 2 feet bgs, Silty Clay from 2 to 10 feet bgs, fine to medium grained Sand from 10 to 25 feet bgs, fine to medium Silty Sand from 25 to 26.5 feet bgs.
Boring B-4	Sandy Silt from 0 to 2 feet bgs, fine to coarse grained Silty Sand from 2 to 6 feet bgs, Sandy Clay from 6 to 10 feet bgs, fine grained Sand from 10 to 20 feet bgs, fine to coarse grained Silty Sand from 20 to 26.5 feet bgs.
Boring B-5	Sandy Silt from 0 to 2 feet bgs, fine to coarse grained Silty Sand from 2 to 5 feet bgs, Sandy Clay from 5 to 10 feet bgs, fine grained Sand from 10 to 15 feet bgs, fine to medium grained Silty Sand from 15 to 25 feet bgs, fine grained Sand from 25 to 26.5 feet bgs.
Boring B-6	Fine to coarse grained Silty Sand from 0 to 5 feet bgs, Sandy Silt from 5 to 10 feet bgs, fine grained Sand from 10 to 20 feet bgs, fine to coarse grained Silty Sand from 20 to 25 feet bgs, fine to coarse grained Sand from 25 to 26.5 feet bgs.
Boring B-7	Fine to coarse grained Silty Sand from 0 to 5 feet bgs, Sandy Clay from 5 to 10 feet bgs, fine to coarse grained Silty Sand from 10 to 26.5 feet bgs.
Boring B-8	Fine to coarse grained Silty Sand from 0 to 5 feet bgs, Sandy Silt from 5 to 10 feet bgs, fine to coarse grained Silty Sand from 10 to 26.5 feet bgs.

[39] Navel Air Weapons Station, China Lake, California and The Bureau of Land Management, Ridgecrest, California. Environmental Impact Statement for Proposed Military Operational Increases and Implementation of Associated Comprehensive Land Use and Integrated Natural Resources Management Plans.
[40] Southern California Edison Company. Environmental Assessment, Downs Substation Project. 2010
[41] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015

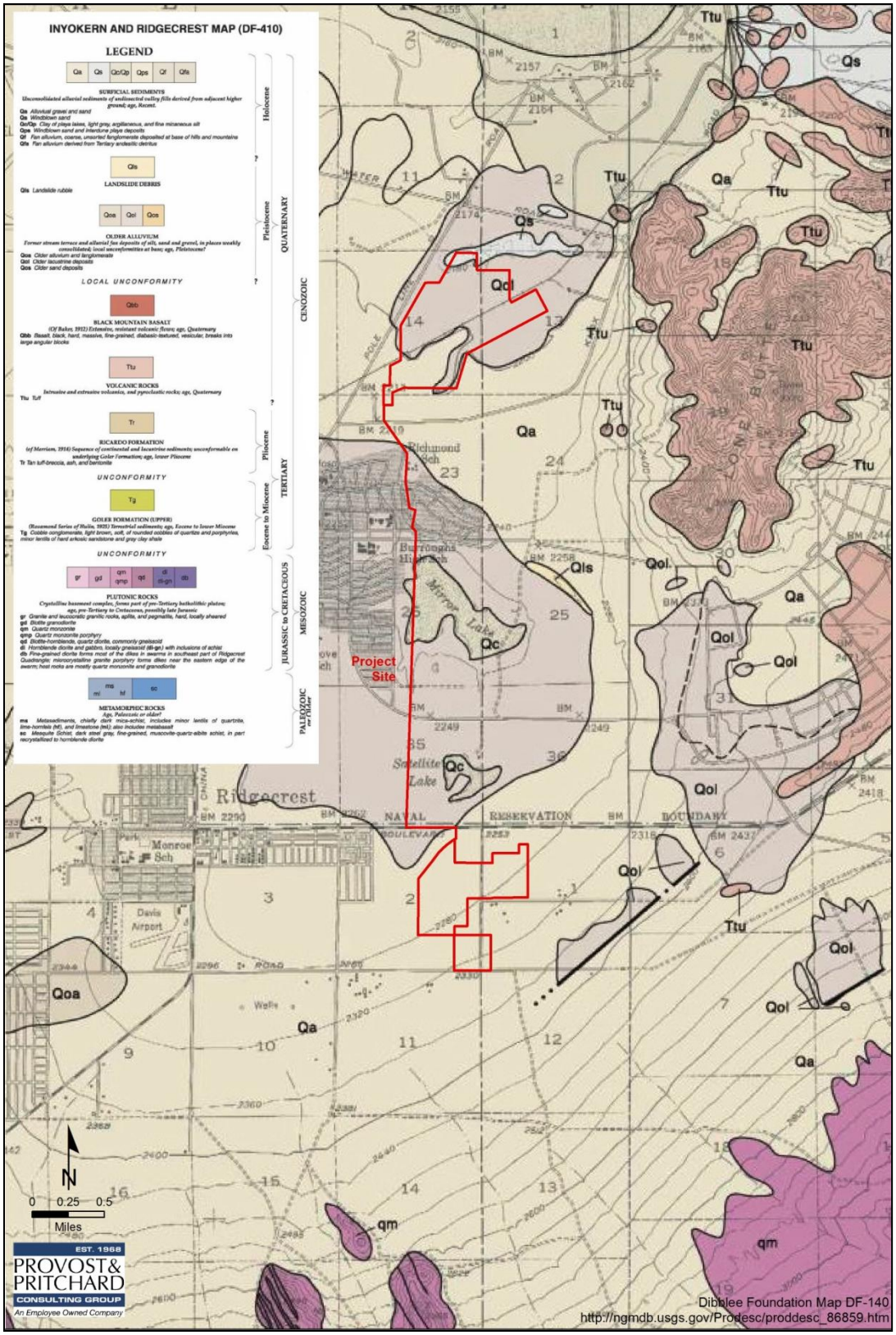


Figure 3-2. Inyokern and Ridgecrest Map

The topography of the Alternative 1 and No Project Alternative site is characterized by low relief and elevations that gently slope toward China Lake at an approximately slope of 0.4 percent. Ground surface elevations at the site range from approximately 2,222 feet above mean sea level (msl) in the south to 2,213 feet above msl in the north. China Lake is approximately 2.65 miles to the north-northeast of the Alternative1 and No Project Alternative site. Topography at Alternative 2 site gently slopes north toward the Mirror Lake Playa away from the hills to the south. The topography across the site shows an average slope of about 1.2 percent to the north-northwest. Ground surface elevations range from approximately 2,281 feet above msl at the southern boundary to 2,273 feet above msl at the northern boundary.

Seismicity: The Basin and Range Province is characterized by northwesterly trending faults with predominantly vertical displacement. The Owens Valley fault zone, an eastern branch of the Sierra Nevada fault, extends into the western part of the province. This structure was responsible for the great earthquake of 1872 that had an estimated magnitude of 8.3. The El Paso Range, a northeasterly trending range that is bordered on the south by the Garlock Fault, delineates the southerly most extent of this province in Kern County. These mountain ranges expose great varieties and thicknesses of pre-Cambrian through Cenozoic rock units.[42]

The nearest major fault zone is the Garlock Fault (central Garlock section) located approximately 13 miles south of the Alternative 1 site and 10 miles south of the Alternative 2 site. This fault is generally assumed to be active and capable of producing earthquakes of at least magnitude 8. Such an earthquake would subject Kern County to a Modified Mercalli Intensity between VII and IX. The intensity along the medial zone of the fault would be highest, with disruptions of terrain along one or more branch faults in the trough and on the adjoining hill slopes. The time of the last great earthquake on the Garlock Fault is not known. The recurrence interval is not known. Very few small earthquakes take place along or near the Garlock Fault[43].

The Alternatives are located in seismically active Southern California, a region that has experienced numerous earthquakes in the past. The area just north of the City has been the source of several moderate sized earthquake event periods during 1980-1991, 1992-1994, and 1995[44].

The purpose of the Alquist-Priolo Geologic Hazards Zones CAct, as summarized in CDMG Special Publication 42 (SP 42), is to "prohibit the location of most structures for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture." As indicated by SP 42, "the State Geologist is required to delineate "earthquake fault zones" (EFZs) along known active faults in California. Cities and counties affected by the zones must regulate certain development 'projects' within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.[45]

Alternative 1 is not located in a Fault-Rupture Hazard Zone. The closest Fault-Rupture Hazard Zone is the Little Lake Fault Zone, located approximately 4.2 miles northwest of the Alternative 1 location.[46] As a note, the Alternative 2 location is approximately 3.5 miles south-southeast of Alternative 1.

Geologic Hazards: Due to local soil conditions, the City of Ridgecrest is not highly susceptible to seismic-related risks including liquefaction, amplified shaking or earthquake-induced landslide hazard zones.[47] The 1990 Seismic Hazards Mapping Act (SHMA) addresses the primary earthquake hazard, strong ground shaking, as well as the secondary hazards of liquefaction, earthquake-induced landslides, and in some areas, zone of amplified shaking. The CGS is the primary State agency charged with implementing the SHMA and

[42] Kern County General Plan EIR. Page 4-1-4.
[43] Kern County General Plan EIR. Page 4-1-5
[44] City of Ridgecrest General Plan EIR
[45] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015
[46] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015
[47] City of Ridgecrest General Plan EIR. Page 3.8-4

provides local jurisdictions with the seismic hazard zone maps that identify areas susceptible to liquefaction, earthquake-induced landslides, and amplified shaking. Site-specific hazard investigations are required by the SHMA when a development project is located within one of the Seismic Hazard Mapping Zones defined as a zone required investigation. The City of Ridgecrest has not been included in the SHMA and as such does not require any further investigation for liquefaction, amplified shaking or earthquake-induced landslide hazard zones.[48]

Seismic Ground Shaking: Kern County is susceptible to moderate to extreme ground shaking from a number of seismic sources in the region. Seismic design standards have been established to reduce many of the structural problems occurring as a result of major earthquakes[49]. There are several active or potentially active faults located in the City of Ridgecrest and surrounding areas. Earthquakes are common and present the only geologic hazard in the area. The area just north of the City has been the source of several moderate sized earthquake event periods during 1980- 1991, 1992-1994, and 1995.[50] Since the Alternatives are located in a seismically active area, it likely will be subjected to ground shaking from movement along one or more of the sufficiently active or well-defined faults in the region.

Based on available online Seismic Hazard Zone Maps by the California Geological Survey, the Project Alternative sites are located in an area that has not been mapped for seismic hazards. Based on the California Geological Survey's, Probabilistic Seismic Hazards Mapping Ground Motion Page, there is a 10 percent probability of earthquake ground motion exceeding 0.317g at the Alternative 1 site over a 50-year period. There is a 10 percent probability of earthquake ground shaking exceeding 0.325g at the Alternative 2 site over a 50-year period[51].

Ground Rupture: Alternative 1 is not located in a Fault-Rupture Hazard Zone. The closest Fault-Rupture Hazard Zone is the Little Lake Fault Zone, located approximately 4.2 miles northwest of the Alternative 1 location.[52] As a note, the Alternative 2 location is approximately 3.5 miles south-southeast of Alternative 1.

Slope Stability: The City of Ridgecrest is in a relatively flat area surrounded by four mountain ranges and therefore less likely to experience landslides than other areas in the region. Susceptible areas include regions where fractured and steep slopes are present or where inadequate ground cover accelerates erosion. The Project Alternatives are not considered to be in areas with the potential for permanent ground displacement due to earthquake-induced landslides (mass wasting) because surface topography at both Alternative sites is relatively flat.

Erosion: Erosion is the displacement of solids (soil, mud, rock, and other particles) by wind, water, or ice and by downward or down-slope movement in response to gravity. The Kern County Fire Department Office of Emergency Services (KERN OES) Multi-Hazard Mitigation Plan states that erosion problems in Kern County are prevalent on steep slopes and alluvial fans, neither of which are found at the Project Alternative locations. Due to generally flat terrain, the Alternatives are not prone to significant mass wasting.

Liquefaction: Liquefaction is a soil condition in which seismically induced ground motion causes an increase in soil water pressure in saturated, loose, sandy soils, resulting in loss of soil shear strength. Liquefaction can lead to near-surface ground failure, which may result in loss of foundation support and/or differential ground settlement. Sandy deposits deeper than 50 feet below ground surface usually are not prone to causing surface damage. In addition, soils above the groundwater table (soils that are not saturated) will not liquefy. The soil formations throughout much of the desert area of eastern Kern County consist of thick, unconsolidated,

[48] City of Ridgecrest General Plan EIR. Page 3.8-2
[49] Kern County General Plan EIR. Page 4-1-7.
[50] City of Ridgecrest General Plan. Page 8-5.
[51] http://www.quake.ca.gov/gmaps/PSHA/psha_interpolator.html
[52] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015

coarse-textured alluvial sediments composed of gravel, sand and silt of granitic composition. Depth to water at Ridgecrest is estimated to be approximately 240 feet below ground surface (bgs) on the southwest and 450 ft bgs on the northeast. Based on the estimated depth of the groundwater at the site and the geologic age of the soils, liquefaction is considered unlikely. Due to the great depth to groundwater in the desert area, liquefaction does not present a major potential hazard within the eastern Kern County area[53].

Subsidence: Subsidence due to groundwater withdrawal is occurring in Kern County over a large area south of Bakersfield and in the Antelope Valley near Edwards Air Force Base. As much as four feet of subsidence has been reported. These areas are located approximately 70 miles west and 45 miles south, respectively, of the Alternatives. No subsidence has been documented at or near the Alternatives.

The Alternatives located within the Indian Wells Valley Groundwater Basin. Groundwater development within the Basin is sparse, with the exception of the Ridgecrest area, Inyokern area, and Naval Weapons Station (NAWS) China Lake. Historically, groundwater pumping in the Basin was minor prior to the beginning of NAWS China Lake operation in the late 1940s. By 1950, annual groundwater pumping rates were estimated to be approximately 6,000 acre-feet per year, and sometime in the late 1950s to early 1960s, groundwater pumping equaled or exceeded the sum of natural recharge. Groundwater pumping within the Basin is currently (2006 through 2007) estimated to total approximately 30,000 acre-feet per year with the principle entities pumping groundwater being Indian Wells Valley Water District, NAWS China Lake, Searles Valley Minerals, and commercial agricultural operations. Groundwater level data for the City of Ridgecrest show an overall decline (approximately 100 feet) in the water table between the 1920s and 2006. The increased groundwater pumping in the area is causing a cone of depression beneath the City of Ridgecrest. However, because subsidence associated with the lowering of the groundwater table has not been reported in the area potential subsidence from groundwater withdrawal associated with the Alternatives are considered to be less than significant.

Seismically-induced settlement can occur in areas where earthquake shaking causes densification of relatively loose sediments. Settlement can cause damage to surface and near-surface structures.

In November 2010, a soil investigation to estimate infiltration rates was conducted by BSK Associates in the area of the Alternative 2 proposed treatment facility and the proposed ponds on the San Bernardino County site proposed for both Alternatives 1 and 2. Based on the collected data, soils in the area the proposed Alternative 2 generally consist of dense silty sands from the surface to approximately 10 feet bsg. Soils in the area of the proposed ponds on the San Bernardino County site (Alternatives 1 and 2) were found to generally consist of dense silty sands from the surface to approximately 25.5 feet bsg (the maximum depth explored).[54]

In August 2015, a preliminary geotechnical investigation was conducted in the area of the Alternative 1 at NAWS by BSK Associates. During this investigation, a total of 8 soil borings were drilled to a maximum depth of 26 feet bsg. Soil boring logs presented in the BSK Associates report indicate that soils below the Alternative 1 area consists of dense materials.[55]

Based on the soil densities, as described by BSK Associates in the 2011 and 2015 report soil boring logs, the potential for damage due to seismically induced settlement is considered to be low, however this assertion should be verified during the design geotechnical investigation for the Project Alternative design and construction.

[53] Kern County General Plan EIR. Page 4-1-8.
[54] BSK Associates, Inc. Draft Preliminary Soil Investigation Report, Ridgecrest Wastewater Treatment Plant, Ridgecrest, California. 2011.
[55] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015

Collapsible Soil Conditions: Alluvial soils in arid and semi-arid environments have the tendency to possess characteristics that make them prone to collapse with an increase in moisture content and without increase in external loads. The Alternatives are located in a geologic environment where the potential exists for collapsible soils. No information was available regarding collapsible soils (hydrocompaction) in the area of the sites.

In August 2015, a preliminary geotechnical investigation was conducted in the area of the Alternative 1 at NAWS by BSK Associates. Consolidation tests conducted as part of this investigation indicated that on-site soils below 5 feet have a low potential for hydrocompaction.[56]

Expansive Soil: Expansive soil consists of fine-grained clay that occurs naturally. It is generally found in areas that were historically a flood plain or lake area, but can occur in hillside areas also. Expansive soil is subject to swelling and shrinkage, varying in proportion to the amount of moisture present in the soil. As water is initially introduced into the soil (by rainfall or watering), expansion takes place. If dried out, the soil will contract, often leaving small fissures or cracks. Excessive drying and wetting of the soil can progressively deteriorate structures over the years by leading to differential settlement within buildings and other improvements.

In the City of Ridgecrest area, expansive soils are more common in less developed areas. In most developed areas, the existing layer of clay has been blended into more granular soils as a part of general site excavation, which helps to reduce the overall soil's expansiveness.[57]

In August 2015, a preliminary geotechnical investigation was conducted in the area of the Alternative 1 at NAWS by BSK Associates. During this investigation, a total of 8 soil borings were drilled to a maximum depth of 26 feet bsg. Findings from this investigation indicate that upper 5 feet of on-site soil is considered to have a very low expansion potential with an expansion index of zero (0) for 5 of the 8 drilled soil borings.[58] In November 2010, a soil investigation to estimate infiltration rates was conducted by BSK Associates in the area of the Alternative 2 proposed treatment facility and the proposed ponds on the San Bernardino County site proposed for both Alternatives 1 and 2. Based on the collected data, soils in the area of the proposed Alternative 2 generally consist of dense silty sands from the surface to approximately 10 feet bsg and soils in the area of the proposed ponds on the San Bernardino County site (Alternatives 1 and 2) were found to generally consist of dense silty sands from the surface to approximately 25.5 feet bsg (the maximum depth explored).[59] As expansive soils generally consist of fine-grained clay material and as soils in the area of Alternative 2 and in the area of the San Bernardino County site (Alternatives 1 and 2) are of coarser material, the potential for soil swelling is generally low to none.

3.6.2 Regulatory Setting

3.6.2.1 Federal

International Building Code: The International Building Code is published by the International Code Council as a model code to promote public safety and welfare by adoption of minimum development standards. It is recognized that the Federal Emergency Management Administration as the latest code for the protection of property against natural disaster. These development standards, as implemented in state building codes and local ordinances, require the Project Alternatives to comply with appropriate seismic design criteria, adequate drainage facility design and preconstruction soils and grading studies. Seismic design standards have been established to reduce many of the structural problems that may occur due to major earthquakes.

[56] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015
[57] City of Ridgecrest General Plan EIR. Page 3.8-7
[58] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015
[59] BSK Associates, Inc. Draft Preliminary Soil Investigation Report, Ridgecrest Wastewater Treatment Plant, Ridgecrest, California. 2011.

3.6.2.2 State

Alquist-Priolo Earthquake Fault Zoning Act: The Alquist-Priolo Earthquake Fault Zoning Act (originally enacted in 1972 and renamed in 1994) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The statute prohibits the location of most types of structures intended for human occupancy across the traces of active faults and regulates construction in the corridors along active faults.

California Seismic Hazards Mapping Act: The Seismic Hazards Mapping Act is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Earthquake Fault Zoning Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Natural Hazard Disclosure Act: The Natural Hazards Disclosure Act requires that property sellers and their agents provide buyers with a "Natural Hazard Disclosure Statement" if the property being sold lies within one or more state-mapped hazard areas, including a Seismic Hazard Zone and an Alquist-Priolo Fault Zone. These disclosures can be made with a Natural Hazard Disclosure Statement or a Local Option Real Estate Transfer Disclosure Statement, provided it contains substantially the same information and warning as the Natural Hazards Disclosure Statement.

California Building Code: The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. The California Building Code incorporates by reference the International Building Code with necessary California amendments.

California State Water Resources Control Board - Construction Storm Water Program: This program, under the Storm Water Program, requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for projects disturbing one or more acres of soil. This should contain a site map showing the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography before and after construction, and drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and variety of monitoring programs, including a visual monitoring program, a chemical monitoring program, and a sediment monitoring program. The following BMPs are provided:

Grading and Preservation of Existing Vegetation

Existing native vegetation shall be preserved to the maximum extent practicable. Clearing and grubbing shall only be performed in areas where new foundations, utilities, or internal access drives are planned.

Soil Compaction

All soil compaction and subgrade preparation specifications will be per the site-specific recommendations of a California-licensed Geotechnical Engineer, and will be based on his field exploration prior to construction. Typically, trench backfill and subgrade compaction consists of either hand-held vibratory, rolled-drum equipment, or tracked equipment. Compaction would be 90 percent of maximum density as calculated by ASTM D1557 Modified Proctor.

Hydroseeding

Disturbed areas will be seeded upon completion of construction in order to protect exposed soils from erosion by wind and water. Upon completion of an earth disturbance activity, disturbed areas shall be covered with a minimum uniform 70 percent perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation.

Straw Mulch

Straw mulch will be used to temporarily stabilize disturbed areas until soil can be prepared for revegetation. Straw mulch will be anchored immediately after application to prevent being windblown. Straw or hay will be "crimped" into the soils by running tracked machinery across the surface.

Non-Vegetative Stabilization

A non-combustible surface will surround the project site to function as a fire break as well as provide a stabilized surface for post-construction access. Non-vegetative stabilization methods, such as gravel mulch, will be used to provide a stabilized 12-foot wide access.

Stabilized Construction Entrance/Exit

A stabilized construction entrance/exit will be maintained at each construction site entrance/exit to reduce tracking of sediment as a result of construction traffic. The entrance/exit will be constructed per the detail included with the Erosion and Sediment Control Drawings (ESCDs).

Stabilized Construction Roadway

The construction access route into the site will also be maintained to prevent erosion and to control tracking of mud and soil material onto adjacent roads. The ESCDs will specify the construction access locations. A regular maintenance program will be conducted to replace sediment-clogged stabilization material with new stabilization material as required.

Entrance/Outlet Tire Wash

Tire wash racks will be installed if soil and/or traffic conditions on-site require washing the construction vehicle wheels prior to exiting the site to avoid excessive tracking of mud onto the roadway.

Street Sweeping and Vacuuming

Road sweeping and vacuuming will occur as necessary during construction to keep street surfaces clear of soil and debris. Washing sediment onto streets will not occur.

Dust Control

During windy conditions (forecast or actual wind conditions of approximately 25 mph or greater), dust control will be applied to disturbed areas, including construction access roads, to adequately control wind erosion. Water will be applied to disturbed soil areas of the project site using water trucks as required by weather conditions to control dust. Water application rates will be minimized as necessary to prevent runoff and ponding.

3.6.2.3 Local

City of Ridgecrest General Plan: The City of Ridgecrest General Plan provides the following requirements related to construction of new buildings.

1. **HS-5.1 Construct of Fault Traces**
    a. The City shall prohibit the construction of buildings intended for human occupancy on identified active or potentially active fault traces based on the best available geologic information. [Source: Policy 8.1.1, Safety Element, Seismic Safety]
2. **HS-5.2 Preliminary Soils and Geologic Reports**
    a. The City shall require preliminary soils and geologic reports for every proposed and existing subdivision. [Source: Policy 8.1.2, Safety Element, Seismic Safety}
3. **HS-5.3 Detailed Soils and Geologic Reports**

a. The City shall require detailed geologic and soils investigations for development within areas that have a high potential for soli and geologic hazards or in areas where slopes exceed 20%. Investigations should include:

- The evaluation of liquefaction potential of land on which all structures other than one or two-story wood-frame dwellings are to be built.
- The investigation of faults for development in the vicinity of a potentially active or active fault. The need for and distance of any setback of buildings for human occupancy from the fault shall be determined by the geologic and soil investigation and approved by the City.
- In addition to the report, the City shall require that all projects are designed and constructed to minimize the risk to residents associated with seismic hazards and meet government regulations. [Source: Policy 8.1.3, SafetyElement, Seismic Safety - revised]

- **HS-5.5 Building Requirements**
  - The City shall include seismic requirements as the primary consideration in determining the location and design of government buildings (local, State and Federal) and critical public facilities (hospital, schools, police, fire, rest homes). [Source: Policy 8.1.5, Safety Element, Seismic Safety - revised]
- **HS-5.10 Underground Utility Lines**
  - To minimize the crossing of active fault traces, the City shall implement the construction of underground service and utility lines. [Source: Policy 8.1.10, Safety Element Seismic Safety]
- **HS-5.11 Emergency Cut Off Valves**
  - The City shall require that any new installation of utilities that cross active fault traces have emergency cut off valves at accessible locations. [Source: Policy 8.1.11, Safety Element Seismic Safety]
- **HS-5.12 California Building Standard Code**
  - The City shall continue to require that alterations to existing buildings and all new buildings are built in accordance with the California Building Standard Code seismic requirements. [New Policy]

Kern County General Plan: The Kern County General Plan provides the following requirements related to construction of new buildings.

1. **Section 1.3: Physical and Environmental Constraints**

   a. Policy 1. Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained ((Map Code 2.1 (Seismic Hazard), Map Code 2.2 (Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.

   b. Policy 6. Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby, minimizing the extent of topographic alteration required and reducing soil erosion while maintaining soil stability.

2. **Section 4.3: Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure**

a. Policy 1. The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.

3. **Section 4.5: Landslides, Subsidence, Seiche, and Liquefaction**

a. Policy 1. Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.

b. Policy 2. Route major lifeline installations around potential areas of liquefaction or otherwise protect them against significant damage from liquefaction in an earthquake.

c. Policy 3. Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.

Kern County Building Code: Construction in Kern County is required to conform to Chapter 17.08, Building Code, 2013 Kern County Code of Building Regulations. This Ordinance adopts the 2013 California Code with particular minor modifications and amendments for conditions specific to Kern County. The requirements for seismic protection are the same as those of the California Building Codes.

3.6.3 Impact Assessment

3.6.3.1 VI-a) Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death.

Alternatives 1 and 2: **Less than Significant.** The Alternative 1 is not located within or adjacent to a Fault-Rupture Hazard Zone. The closest Fault-Rupture Hazard Zone is the Little Lake Fault Zone, located approximately 4.2 miles northwest of the Alternative 1 location.[60] Alternative 2 location is approximately 3.5 miles south-southeast of Alternative 1. For this reason, it is unlikely that an earthquake would result in surface rupture at either Project Alternative location. Other seismic-related ground failures, such as liquefaction, are also unlikely.

Other types of seismic-related ground failure, such as liquefaction, are not likely due to the soil types underlying the Alternative 1 and 2 locations and as depth to groundwater is greater than 50 feet below ground surface. Both Project Alternative areas are located on generally flat land, resulting in minimal risk from landslides.

The Project Alternatives' locations are in a seismically active part of California and are likely to undergo seismic ground shaking at some point. Adherence to the California Building Code, as set forth in relevant municipal codes, will ensure than possible adverse impacts are mitigated.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

VI-a-i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Alternatives 1 and 2: **Less than Significant.** The Alternative 1 is not located within or adjacent to a Fault-Rupture Hazard Zone. The closest Fault-Rupture Hazard Zone is the Little Lake Fault Zone, located

[60] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015

approximately 4.2 miles northwest of the Alternative 1 location.[61] Alternative 2 location is approximately 3.5 miles south-southeast of Alternative 1.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

VI-a-ii) Strong seismic ground shaking?

Alternatives 1 and 2: **Less than Significant.** Alternative 1 is located in a seismically active part of California and is likely to undergo seismic ground shaking at some point. All proposed structures must be designed to comply with the California Building Code, which is considered to be a standard safeguard against major structural failures and loss of life. The intent of the California Building Code is to provide minimum standards to safeguard against major failures and loss of life. The goals of the California Building Code are to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage; and 3) resist major earthquakes without collapse. The California Building Code base seismic design on minimum lateral seismic forces ("ground shaking"). The California Building Code requirements operate on the principal that providing appropriate foundations, among other aspect, helps to protect buildings from failure during earthquakes.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

VI-a-iii) Seismic-related ground failure, including liquefaction?

Alternatives 1 and 2: **Less than Significant.** Liquefaction is a soil condition in which seismically induced ground motion causes an increase in soil water pressure in saturated, loose, sandy soils, resulting in loss of soil shear strength. Liquefaction can lead to near-surface ground failure, which may result in loss of foundation support and/or differential ground settlement. Sandy deposits deeper than 50 feet below ground surface usually are not prone to causing surface damage. In addition, soils above the groundwater table (soils that are not saturated) will not liquefy.

Based on regional background information the potential for liquefaction is considered less than significant due to the soil types underlying the Alternative 1 and 2 locations and as depth to groundwater is greater than 50 feet below ground surface.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

VI-a-iv) Landslides?

Alternatives 1 and 2: **No Impact.** The Alternatives' location is in a relatively flat area surrounded by four mountain ranges and therefore less likely to experience landslides than other areas in the region. Susceptible areas include regions where fractured and steep slopes are present or where inadequate ground cover accelerates erosion. The Alternative 1 project location is not considered to be in area with the potential for permanent ground displacement due to earthquake-induced landslides (mass wasting) because surface topography at the site is relatively flat.

The 1990 Seismic Hazards Mapping Act (SHMA) addresses the primary earthquake hazard, strong ground shaking, as well as the secondary hazards of liquefaction, earthquake-induced landslides, and in some areas, zone of amplified shaking. The CGS is the primary State agency charged with implementing the SHMA and

[61] BSK Associates, Inc. Preliminary Geotechnical Engineering Investigation Report, New Waste Water Treatment Plant, Ridgecrest, California. 2015

provides local jurisdictions with the seismic hazard zone maps that identify areas susceptible to liquefaction, earthquake-induced landslides, and amplified shaking. Site-specific hazard investigations are required by the SHMA when a development project is located within one of the Seismic Hazard Mapping Zones defined as a zone required investigation. The City of Ridgecrest has not been included in the SHMA and as such does not require any further investigation for liquefaction, amplified shaking or earthquake-induced landslide hazard zones.[62]

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.6.3.2 VI-b) Result in substantial soil erosion or the loss of topsoil?

Alternatives 1 and 2: **Less than Significant.** Surface soil erosion and loss of topsoil could occur from soil disturbances associated with construction activities at Alternative 1 and Alternative 2 locations. Future development and creation of new impervious surfaces also has the potential to contribute to increased stormwater runoff, which could make soil erosion more severe if stormwater is not handled properly.

Implementation of a SWPPP, as required by the California State Water Resources Control Board's Construction Storm Water Program, shall ensure that stormwater is handled appropriately and impacts are less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.6.3.3 VI-c) Would the Project 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?

Alternatives 1 and 2: **Less than Significant.** Excavation, grading, and fill operations associated with construction could alter existing slope profiles making them unstable as a result of over-excavation of slope material, steepening of the slope, or increased loading. However, destabilization of natural or constructed slopes is unlikely to occur as surface topography at both Project Alternative locations is relatively flat. Additionally, standard engineering design features and construction procedures would be implemented to maintain stable slopes and excavations during construction, and therefore, impacts associated with destabilized slopes would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.6.3.4 VI-d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?

Alternatives 1 and 2: **Less than Significant.** Shrink-swell or expansive soil behavior is a condition in which soil reacts to changes in moisture content by expanding or contracting. Expansive soils can cause structural damage particularly when concrete structures are in direct contact with the soils.

Impacts associated with expansive soils at Alternative 1 would be less than significant as findings from the August 2015 BSK Associates preliminary geotechnical investigation at the location of Project Alternative 1

[62] City of Ridgecrest General Plan EIR. Page 3.8-2

indicate that on-site soils are considered to have a very low expansion potential with an expansion index of zero (0) for 5 of the 8 drilled soil borings.[63]

As presented in the BSK Associates January 2011 draft preliminary soil investigation report, soils at the Alternative 2 location generally consist of dense silty sands from the surface to approximately 10 feet bsg. As expansive soils typically consist of fine-grained clay, impacts associated with expansive soils at Alternative 2 would be less than significant.

The absence of on-site expansive soils would be verified during the design geotechnical investigation for the project design and construction. If required, appropriate design features to address expansive soils would include excavation of potentially problematic soils during construction and replacement with engineered backfill, ground-treatment processes, direction of surface water and drainage away from foundation soils, and the use of deep foundations such as piers or piles. If required, implementation of any of these standard engineering methods would ensure that impacts associated with expansive soils would remain less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.6.3.5 VI-e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Alternatives 1 and 2: **No Impact.** The proposed Project Alternatives do not have any components that would include the construction of septic tanks or alternative waste water disposal systems. There is an existing sewer collection system and therefore there would be no impact.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.6.4 References

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3.7 Greenhouse Gas Emissions

3.7.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on the NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Regional Setting: Given the broad scope of greenhouse gas impacts, and the overlap of sites for all Alternatives, the following setting from Ambient Air Quality & Noise Consulting's Air Quality & GHG Impact Assessment (see Appendix B) applies to each.

"To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Primary GHGs attributed to global climate change, are discussed, as follows:

1. **Carbon Dioxide**: Carbon dioxide (CO_2) is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2008).
2. **Methane:** Methane (CH_4) is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2015a).
3. **Nitrous Oxide:** Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years (U.S. EPA 2015b).
4. **Hydrofluorocarbons:** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g. HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2015c).
5. **Perfluorocarbons:** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane

(C_5F_{12}), and perfluorohexane (C_6F1_4). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts. The estimated atmospheric lifetimes for CF_4 and C_2F_6 are 50,000 and 10,000 years, respectively (U.S. EPA 2015a).

6. **Nitrogen Trifluoride:** Nitrogen trifluoride (NF_3) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 17,200 carbon dioxide equivalents (CO_2e). While NF_3 may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, NF_3 was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).
7. **Sulfur Hexafluoride:** Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80percent of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years (U.S. EPA 2015e).
8. **Black Carbon:** Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands). California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (ARB 2014).

"Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. **Table 3-10** shows the GWP for the GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As indicated, Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHG with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

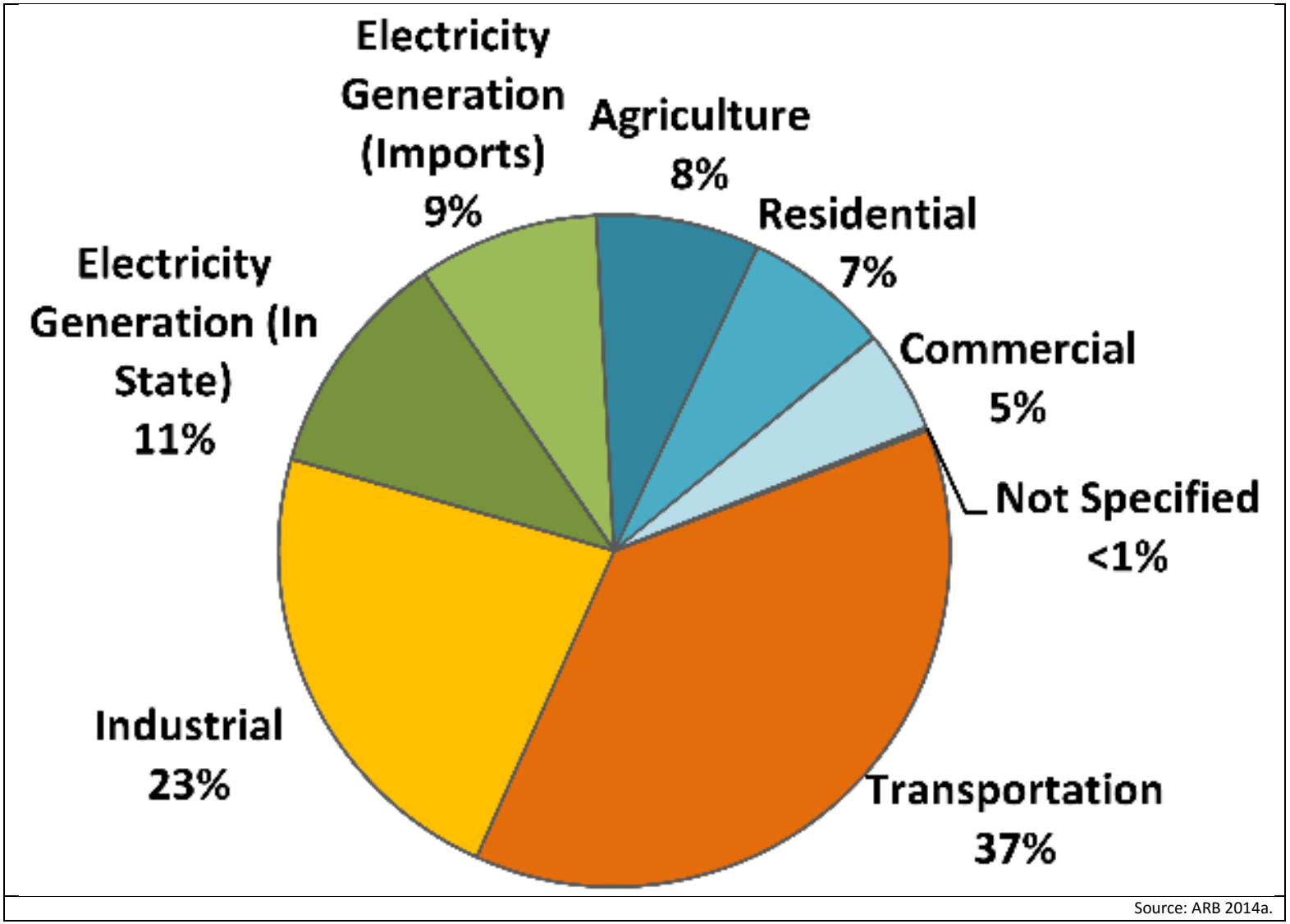
Table 3-10. Global Warming Potential for Greenhouse Gases

Global Warming Potential for Greenhouse Gases	
Greenhouse Gas	**Global Warming Potential (100-year)**
Carbon Dioxide (CO_2)	1
Methane (CH_4)	25
Nitrous Dioxide (NO_2)	298
*Based on IPCC GWP values for 100-year time horizon	

3.7.1.1 Sources of GHG Emissions

"On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions (U.S. EPA 2015d).

"In 2013, GHG emissions within California totaled 459 million metric tons (MMT) of $CO_{2}e$. GHG emissions, by sector, are summarized in **Figure 3-3**. Within California, the transportation sector is the largest contributor, accounting for approximately 37 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23 percent. Electricity generation totaled roughly 20 percent (ARB 2014).



Source: ARB 2014a.

Figure 3-3. California Greenhouse Gas Emissions Inventory

3.7.1.2 Effects of Global Climate Change

"There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

"Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snow pack is a principal supply of water for the state, providing roughly 50 percent of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from hydropower. An early exhaustion of the Sierra snowpack, may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry (Appendix B).

3.7.2 Regulatory Setting

3.7.2.1 Federal

International Regulation and the Kyoto Protocol

"The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the United States announced a strategy to reduce the greenhouse gas intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012.

"As part of the commitments to the UNFCCC, the U.S. EPA has developed an inventory of anthropogenic emissions by sources and removals by sinks of all GHGs. This inventory is periodically updated, with the latest update in 2010. The U.S. EPA reports that total US emissions rose by 14 percent from 1990 to 2007, while the US gross domestic product increased by 59 percent over the same period. A 2.9 percent decrease in emissions was noted from 2007 to 2008, which is reported to be attributable to climate conditions, reduced use of petroleum products for transportation, and increased use of natural gas over other fuel sources. The inventory notes that the transportation sector emits about 32 percent of CO_2 emissions, with 53 percent of those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 21 percent of CO_2 emissions (U.S. EPA 2015a).

"As a part of the U.S. EPA's responsibility to develop and update an inventory of U.S. GHG emissions and sinks, the U.S. EPA compared trends of other various US data. Over the period between 1990 and 2008, GHG emissions grew at an average rate of about 0.7 percent per year. Population growth was slightly higher at 1.1 percent, while energy and fossil fuel consumption grew at 0.9 and 0.8 percent, respectively. Gross domestic product and energy generation grew at much higher rates.

Executive Order 13514

"Executive Order 13514 is focused on reducing GHGs internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

"On April 2, 2007, in Massachusetts v. U.S. EPA, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.
On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

1. **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
2. **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

"Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.
U.S. EPA and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.

"The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles (Caltrans 2015).

3.7.2.2 State

Assembly Bill 1493

"AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the ARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to

reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the Clean Air Act, to allow the State to require reduced tailpipe emissions of CO_2. In late 2007, the U.S. EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the U.S. EPA related to this denial.

"In January 2009, President Obama instructed the U.S. EPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the U.S. EPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

"Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order No. S-3-05

"Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.
The Executive Order directed the secretary of the California Environmental Protection Agency to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Executive Order No. S-6-06

"Executive Order S-6-06 (State of California), signed on April 25, 2006, established two primary goals related to the use of biofuels within California, including: (1) by 2010, 20 percent of its biofuels need to be produced within California; increasing to 40 percent by 2020 and 75 percent by 2050; and (2) by 2010, 20 percent of the renewable electricity should be generated from biomass resources within the state, maintaining this level through 2020.

Executive Order No. S-01-07

"Executive Order S-1-07, the Low Carbon Fuel Standard (LCFS) was issued on January 18, 2007 and called for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. This order instructed the CalEPA to coordinate activities between the University of California, the California Energy Commission (CEC) and other state agencies to develop and propose a draft compliance schedule to meet the 2020 target. Furthermore, it directed ARB to consider initiating regulatory proceedings to establish and implement the LCFS. In response, ARB adopted the LCFS regulation in 2010.

Assembly Bill 32 – California Global Warming Solutions Act of 2006

"AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32 (ARB 2014b).

"AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

"In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of roughly 169 million metric tons of CO_2e, or approximately 29 percent from the state's projected 2020 emissions level in comparison to business-as-usual (BAU) 2002–2004 conditions. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 $MMTCO_2e$), implementation of the Low Carbon Fuel Standard (15.0 $MMTCO_2e$) program, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 $MMTCO_2e$), and a renewable portfolio standard for electricity production (21.3 $MMTCO_2e$). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

"Key components of the Scoping Plan focus on energy efficiency, conservation, and use of renewable energy. For instance, the Renewable Portfolio Standard, which is intended to increase the percentage of renewables in California's electricity mix to 33 percent by year 2020, would result in a reduction of 21.3 $MMTCO_2e$. Sources of renewable energy include, but are not limited to, biomass, wind, solar, geothermal, hydroelectric, and anaerobic digestion. Increasing the use of renewables will decrease California's reliance on fossil fuels, thus reducing GHG emissions. The Scoping Plan also recognizes that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions.

"The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The first update of the Scoping Plan was approved by ARB on May 22, 2014, which looked past 2020 to set mid-term goals to reach post 2020 emission-reduction targets.

Executive Order B-30-15

"On April 29, 2015, the Governor issued Executive Order B-30-15 establishing a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. All state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet

the 2030 and 2050 targets. ARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to achieve continue reductions in GHG emissions.

Senate Bill 1368

"Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a greenhouse gas emissions performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the CEC to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and the CEC.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

"Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed ARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. This Executive Order was superseded by statute SB X1-2 in 2011, which obligates all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020, with interim targets of 20 percent by 2013 and 25 percent by 2016.

"ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The CEC and CPUC serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

Mandatory Reporting of Greenhouse Gas Emissions

"Reporting of GHGs by major sources is required by the California Global Warming Solutions Act (AB 32, 2006). Revisions to the existing ARB mandatory GHG reporting regulation were considered at the board hearing on December 16, 2010. The revised regulation was approved by the California Office of Administrative Law and became effective on January 1, 2012. The revised regulation affects industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

"The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total greenhouse gas emissions.

"Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions, and are free to buy and sell allowances on the open market. California held its first auction of greenhouse gas allowances on November 14, 2012. California's GHG cap-and-trade system will reduce GHG emissions from regulated entities by approximately 16 percent, or more, by 2020.

California Building Code

"The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Code is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Green Building Standards

"In essence, green buildings standards are indistinguishable from any other building standards. Both are contained in the California Building Code and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

"AB 32, which mandates the reduction in greenhouse gas emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In its scoping plan for the implementation of AB 32, ARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25 percent of all such emissions. In recommending a green building strategy as one element of the scoping plan, ARB estimated that green building standards would reduce GHG emissions by approximately 26 MMTCO$_{2e}$ by 2020.

"The green buildings standards, commonly referred to as CalGreen standards, were most recently updated in 2013. The 2013 building energy efficiency standards are 25 percent more efficient than previous standards for residential construction and 30 percent more efficient for non-residential construction (CEC 2015).

3.7.2.3 Local

Eastern Kern Air Pollution Control District

"The EKAPCD has not yet adopted recommended significance thresholds for the evaluation of development projects subject to CEQA review. However, on March 8, 2012, the EKAPCD adopted an internal policy for the evaluation of GHG emission impacts associated with stationary source projects. The EKAPCD's policy applies to stationary source projects for which the EKAPCD serves as the lead CEQA agency. In accordance with this policy, stationary source emissions of GHGs would be considered to have a less-than-significant impact if project-specific GHG emissions would be less than 25,000 tons per year (EKAPACD 2012)" (Appendix B).

3.7.3 Methodology

GHG emissions were quantified using the CalEEMod computer program, based on project-specific construction and operational information. Evaporative emissions of methane associated with WWTP processes were calculated based on methodologies derived from the *Local Government Operations Protocol for the Quantification and Reporting of GHG Emissions Inventories* (2010). Construction-generated emissions were amortized based on a 25-year project life. To be conservative, amortized construction-generated emissions of

GHGs were included in the estimated operational GHG emissions assessment. Total operational emissions, including amortized construction GHG emissions were compared to EKAPCD's GHG significance threshold for determination of impact significance.

3.7.3.1.1 Thresholds of Significance

In accordance with CEQA Guidelines, a project would be considered to have a significant impact to climate change if it would:

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

The EKAPCD has not yet adopted recommended significance thresholds for the evaluation of development projects subject to CEQA review. In addition, the City of Ridgecrest has not yet adopted a GHG-reduction plan. The proposed wastewater treatment facility would be subject to EKAPCD permitting requirements for stationary sources. As a result, in the absence of a recommended significance threshold and applicable GHG-reduction plan, this analysis relies on EKAPCD's GHG policy for the analysis of stationary source GHG emissions. Accordingly, project-generated emissions that would exceed 25,000 $MTCO_2e$/year would be considered to have a potentially significant impact on the environment that could interfere with AB-32 GHG-reduction goals.

3.7.4 Impact Assessment

3.7.4.1 VII-a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

And;

3.7.4.2 VII-b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Alternatives 1 and 2: **Less Than Significant Impact.** Implementation of the proposed Project Alternatives would result in short-term construction and long-term operational emissions of GHGs, however they would not exceed the EKAPCD's 25,000 $MTCO_2e$/year threshold. Short-term construction and long-term operational emissions of GHGs are discussed in detail below.

Short-term Construction: Construction of the proposed facilities would occur over an approximate 24 month period. Estimated increases in GHG emissions associated with construction of the proposed Project Alternatives are summarized in **Table 3-11**. As depicted, construction would generate approximately 424 $MTCO_2e$ during the first year of construction and approximately 199 $MTCO_2e$ during the second year of construction. In total, construction would generate approximately 623 $MTCO_2e$. Amortized GHG emissions, when averaged over an assumed 25-year project life, would total approximately 25 $MTCO_2e$/year, well below the 25,000 $MTCO_2e$/year threshold. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Construction-generated emissions would be similar for both alternatives. Short term construction impacts would therefore be less than significant. No mitigation is required.

Table 3-11. Construction-Generated Emissions of GHG Emissions Proposed Alternatives

Construction-Generated Emissions of GHG Emissions Proposed Alternatives	
Construction Year	**Annual Emissions ($MTCO_2e$/Year)[1]**
Year 1:	424
Year 2:	199
Total Emissions all Project Components:	623
Amortized Net Change in Construction Emissions[2]:	24.9

1. *Assumes all construction components would occur within a single year.*
2. *Amortized emissions are quantified based on an estimated 25-year project life.*

Long-term Operational: Operational emissions would be primarily associated with energy use, as well as, increases in motor vehicle use. Waste generation would also result in slight increases in GHG emissions. Operational emissions are summarized in **Table 3-12**. With the inclusion of amortized construction emissions the Project Alternatives would result in a net increase of approximately 511 $MTCO_2e$/year. Operational emissions would be similar for both alternatives. Annual GHG emissions would not exceed the threshold of 25,000 $MTCO_2e$. The proposed Project Alternatives would not result in GHG emissions that would have long term significant impact on the environment, nor would the proposed Project Alternatives conflict with applicable GHG-reduction plans, policies or regulations. This impact would be considered less than significant. No mitigation is required.

Table 3-12. Operational GHG Emissions Proposed Build Alternatives

Operational GHG Emissions Proposed Alternatives	
Source	**Annual Emissions ($MTCO_2e$/year)[1]**
Existing Conditions/No-Project Alternative	
WWTP Process Emissions[7]	37
Energy Use[1]	1,122.0
Motor Vehicle Use[2]	10.4
Waste Generation[3]	0.9
Total:	1,170.3
Proposed Alternatives	
WWTP Process Emissions[7]	Negligible
Energy Use[4]	1,568.5
Motor Vehicle Use[5]	134.8
Waste Generation[3]	3.2
Total:	1,706.5
Net Increase Compared to No-Project Alternative:	536.2
Net Increase + Amortized Construction[6]:	511.3
Significance Threshold:	25,000
Exceeds Threshold?:	No

1. Energy use assumes wastewater treatment of 2.6 mgd/day, 1,500 square feet of existing structures.
2. Assumes two employees daily; 16 septage haul truck trips monthly.
3. Based on model defaults for Kern County.
4. Energy use assumes wastewater treatment of 3.6 mgd, 5,575 square feet of proposed building area.
5. Assumes 12 employees/day; 24 septage and 30 biosolids removal haul truck trips monthly.
6. Based on an assumed 25-year project life. Refer to **Table 3-11**.

7. Process emissions for existing conditions/no-build alternative are based on emissions of methane for older facilities that do not incorporate aerobic treatment. The U.S. EPA considers methane emissions from modern WWTPs with aerobic treatment to be negligible.

Refer to Appendix B for emissions modeling assumptions and results.

No Project Alternative: The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.7.5 References

Air Quality & GHG Impact Assessment by Ambient Air Quality & Consulting (Appendix B)

3.8 Hazards and Hazardous Materials

3.8.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Regional Setting: Lists of contaminated sites within the City of Ridgecrest and vicinity are available through the Regional Water Quality Control Board and the Department of Toxic Substance Control through a variety of online databases. According to information provided by these agency databases, the majority of the sites located within the City are associated with leaking underground fuel tanks[64].

[64] U.S.E.P.A. EnviroMapper. https://map11.epa.gov/myem/efmap/index.html?ve=12,35.62247848510742,-117.66886138916015&pText=Ridgecrest,%20CA. Site Accessed April 2016.

3.8.2 Regulatory Setting

3.8.2.1 Federal

Federal regulatory agencies include the USEPA, the Occupational Safety and Health Administration, the Nuclear Regulatory Commission, the Department of Transportation, and the National Institute of Health. The following are the federal laws and guidelines governing hazardous substances:

- Pollution Prevention Act (42 USC 13101 et seq./40 CFR)
- Clean Water Act (33 USC 1251 et seq./40 CFR)
- Clean Air Act (42 USC 7401 et seq./40 CFR)
- Occupational Health and Safety Act (29 USC 651 et seq./29 CFR)
- Federal Insecticide, fungicide, and Rodenticide Act (7 USC 136 et seq./40 CFR)
- Comprehensive Environmental Response Compensation and Liability Act (42 USC 9601 et seq./29 CFR, 40 CFR)
- Superfund Amendments and Reauthorization Act Title III (42 USC 9601 et seq./29 CFR)
- Resource Conservation and Recovery Act (42 USC 6901 et seq./40 CFR)
- Safe Drinking Water Act (42 USC 300f et seq./40 CFR)
- Toxic Substances Control Act (15 USC 2601 et seq./40 CFR)

At the federal level, the principal agency regulating the generation, transport, and disposal of hazardous substances is the USEPA, under the authority of Resource Conservation and Recovery Act (RCRA). RCRA established a federal hazardous substance "cradle-to-grave" regulatory program that is administered by USEPA. Under RCRA, USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle-to-grave" system of regulating hazardous substances. The HSWA specifically prohibits the use of certain techniques for the disposal of some hazardous substances. Under RCRA, individual states may implement their own hazardous substance management programs as long as they are consistent with, and at least as strict as, RCRA. USEPA must approve state programs intended to implement RCRA requirements.

USEPA also regulates sites that have been deemed to contain hazardous substances under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly referred to as Superfund, which was enacted on December 11, 1980. The purpose of CERCLA was to provide regulators the ability to respond to uncontrolled releases of hazardous substances from inactive hazardous waste sites that endanger public health and the environment.

CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be identified. In addition, CERCLA provided for the revision and republishing of the National Contingency Plan (NCP) that provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provides for the National Priorities List, a list of national priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action. The Superfund Amendments and Reauthorization Act (SARA) amended CERCLA on October 17, 1986. This amendment increased the size of the Hazardous Response Trust Fund, expanded USEPA's response authority, strengthened enforcement activities at Superfund sites; and broadened the application of the law to

include federal facilities. In addition, new provisions were added to the law that dealt with emergency planning and community right to know. SARA also required USEPA to revise the Hazard Ranking System to ensure that it accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review for listing on the National Priorities List.

3.8.2.2 State

California Environmental Protection Agency (CalEPA): The California Environmental Protection Agency (CalEPA) was created in 1991 by Governor's Executive Order. The six boards, departments, and office were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of State resources. The mission of CalEPA is to restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality under Title 22 of the California Code of Regulations (CCR)[65].

Department of Toxic Substances Control: The Department of Toxic Substances Control (DTSC) is a department of CalEPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC listed hazardous waste facilities and sites, DHS lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Division of Oil, Gas, and Geothermal Resources (DOGGR): The Division of Oil, Gas, and Geothermal Resources (DOGGR) is a State agency and responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. DOGGR's regulatory program promotes the sensitive development of oil, natural gas, and geothermal resources in California through sound engineering practices, pollution prevention, and the implementation of public safety programs. DOGGR requires any construction above or near plugged or abandoned oil and gas wells to be avoided and the remediation of wells to current DOGGR standards.

Unified Program: The Unified Program (codified CCR Title 27, Division 1, Subdivision 4, Chapter 1, Sections 15100-15620) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following six environmental and emergency response programs[66]:

1. Hazardous Waste Generator (HWG) program and Hazardous Waste On-site Treatment activities;
2. Aboveground Storage Tank (AST) program Spill Prevention Control and Countermeasure Plan requirements;
3. Underground Storage Tank (UST) program;
4. Hazardous Materials Release Response Plans and Inventory (HMRRP) program;
5. California Accidental Release Prevention (CalARP) program;
6. Hazardous Materials Management Plans and Hazardous Materials Inventory Statement (HMMP/HMIS) requirements.

[65] California Environmental Protection Agency, Site accessed: March 2016, http://www.calepa.ca.gov
[66] California Environmental Protection Agency, Site accessed: March 2016, http://www.calepa.ca.gov/cupa/

The Secretary of CalEPA is directly responsible for coordinating the administration of the Unified Program. The Unified Program requires all counties to apply to the CalEPA Secretary for the certification of a local unified program agency. Qualified cities are also permitted to apply for certification. The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements in the county. Most CUPAs have been established as a function of a local environmental health or fire department.

State Water Resources Control Board (SWRCB): The State Water Resources Control Board (SWRCB) was created by the California legislature in 1967. The mission of SWRCB is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables SWRCB to provide comprehensive protection for California's waters.

California Department of Industrial Relations – Division of Occupational Safety and Health (Cal OSHA): In California, every employer has a legal obligation to provide and maintain a safe and healthful workplace for employees, according to the California Occupational Safety and Health Act of 1973 (per Title 8 of the CCR). The Division of Occupational Safety and Health (Cal/OSHA) program is responsible for enforcing California laws and regulations pertaining to workplace safety and health and for providing assistance to employers and workers about workplace safety and health issues. Cal/OSHA regulations are administered through Title 8 of the CCR. The regulations require all manufacturers or importers to assess the hazards of substances that they produce or import and all employers to provide information to their employees about the hazardous substances to which they may be exposed.

3.8.2.3 Local

Kern County Department of Environmental Health & San Bernardino County Fire Department, Hazmat Division: The Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, Health and Safety Code Section 25260 et seq) is a State and local effort to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. The Unified Program is implemented at the local level by a Certified Unified Program Agency (CUPA). For NAWS China Lake and the western portion of the City site, the Kern County Department of Environmental Health is the relevant CUPA. For the eastern portion of the City site, within San Bernardino County, the Hazmat Division of the San Bernardino County Fire Department is the relevant CUPA[67].

Kern County and Incorporated Cities Hazardous Waste Management Plan: Kern County has prepared a Hazardous Waste Management Plan (HWMP) in accordance with California Health and Safety Code Section 24135 et seq. This HWMP is relevant for the NAWS China Lake Site and the western portion of the City site. The Kern County HWMP was developed in May 1991 and identifies hazardous waste generators within the County, amounts and types of waste produced and projected waste generation. The major goal of the HWMP is to address the following needs[68]:

1. Assistance to business and industry, especially in small business, to help them manage their hazardous wastes safely and to provide technical assistance to achieve realistic source reduction goals.
2. Education and assistance for safe management of hazardous waste from households.
3. Continuing public participation in the planning process and in decision making on hazardous waste facilities and programs.

[67] State Water Resources Control Board, 2009. CUPA List. http://www.waterboards.ca.gov/ust/contacts/docs/cupa.xls. Site Accessed March 2016.
[68] Kern County, 1991. Kern County and Incorporated Cities Hazardous Wastes Management Plan. http://www.co.kern.ca.us/planning/pdfs/haz_waste_mgt_plan.pdf. Site Accessed March 2016.

4. Effective and equitable enforcement, surveillance, and monitoring of compliance with hazardous waste laws.
5. Implementation programs for the CHWMP.

Kern County & San Bernardino County Emergency Operations Plans: Kern County has prepared an Emergency Operations Plan to serve as the County's emergency response plan. The plan addresses responses to various emergency incidents, responsibilities of various agencies, and sources of outside assistance. The plan also identifies evacuation centers and addresses evacuation routes[69]. This Plan is relevant for the NAWS China Lake Site and the western portion of the City Site.

The San Bernardino County Fire Department's Office of Emergency Services has likewise prepared an Emergency Operations Plan, establishing the framework of the County's emergency organization with the goals of maximizing the safety of the public and minimizing property damage in response to emergency or disaster conditions[70].

Kern County General Plan: The Kern County General Plan's Safety Element contains various goals and policies for the protection of the community from any unreasonable risks associated with hazards; however, none are relevant for the Project Alternatives.

San Bernardino County General Plan:

1. **Goal S2:** The County will minimize the generation of hazardous waste in the County and reduce the risk posed by storage, handling, transportation, and disposal of hazardous wastes.
    a. Policy S2.1: Because reducing the amount of waste generated in this County is an effective mechanism for reducing the potential impact of these wastes on the public health and safety and the environment, and because legislation encourages the reduction, to the extent feasible, of hazardous waste, this jurisdiction will encourage and promote practices that will, in order of priority: (1) reduce the use of hazardous materials and the generation of hazardous wastes at their source; (2) recycle the remaining hazardous wastes for reuse; and (3) treat those wastes that cannot be reduced at the source or recycled. Only residuals from waste recycling and treatment will be land disposed.
2. **Goal S3:** The County will protect its residents and visitors from injury and loss of life and protect property from fires.
    a. Policy S3.2: The County will endeavor to prevent wildfires and continue to provide public safety from wildfire hazards.
    b. Policy S3.3: Minimize the fire hazard posed by expanding development in wildland/urban intermix areas.
3. **Goal S4:** The County will minimize damage due to wind and water erosion where possible.
    a. Policy S4.2: Apply the provisions of the Revised Erosion and Sediment Control Ordinance countywide.
    b. Policy S4.3: Tailor grading, land clearance, and grazing to prevent unnatural erosion in susceptible areas.
    c. Policy S4.5: Restrict of-road vehicles in areas susceptible to erosion.

[69] Kern County Fire Department. Emergency Operations Plan. http://www.kerncountyfire.org/operations/emergency-plans/emergency-operations-plan.html. Site Accessed March 2016.
[70] San Bernardino County Fire Department, Office of Emergency Operations. http://www.sbcounty.gov/Uploads/SBCFire/content/oes/pdf/Emergency-Operations-Plan.pdf. Site Accessed March 2016.

4. **Goal S8:** The County will minimize exposure and potential of damage posed by aviation activity.
    a. Policy 8.1: Ensure the safety of airport operations and surrounding land uses.

China Lake AICUZ Study: For NAWS China Lake, a critical planning document is the Air Installation Compatible Use Zone (AICUZ) study. The China Lake AICUZ focuses primarily on three components: noise, vertical obstructions, and accident potential zones. The latter has been delineated as three separate zones: the Clear Zone (CZ), Accident Potential Zone I (APZ I), and Accident Potential Zone II (APZ II).

3.8.3 Impact Assessment/Environmental Consequences

3.8.3.1 VIII-a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? and;

Alternatives 1 and 2: **Potentially Significant– Less Than Significant With Mitigation Incorporated.** Construction of the proposed Project under either Alternative will require the transport and/or use of small quantities of hazardous materials, including gasoline, diesel, oil, and other similar materials. The hazardous materials anticipated to be involved in the construction process would generally be used in excavation equipment, generators, and other construction equipment and would be contained within vessels engineered for safe storage. Appropriate handling and disposal practices would result in low potential for accidental release of hazardous materials during the construction phases; however, there is the potential for small leaks or spills due to refueling of construction equipment. Standard construction and operational Best Management Practices (BMPs) including the installation of regulated spill containment at each tank will minimize the potential for the release of construction-related fuels and other hazardous materials. These BMPs will also control storm water contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials. The following mitigation measures shall ensure that potential impacts remain less than significant.

3.8.4 Mitigation Measures

- **HAZ-1:** An environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper best management practices implementation, to all field personnel associated with construction activities. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g. identification of potentially hazardous substances) and shall include a review of all site-specific plans.

  A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the City along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted.

- **HAZ-2:** Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the Alternative's Hazardous Substances Control and Emergency Response Plan.

  Operation of the pumps and pipelines associated with Alternatives 1 and 2 would not require the

storage and use of hazardous materials. The proposed wastewater treatment facility, in either Alternative, would use sodium hypochlorite and alum (aluminum sulfate), both of which are classified as hazardous substances. In addition, small quantities of fuel and related materials would be used and stored as part of Alternative operations. Appropriate safety measures, such as controlled access and secondary containment, shall be provided. For both Alternatives 1 and 2 this shall include the preparation and implementation of the following Hazardous Materials Business Plan, as detailed in mitigation measure HAZ-3 below.

- **HAZ-3:** During proposed Project Alternative operations, the City shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layouts, and emergency response and notification procedures for a spill or release.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.4.1 VIII-b) Would the Project 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?

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporated.** Potential impacts caused by reasonably foreseeable upset or accidents involving hazardous materials is discussed by Impact VIII-a, above. Adherence to mitigation measures HAZ-1 through HAZ-3 would reduce potential impacts under either Alternative 1 or 2 to a less than significant level.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.4.2 VIII-c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Alternative 1: **Less Than Significant With Mitigation Incorporated.** The wastewater treatment facility proposed to be constructed on the NAWS China Lake Site would be located approximately one-quarter mile from Richmond Elementary School. As discussed in Impact VIII-a, construction and operation of these facilities would involve the transport and use of small amounts of hazardous materials such as gasoline, diesel, and oil. Operation of the wastewater treatment facility would also include the use of two hazardous materials: sodium hypochlorite and alum. Mitigation measures HAZ-1 through HAZ-3 will be implemented to reduce the hazards posed by the use of these chemicals, which will also serve to avoid impacts to students at Richmond Elementary School. Additionally, Alternative 1's proposed facility has been planned adjacent to the preexisting treatment facility, which has also been using these chemicals at a roughly equivalent distance from the school. Given the previously discussed mitigation measures and similarity to current conditions, impacts would be less than significant.

Alternative 2: **Less Than Significant With Mitigation Incorporated.** Under Alternative 2, transport and use of small amounts of hazardous materials would occur within one-quarter mile of Richmond Elementary School. This would be limited to gasoline, diesel, oil, and similar materials. Mitigation Measures HAZ-1 through HAZ-2, as discussed in Impact VIII-a, would reduce any possible impacts to students of the school to a less than significant level.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.4.3 VIII-d) Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Alternatives 1 and 2: **Less Than Significant.** The NAWS Site, for either alternative, lies within a cleanup site designated by the California Department of Toxic Substances Control's EnviroStor database[71]. However, NAWS has implemented programs to ensure the health and safety of the Station's employees and that of the local communities. These waste management programs include the ongoing management of hazardous materials and wastes generated at the station, and the cleanup of sites from past waste disposal practices through the ongoing implementation of the Installation Restoration Program[72]. Continued operation of these programs will ensure that any hazards posed will be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.4.4 VIII-e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?; and,

Alternatives 1 and 2: **Less Than Significant.** The City and NAWS Sites are both located in the vicinity of NAWS China Lake runways. All aircraft safety zones associated with the Station lie within the facility boundaries, therefore no hazards will be posed regarding the City Site. The NAWS China Lake Site is not located within a designated safety zone, indicating that there is minimal risk to any workers that may be involved with construction or operation under either Alternative 1 or 2.

There are several airports in the region surrounding Ridgecrest in addition to NAWS China Lake. The closest public airport with commercial service is Inyokern Airport approximately 10 miles west of the City. Due to the relative distance of this airport, it would not pose a significant impact.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.4.5 VIII-f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Alternatives 1and 2: **No Impact.** There are no private airstrips within the vicinity of either site under both Alternatives. There will be no safety hazards for these Alternatives.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.4.6 VIII-g) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Alternatives 1and 2: **Less Than Significant.** The implementation of either Alternative 1 or Alternative 2 is not expected to result in any short-term roadway closures and will not result in any long-term closures. The City Site lies near the boundary of the City of Ridgecrest and the NAWS Site lies within the Air Force station;

[71] California Department of Toxic Substances Control. http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=15970006. Site Accessed March, 2016.
[72] NAWS China Lake, 2002. Draft Environmental Impact Statement for Proposed Military Operational Increases and Implementation of Associated Comprehensive Land Use and Integrated Natural Resources Management Plans. file:///G:/Ridgecrest_City%20of-2030/203010B1-Ridgecrest%20City%20Advisor-WWTP/_PLANNING/Background%20Info/Applicable%20Land%20Use%20Plans/NAWS_CLUMP_DEIS.pdf. Site Accessed March 2016.

both locations are sparsely developed surrounding the ProjectAlternatives' vicinity. Any road or lane closures, if required on a temporary basis, would be scheduled to maintain access to nearby properties and would not conflict with the implementation of any emergency response plan or evacuation.

No Project Alternative: No Impact. The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.4.7 VIII-h) Would the Project expose people or structures 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?

Alternatives 1and 2: **Less Than Significant.** Neither the NAWS nor the City Site lies within a designated High or Very High Fire Hazard Severity Zone, as delineated by the CalFire Fire Hazard Severity Maps[73] or San Bernardino County Multi-Jurisdictional Hazard Mitigation Plan[74]. In addition, the majority of the components under either Alternative 1 or 2 would not require on-site workers and no components would involve the construction of residences. Impacts would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.8.5 References

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[73] Cal Fire. Kern County FHSZ Map. http://frap.fire.ca.gov/webdata/maps/kern/fhszl06_1_map.15.pdf. Site Accessed March 2016.
[74] San Bernardino County, 2011. Multi-Jurisdictional Hazard Mitigation Plan Update. file:///G:/Ridgecrest_City%20of-2030/203010B1-Ridgecrest%20City%20Advisor-WWTP/_PLANNING/Background%20Info/Applicable%20Land%20Use%20Plans/Hazard-Mitigation-Plan_San%20Bernardino.pdf. Site Accessed March, 2016.

file:///G:/Ridgecrest_City%20of-2030/203010B1-Ridgecrest%20City%20Advisor-WWTP/_PLANNING/Background%20Info/Applicable%20Land%20Use%20Plans/NAWS_CLUMP_DEIS.pdf.
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3.9 Hydrology and Water Quality

3.9.1 Environmental Setting

Alternatives 1 and 2 Setting: The two proposed Project Alternatives are located in eastern Kern County, within the southeastern portion of the Indian Wells Valley in the southern end of the Basin and Range province. The valley is bounded to the west by the Sierra Nevada, the Caso range to the north, the El Paso Mountains to the south, and the Argus Range to the east. The valley is characterized by broad alluvial basin of Cenozoic-age sedimentary and volcanic materials overlying older plutonic and metamorphic rocks. Quaternary lacustrine deposits are also found in the region as a result of playas in the northeastern portion of the valley. Indian Wells Valley is underlain with alluvial deposits up to 2,000 feet thick.

Surface water in the Indian Wells Valley drains from the surrounding mountains toward China Lake, a dry lake or playa, just north of Ridgecrest, which is located approximately 2.65 miles north of the NAWS China Lake Site and approximately 5.85 miles north of the City Site. The Alternatives and surrounding areas are within the Indian Valley Wells Groundwater Basin, an area of approximately 597 square miles or 382,000 acres[75]. Water resources, their occurrence, quality and use are complex issues within the region. Groundwater in the area provides an important resource for domestic, agricultural, commercial and industrial use and is the sole source for municipal, agricultural, and domestic water supply in the Indian Valley Wells Groundwater Basin[76].

Alternatives 1 and 2 both involve the construction and operation of a 3.6 mgd (Phase 1) average daily flow wastewater treatment plant, the continued operation of and potential upgrades to the existing four-mile-long effluent force main to facilitate effluent storage and disposal, the irrigation of existing alfalfa fields and potential future irrigation of existing landscape areas in the city, and the continued operation of the wastewater treatment ponds at the NAWS and City Sites. These components and the sites involved are discussed in further detail in Chapter Two.

[75] Department of Water Resources. California's Groundwater Update Bulletin 118. South Lahontan Hydrologic Region: Indian Wells Valley Groundwater Basin. February 2004.
[76] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.

The new WWTP, under either Alternative 1 or 2, will be designed to initially produce undisinfected secondary effluent that will be discharged to four primary points of use: existing percolation evaporation ponds located on the NAWS China Lake Site, existing ponds located on the City site (and subsequently to alfalfa crop irrigation), new ponds located on the City Site and, after disinfection, to the China Lake Golf Course. The WWTP process with be designed to remove nitrogen to an average concentration of 10mg/L. An upgrade to disinfected tertiary recycled water is planned to be implemented in a future phase of this project. The NAWS will continue to use the effluent for irrigation of the China Lake Golf Course, which is considered a limited access course (irrigated only when closed) and the NAWS disinfects the effluent before application.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate their existing 3.6 MGD wastewater treatment facility on the China Lake Naval Air Weapons Station (NAWS) and the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground 4-mile pipeline. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Climate and Precipitation: The Indian Wells Valley has an arid climate and is part of the Mojave Desert.[77]. The region experiences a wide variation in temperature, with hot summer months with mean maximum temperatures regularly exceeding 100 degrees Fahrenheit (°F) in July and August, and cold dry winters with mean temperatures in the 50s and 60s °F and lows in the 30s °F[78]. Average annual precipitation in the valley is about 4 to 6 inches[1]. Most of the precipitation occurs between October and March, with January being the wettest month. Typical desert thunderstorms occur in the late summer. Precipitation falls in the form of rain, with the exception of occasional snow at the higher mountain elevations during the winter months[4]. May and June are usually the driest months. **Table 3-13 China Lake NAP Climate and Precipitation Summary** displays the average monthly and annual minimum and maximum temperatures and total precipitation from 1944 to 2015, collected from a gauging station at China Lake NAF (Station ID 041733), located approximately 2.75 miles east-northeast of the NAWS China Lake Site and 5.75 miles northeast of the City Site. Annual precipitation has averaged approximately 4 inches per year on the Indian Wells Valley Groundwater Basin floor.

Table 3-13 China Lake NAP Climate and Precipitation Summary

China Lake NAF, Climate and Precipitation Summary, 1944 through 2015[79]													
Climate	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Annual
Ave. Max. Temp (˚F)	61.3	63.7	74.4	76.1	85.9	98.2	101.8	101.9	94.3	81.2	64.3	58.5	80.1
Ave. Min. Temp (˚F)	30.6	34.6	40.1	45.6	52.8	63.1	68.4	67.4	59.4	48.3	33.8	26.1	47.5
Ave. Total Precip (in.)	0.88	0.79	0.78	0.13	0.11	0.02	0.09	0.31	0.24	0.18	0.27	0.47	4.27

Notes: Annual refers to the annualized average of temperature and precipitation values.
Key: Ave – Average, Max – Maximum, Min. – Minimum, Temp – Temperature, ˚F – degrees Fahrenheit, Precip – Precipitation, in - inches

Groundwater: Alternatives 1 and 2 and the No Project Alternative are located in the Indian Wells Valley Groundwater Basin within the South Lahontan Hydrologic Region. The Indian Wells Valley Groundwater

[77] U.S. Geological Survey and the California State Water Resources Control Board. Groundwater Quality in the Indian Wells Valley, California. Fact Sheet 2012-3035. January 2013.
[78] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.
[79] Western Regional Climate Center. China Lake NAF, California (041733). http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1733

Basin covers approximately 597 square miles of eastern California[80]. The South Lahontan Hydrologic Region which is approximately 18,100 square miles in area and has been subdivided into 76 groundwater basins is bounded on the west by the crest of the Sierra Nevada and on the north by the watershed divide between Mono Lake and East Walker River drainages; on the east by Nevada and the south by the crest of the San Gabriel and San Bernardino mountains and the divide between watersheds draining south toward the Colorado River and those draining northward. This hydrologic region includes the Owens, Mojave, and Amargosa River systems, the Mono Lake drainage system, and many other internally drained basins.[6] [81]

The Indian Wells Valley is characterized by the topography of the Basin and Range Province which is comprised of isolated, north-trending mountain ranges separated by desert basins. The lowest point of the Indian Wells Valley Groundwater Basin is China Lake at an elevation of 2,150 feet above mean sea level (msl)[82]. The Indian Wells Valley Groundwater Basin is located in the west-central portion of the South Lahonton Hydrologic Region. The Sierra Nevada Range bounds the basin to the west, the Coso Range to the north, the Argus Range to the east, and the El Paso Mountains on the south. Perennial China Lake is situated in the central northeastern valley and is the primary natural groundwater discharge point.[83]

The topography of the NAWS China Lake Site is characterized by low relief and elevations that gently slope toward China Lake at an approximately slope of 0.4 percent. China Lake is approximately 2.65 miles to the north-northeast. Topography at the City Site gently slopes north toward the Mirror Lake Playa away from the hills to the south. The topography across the site shows an average slope of about 1.2 percent to the north-northwest.

Potable water for the Indian Wells Valley is supplied exclusively by groundwater. Most this water is supplied to area inhabitants by the City of Ridgecrest, Inyokern Community Services District, Naval Air Weapons Station – China Lake (NAWS), or by private wells.[84] Public-supply wells in Indian Wells Valley are completed to depths between 240 and 800 feet.[85]

The Indian Wells Valley Groundwater Basin is virtually closed, and there is very little groundwater underflow to or from adjacent valleys. As a closed basin, surface drainage does not "exit" the basin and flow from the surrounding mountains drain toward China Lake, or other small playas in the area. Evapotranspiration (ET) from the playa areas was the primary outflow from the Indian Wells Valley Groundwater Basin until the about 1950s or 1960s. At this time, groundwater pumping began to exceed ET rates. Prior to this time, ET from the China Lake area (playa) was the primary outflow of groundwater from the Indian Wells Valley Groundwater Basin. Current groundwater pumping rates have intercepted water flowing east towards the playa, reducing the amount of ET from the Indian Wells Valley Groundwater Basin[86].

Hydrogeology: A comprehensive groundwater monitoring program for Indian Wells Valley was undertaken by the Indian Wells Valley Cooperative Groundwater Technical Advisory Committee and Geochemical

[80] Department of Water Resources. California's Groundwater Update Bulletin 118. South Lahontan Hydrologic Region: Indian Wells Valley Groundwater Basin. February 2004.
[81] Department of Water Resources, California's Groundwater Bulletin 118 Update, 2003
[82] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.
[83] Department of Water Resources. California's Groundwater Update Bulletin 118. South Lahontan Hydrologic Region: Indian Wells Valley Groundwater Basin. February 2004.

[84] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.
[85] U.S. Geological Survey and the California State Water Resources Control Board. Groundwater Quality in the Indian Wells Valley, California. Fact Sheet 2012-3035. January 2013.
[86] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

Technologies Corporation (Groundwater Management Group) culminating in a final report that was published in March 2008. According to the AB-303 Final Report, previous investigators have divided the saturated unconsolidated Quaternary deposits in the valley into two main aquifers (shallow and deep). The shallow aquifer located within the eastern portion of the valley is comprised of young lacustrine deposits and shallow alluvium underlain by lacustrine deposits. The underlying deep aquifer is comprised of the saturated alluvium beneath the shallow aquiver with grain sizes ranging from clay to gravel[87]. The thickness of the deep aquifer is not entirely known as insufficient data exists to completely define the lower boundary; however it is known to be at least approximately 1,750 feet in the Intermediate Wellfield area[88] between Inyokern and Ridgecrest. The lacustrine deposits have been classified as a "confining clay" by previous geologists and reach across the eastern part of the valley. The confining clay base of the shallow aquifer is not well defined due to the stratigraphic inter-fingering of lacustrine and alluvium deposits.[89]

Groundwater from the shallow aquifer has been characterized as having high concentrations of total dissolved solids. Groundwater from the deep aquifer has been characterized as having total dissolved solids concentrations generally less than 1,000 parts per million, which is generally much lower than the total dissolved solids in the shallow aquifer.[90] The drinking water supply in the Indian Wells Valley is supplied solely by the deep aquifer and is used by the Naval Air Weapons Station – China Lake (NAWS), by the community water districts, and agricultural and industrial users.[91]

The Indian Wells Valley Cooperative Groundwater Technical Advisory Committee and Geochemical Technologies Corporation (Groundwater Management Group) used funds issued by an AB 3030 Grant (local groundwater assistance program) to install and sample eight wells in the Indian Wells Valley in order to obtain information on groundwater where groundwater data was historically lacking. Additionally, the Groundwater Management Group study also included sampling 46 wells for water quality parameters such as: general chemistry, general physical parameters, stable and radio-isotopic parameters. This study was used to develop the hydrogeology of the Indian Wells Valley Groundwater Basin that is presented below.

A 2009 Brown and Caldwell study performed for the Indian Wells Valley Water District focused on the hydrogeology and a groundwater flow model of the Indian Wells Valley Groundwater Basin. Utilizing data from previous studies performed by the United States Bureau of Reclamation (USBR), the USGS, and studies completed for China Lake NAWS, four key hydrostratigraphic features were identified that are vital to understand the basin-wide water budget and to develop a hydrogeologic conceptual model. These four features are comprised of a north-south trending fine-grained sediment plug in the west-central basin, an east-west trending high permeability gravel zone in the Ridgecrest-Inyokern area, a steep groundwater gradient between the neighboring El Paso Sub-basin and the southwest area of the Indian Wells Valley Groundwater Basin, and the previously discussed playa ET losses and changes over time. Based on this groundwater flow model, a refinement to the Indian Wells Valley Groundwater Basis water budget was made. It was concluded that groundwater storage in the aquifer has been in overdraft condition on average by approximately 20,000 acre-feet per year (afy), totaling about 900,000 acre-feet since 1920. The bulk of overdraft has occurred since the 1950s.[92]

[87] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.
[88] U.S. Bureau of Reclamation. Indian Wells Valley Groundwater Project: USBR Technical Report Volume II. 1993
[89] Groundwater Management Group. AB303 Final Report: Installation and Implementation of a Comprehensive Groundwater Monitoring Program for the Indian Wells Valley, California. 2008. http://www.iwvgroundwater.org/
[90] Groundwater Management Group. AB303 Final Report: Installation and Implementation of a Comprehensive Groundwater Monitoring Program for the Indian Wells Valley, California. 2008. http://www.iwvgroundwater.org/
[91] Groundwater Management Group. AB303 Final Report: Installation and Implementation of a Comprehensive Groundwater Monitoring Program for the Indian Wells Valley, California. 2008. http://www.iwvgroundwater.org/
[92] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

The Indian Wells Valley is composed of two broad geologic units, consolidated rocks and unconsolidated deposits. The consolidated rocks consist of Mesozoic igneous and metamorphic rocks, which form the basement complex (Sierra Nevada Batholith); Tertiary continental deposits; and Miocene volcanic rocks. The Mesozoic basement complex exists below 2,000 feet to as much as 6,000 feet of alluvial fill, underlie the groundwater basin, and crop out in the surrounding hills. The Tertiary continental deposits overlie the basement complex and fill the valley to approximately 1,000 feet below ground surface. Miocene volcanic rocks crop out along the perimeter of the basin, more specifically, near the El Paso and Coso Mountains. The consolidated rocks are nearly impermeable except for areas where fracturing or weathering has occurred. These rocks are believed to yield little water to the overlying alluvial aquifer system.[93]

Quaternary-age fan, lacustrine, alluvium, playa, and sand dune deposits comprise the unconsolidated deposits. The west-central part of the valley has the thickest sequence of unconsolidated deposits at approximately 2,000 feet thick. Sediments deeper than 2,000 feet have observed to be consolidated Pliocene and Miocene continental deposits and are considered to be non-water producing, however wells deeper than 7,000 feet have been drilled in the valley. Unconsolidated deposits are variable throughout the valley; however typically consist of gravel, sand, silt, and clay. Percentages of silt and clay tend to increase toward the central and eastern valley areas. Holocene age sand and gravel deposits exist in steep alluvial fans to gentle alluvial plain settings, and in silt and clay deposits primarily in dry, ephemeral lakes.[94]

Four hydrostratigraphic features have been identified in the Indian Wells Valley Groundwater Basin., including: 1) Fine-Grained Sediment Plug, 2) Gravel Zone, 3) High Gradient, and 4) Playa.[95]

- A Fine-Grained Sediment Plug is located approximately three to four miles east of the Sierra Nevada mountain front and trends north-south. The upper contact of this feature begins at depth of approximately 340 feet bgs and sediments may be as much as 1,340 feet thick. The areal extent of this deposit is not well defined due to limited borehole data.

- The Gravel Zone is a west-east trending area of coarse-grained high permeability sediments. This area is located from the mouth of Indian Wells Canyon to approximately the northwest portion of Ridgecrest, extends approximately two miles north-south, and fines to the east. This region is referred to the Inyokern and Intermediate Areas and contains high volume production wells. Wells within the Ridgecrest city limits are believed to be associated with this Gravel Zone; however, wells in this area have a higher percentage of fines and, therefore, their groundwater production is lower than the wells to the west.

- The High Gradient area extends from the El Paso sub-Basin into the main Indian Wells Valley Groundwater Basin near the southwestern portion of the valley. Groundwater gradients in this area have been measured at approximately 100 feet per mile.

- The Playa feature is located in the area of China Lake. The thickness of these sediments is not known, but are likely several tens of feet thick. Deposits are highly micaceous, silt sandy silt, and fine sand with occasional plastic clays. Shallow water beneath China Lake is highly saline and unfit for most uses.

[93] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[94] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[95] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

Groundwater Occurrence and Flow: Within the Indian Wells Valley Groundwater Basin, groundwater is used for irrigation, and for public and domestic water supply. The principal groundwater-bearing units are gravels, silts, and clays derived from the Sierra Nevada mountains to the west and from other mountains surrounding the valley. Runoff from the Sierra Nevada mountains and the other surrounding mountain ranges are the principal sources of groundwater recharge.[96]

Prior to pumping, groundwater within the Indian Wells Valley Groundwater Basin flowed toward the China Lake playa, the area of lowest altitude in the Indian Wells Valley (2,153 feet above msl). The Indian Wells Valley Groundwater Basin is considered to be a virtually closed basin; with the majority of the water flowing into the basin remaining within the basin. Groundwater subflow is believed to enter the Indian Wells Valley Groundwater Basin from the Rose Valley and the Coso Groundwater Basins. Conservative estimates of potential subflow out of Rose Valley Groundwater Basin range from a few hundred to between 2,000 and 3,000 afy. Based on the dry nature of the region and the absence of alluvial fill in the Coso Groundwater Basin, estimates for the subflow coming from the Indian Wells Valley Groundwater Basin are thought to be "very low". Subflow out of the Indian Wells Valley Groundwater Basin has been hypothesized; however, this has not been formally documented and is considered insignificant. The other natural mechanism for water to exit is through evaporation. ET rates at China Lake prior to pumping (1920s) in the valley were estimated at approximately 8,000 to 11,000 afy. In the 1960s, groundwater flow and ET rates began to decrease due to excessive groundwater pumping that caused lowering of the groundwater table and regional cones of depression. ET is largely absent from the playa area due to interception of the groundwater by pumping wells. If groundwater levels continue to drop near the playa area, ET will eventually cease.[97]

Groundwater in the lower aquifer of the Indian Wells Valley Groundwater Basin is reportedly contained under generally unconfined conditions, except in the vicinity of China Lake, where silt and clay lenses, lake deposits, and playa deposits locally create confined conditions. The upper aquifer does not yield water freely to wells and consists of poor quality water. Wells in the lower aquifer yield more than 1,000 gallons per minute (gpm), with some wells up to 2,000 gpm. This aquifer is used as the primary aquifer due to the better water quality.[98]

Groundwater flows in a radial pattern toward China Lake and toward the cone of depression beneath the City of Ridgecrest. Based on regional groundwater trends and topography, groundwater flow beneath the Alternatives is expected to flow towards the cone of depression. The groundwater gradient beneath the site is not currently known due to the lack of groundwater data in the area.[99] Drawdown in the regional aquifer is occurring at a rate of 1 to 1.5 feet per year, particularly in the eastern two-thirds of the Indian Wells Valley Groundwater Basin, and the possibility therefore exists of drawing poorer quality waters from the eastern portion of the basin or deeper zones.[100]

[96] U.S. Geological Survey and the California State Water Resources Control Board. Groundwater Quality in the Indian Wells Valley, California. Fact Sheet 2012-3035. January 2013.
[97] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[98] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[99] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[100] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.

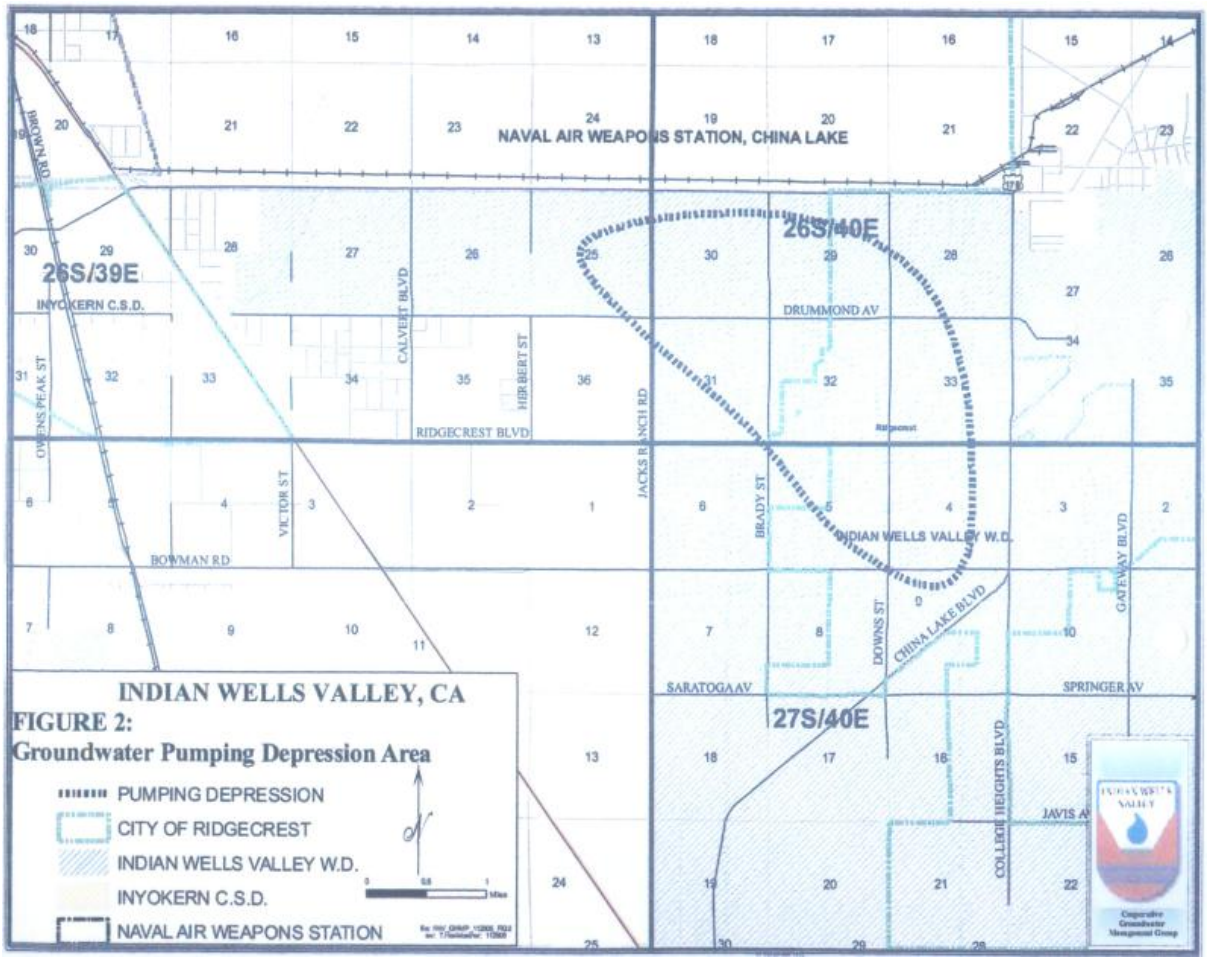


Figure 3-4 Groundwater Pumping Depression Area[101]

Prior to China Lake NAWS operations (late 1940s), the primary use for groundwater in the Indian Wells Valley Groundwater Basin was for mining operation in the adjacent Searles Valley and to a much lesser extent for irrigation of agriculture. Between 1920 and 1937, annual groundwater pumping increased from 1,000 af to slightly less than 2,000 af, respectively. By 1950 pumping had increased to 6,000 af and by the early 1960s, groundwater pumping had exceeded the natural recharge and subflow of the Indian Wells Valley Groundwater Basin. At that time, total inflow into the basin was estimated to be between 9,000 to 11,000 afy. Currently, groundwater pumping within the Indian Wells Valley Groundwater Basin is estimated to total approximately 25,000 afy.[102]

With groundwater pumping increasing over the years, lowering of water levels are apparent throughout the valley; however, the natural flow of the basin continues to be toward China Lake.[103]

[101] Cooperative Groundwater Management Plan for the Indian Wells Valley. Figure 2: Groundwater Pumping Depression Area. http://water.ca.gov/groundwater/docs/GWMP/SL-1_IndianWellsValleyCoop_GWMP_2006.pdf

[102] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

[103] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

Recharge and Discharge in the Indian Wells Valley Groundwater Basin: The Indian Wells Valley area is drained internally. Runoff from the surrounding mountains drains in the direction of the dry lake beds in the lower portion of the valley.[104]

Three playas which include China Lake and two smaller playas, Mirror and Satellite Lakes, are situated in the east-central part of the valley. These playas are the primary valley surface water and groundwater discharge points.[105] In the central areas of the Indian Wells Valley, surface elevations range from approximately 2,150 feet above msl in the northeast to 2,400 feet above msl in the southwest.[106]

As discussed previously, the most recent hydrogeologic system conceptual model for the Indian Wells Valley Groundwater Basin is that the basin is closed and the majority of groundwater inflows are principally from the mountain front recharge off of the Sierra Nevada and subflow from the northern areas of the basin. Basin recharge results from precipitation infiltration, Sierra Nevada runoff, and anthropogenic recharge from excess irrigation and wastewater treatment systems. Basin recharge estimates of 9,000 to 11,000 afy have been made. An estimated total mountain front recharge rate of 9,400 afy was made by Brown and Caldwell.[107]

The Indian Wells Valley Groundwater Basin boundary has been defined to include the Coso Basin north of NAWS China Lake and the southwestern El Paso Basin.[108] Underflow from the Rose Valley and Coso Valley Basins supply recharge to the Indian Wells Valley Groundwater Basin. The Rose Valley Basin provides some sub-flow to the Indian Wells Groundwater Basin through the Little Lake Gap. It is also possible that sub-flow through the basalt flow located approximately five miles to the east of Little Lake Gap provides some sub-flow to the Indian Wells Groundwater Basin. Sub-flow recharge from the Rose Valley Basin has been estimated to be between a few hundred to 3,000 afy, while sub-flow from the Coso Valley Basin has been estimated much lower. Some surface flow enters the Indian Wells Valley Groundwater Basin through the Little Lake Gap during wet years. As this flow is intermittent and anomalous it has not been incorporated in long-term water balance calculations.[109]

In the Indian Wells Valley Groundwater Basin, groundwater is pumped for agricultural, industrial, municipal, and domestic purposes. The main entities pumping groundwater are the Searles Valley Minerals Company, which is located in the adjacent Searles Valley, the IWVWD, and China Lake NAWS. Approximately 25,000 afy was pumped in 2007, the last year for which data was available. Municipal and agricultural uses accounted for approximately 32 percent of that total, industrial uses accounted for 12 percent, and private well owners accounted for 24 percent. In general, it is not well documented how much groundwater is pumped by smaller water providers and domestic well owners for potable use and domestic irrigation. As of 1993, the USBR estimated approximately 3,000 private wells existed in the Indian Wells Valley Groundwater Basin. Of that 3,000, it was estimated that approximately 550 of those were operational and were producing approximately 2,099 afy of groundwater. A total of 1,728 afy were estimated to have been pumped for residential use in

[104] U.S. Geological Survey and the California State Water Resources Control Board. Groundwater Quality in the Indian Wells Valley, California. Fact Sheet 2012-3035. January 2013.
[105] Groundwater Management Group. AB303 Final Report: Installation and Implementation of a Comprehensive Groundwater Monitoring Program for the Indian Wells Valley, California. 2008. http://www.iwvgroundwater.org/
[106] Department of Water Resources. California's Groundwater Update Bulletin 118, Chapter 7: South Lahontan Hydrologic Region. 2003.
[107] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[108] Tetra Tech EM Inc. AB 303 Grant: Groundwater Management in the Indian Wells Valley Basin, Ridgecrest, California. Prepared for the Eastern Kern County Resources Conservation District. June 2003.
[109] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

1996. In 1997, the Indian Wells Valley Groundwater Cooperative Management Group estimated, there were 120 residential cooperative wells and 670 individual domestic wells.[110]

Annual pumping throughout the Indian Wells Valley Groundwater Basin rose from approximately 1,000 af in 1920 to approximately 6,000 af by 1950. Prior to the existence of NAWS in the late 1940s, groundwater was chiefly used for mining operations in Searles Valley. Groundwater for irrigation use was also occurring at this time, however only limited documentation on irrigated acres and volume of pumped groundwater was available. A published hydrogeologic study of the Indian Wells Valley Groundwater Basin estimated that by the late 1950s to early 1960s groundwater pumping equaled or exceeded the sum of natural recharge and subflow. From the 1950s through 2006, the number of groundwater wells increased. However, pumping has remained concentrated in the same regions over that timeframe with the exception of more production wells being installed in the southwest area of the basin.[111]

Indian Wells Valley Water District: The NAWS China Lake Site is not located within the IWVWD current boundaries but is included in the IWVWD sphere of influence. The City Site is located within the IWVWD, which serves customers in Ridgecrest and the surrounding areas. The IWVWD covers an area of approximately 37.7 square miles located in the southeastern part of the Indian Wells Valley.[112] Water from the IWVWD comes from ten wells that pump from the Indian Wells Valley aquifer. Water is pumped from the wells to eleven water reservoirs with a combined storage capacity of about 17 million gallons.[113] Water demand is the highest during the summer months when the average water use in the district is approximately 360 million gallons (1,105 af). Water demand is the lowest during the winter months when the average monthly water use is approximately 125 million gallons (384 af).[114]

Aquifer Properties: Properties used to define the aquifer characteristics include hydraulic conductivity, transmissivity, and storage coefficient. Hydraulic conductivity is the property of the aquifer material to transmit water, and is expressed in units of feet per day (ft/d). Transmissivity is the hydraulic conductivity multiplied by the thickness of the sediments capable of storing water, and is expressed in units of gallons per day per foot or feet squared per day (ft2/d). Storage coefficient refers to the percentage of water that can be released from the aquifer material pore space, and is used for unconfined or water table conditions.[115]
In the development of a groundwater flow model and hydorgologic study for the Indian Wells Valley Groundwater Basin, Brown and Caldwell used hydraulic conductivity values ranging from 0.1 ft/d to 100 ft/d. These values were based on geologic logs, pre-existing groundwater modeling studies, and interpretations based on local geology, depositional environments, and groundwater flow regime. The model showed that the areas with the highest hydraulic conductivities are generally located immediately east of the Sierra Nevada. Areas of the Indian Wells Valley Groundwater Basin with lower hydraulic conductivities are localized and distributed throughout the Basin.[116]
Published aquifer testing data report transmissivity values from less than 1,400 ft^2/d to 36,800 and 44,000 ft^2/d to 155,000 ft^2/d. Both sets of values were based on aquifer testing and geologic data. The Brown and

[110] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[111] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[112] Indian Wells Valley Water District. http://www.iwvwd.com/ Accessed June 2015.
[113] Indian Wells Valley Water District. 2014 Annual Drinking Water Quality Report. http://www.iwvwd.com/public-documents/water-quality-reports/
[114] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[115] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[116] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

Caldwell (2009) model used specific yield ranges of 0.05 to 0.15. Reported well yields in the lower aquifer are more than 1,000 gpm and some wells consistently yield more than 2,000 gpm. The Indian Wells Valley Groundwater Basin has an estimated storage capacity of about 2,200,000 af and 5,120,000 af. The calculated storage of 2,200,000 af is based on 1921 water levels as a steady state limit and 200 feet below this level as the economically feasible limit to extract groundwater.[117]

Groundwater Quality:

Table 3-14. Summary of 2014 Water Quality Data

Summary of 2014 Water Quality Data[118]	
Analyte	Indian Wells Valley Water District General Water Quality (Range values reported in mg/L unless otherwise noted)
Arsenic	0.002-0.0079
Bicarbonates (HCO3)	76-140
Boron	0.180-2.1
Calcium	3.4-37
Chloride	22-410
Fluoride	04.-1.4
Magnesium	ND-5.8
Nitrate (NO3)	ND-12
Nitrate/Nitrite (N)	ND-2.7
Sodium	39-260
Sulfate	20-67
Total Hardness (CaCO3)	8.5-110
Total Dissolved Solids (TDS)	210-890
Uranium (in pCi/L)	ND-6.1
Gross Alpha Particle Activity (in pCi/L)	ND-6.3
Vanadium	ND-0.037
pH (units)	7.5-8.9

Key: mg/L – milligrams per liter, ND – not detected

5.17.2.8 Surface Water

In the vicinity of the NAWS China Lake Site, the topography slopes gently downward to the north at a gradient of approximately 0.4 percent towards the China Lake playa. Ground surface elevations at the site range from approximately 2,222 feet above mean sea level (msl) in the south to 2,213 feet above msl in the north.

In the vicinity of the City Site, the topography slopes to the north at an approximate 1.2 percent slope. Ground surface elevations range from approximately 2,281 feet above msl at the southern boundary to 2,273 feet above msl at the northern boundary.

[117] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/

[118] Indian Wells Valley Water District. 2014 Annual Drinking Water Quality Report. http://www.iwvwd.com/public-documents/water-quality-reports/

Surface water in the Indian Wells Valley drains from the surrounding mountains toward China Lake, a dry lake or playa, just north of Ridgecrest, which is located approximately 2.65 miles north of the NAWS site and approximately 5.85 miles north of the City Site.

Due to the high temperatures, low precipitation, and permeable soils, local drainage is intermittent and occurs as dry washes. Surface runoff and water discharged from the El Paso Mountains move toward lower altitudes where there are alluvial deposits and gentle slopes. As the surface water descends, seepage into the permeable deposits occurs and evaporation increases. The lack of protective vegetation combined with a large amount of solar energy results in limited surface water flow into the Indian Wells Valley.[119]

Both Alternatives and the No Project Alternative are located within the China Lake river-subshed. The NAWS China Lake Site is within the Lark Seep-China Lake creek watershed. The City Site is located within the Mirror Lake creek watershed boundary.[120] Storm water flows ultimately reach China Lake.

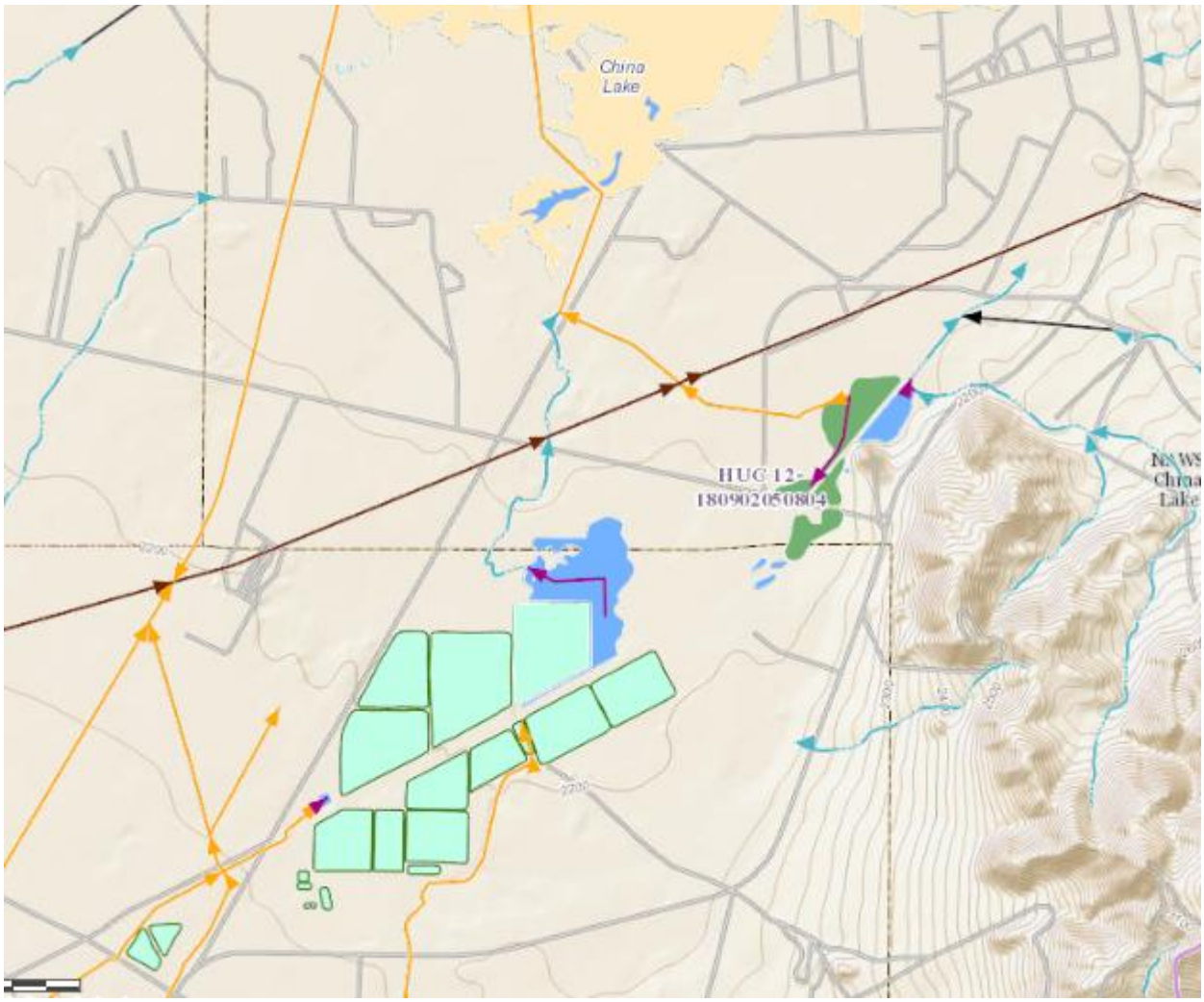


Figure 3-5 China Lake river subshed

[119] AECOM Environment. Ridgecrest Solar Power Project Application for Certification Volume 1, September 2009. http://www.energy.ca.gov/sitingcases/solar_millennium_ridgecrest/documents/applicant/afc/
[120] U.S. Geological Survey. The National Map Viewer. http://viewer.nationalmap.gov/viewer/

According to the FIRM, the NAWS China Lake Site and the City Site are located in an area considered to be outside 0.2% annual chance of flooding. See **Figure 3-6**.

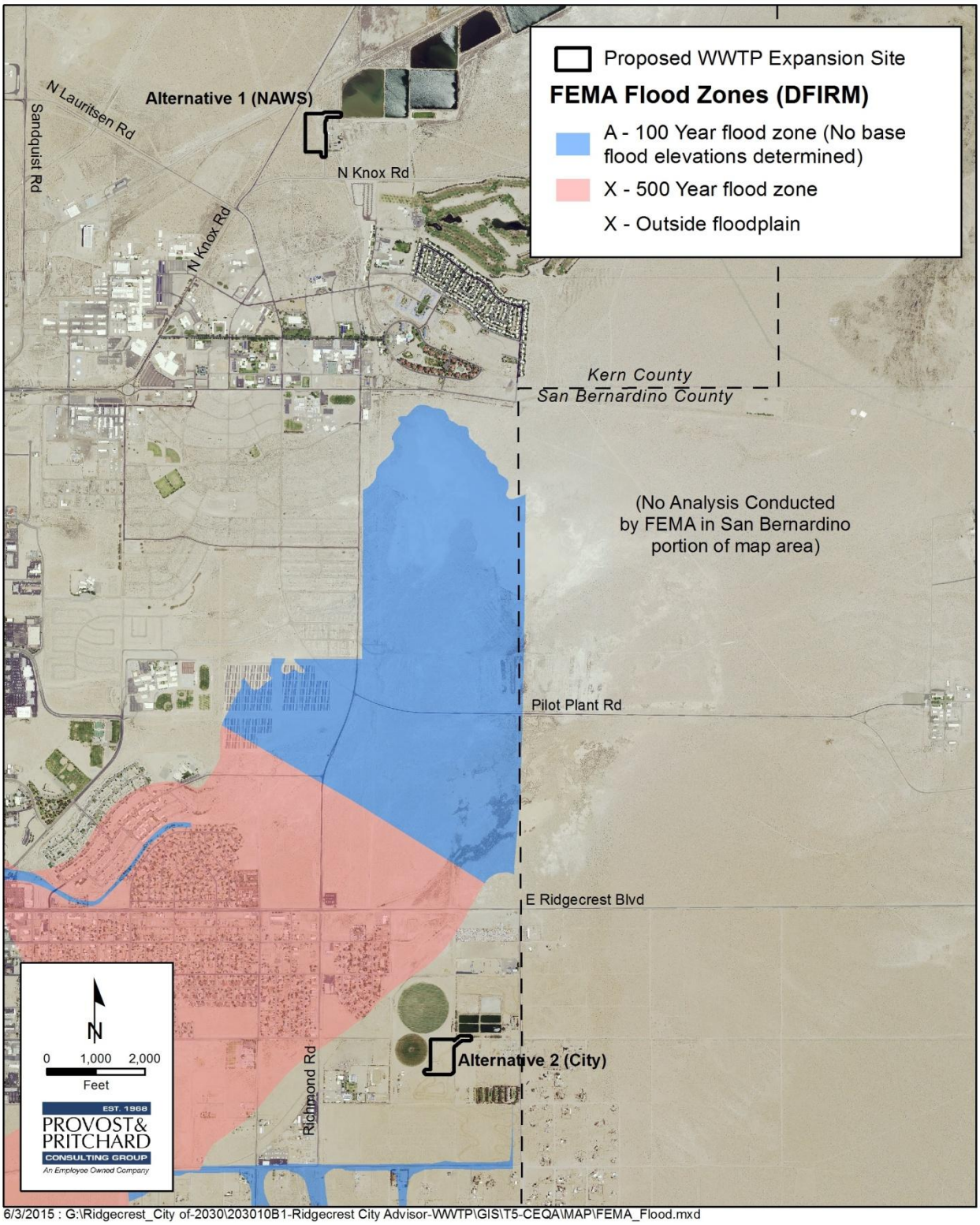


Figure 3-6. Fema Flood Zones

3.9.2 Regulatory Setting

3.9.2.1 Federal

Clean Water Act of 1977 (including 1987 amendments) Sections 401, 402, and 404: The primary objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's surface waters. Pollutants regulated under the CWA include "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand, total suspended solids, oil and grease, and pH; and "non-conventional" pollutants, including any pollutant not identified as either conventional or priority.

Clean Water Act Section 401: Section 401 of the CWA requires certification from the RWQCB that the proposed project is in compliance with established water quality standards. Projects that have the potential to discharge pollutants are required to comply with established water quality objectives. These requirements include the implementation of BMPs during site grading activities and other activities associated with construction of the facility.

Section 401 provides the SWRCB and the RWQCB with the regulatory authority to waive, certify, or deny any proposed federally permitted activity, which could result in a discharge to waters of the State. To waive or certify an activity, these agencies must find that the proposed discharge will comply with State water quality standards. According to the CWA, water quality standards include beneficial uses, water quality objectives/criteria, and compliance with the United State Environmental Protection Agency's (EPA) non-degradation policy.

No license or permit may be issued by a Federal agency until certification required by Section 401 has been granted. Under the CWA, U.S. Army Corps of Engineers (USACE) Section 404 permits are subject to RWQCB Section 401 Water Quality Certification (Title 23 CCR Sections 3830 through 3869). As such, a determination of "waters of the United States" under Section 404 is required by the USACE.

While there is not a direct requirement under a 404 jurisdiction, the RWQCB, under the Porter-Cologne ACT, has authority to regulate discharge of waste to "waters of the State". The definition of the waters of the State is broader than that for waters of the U.S. in that all waters are considered to be a water of the State regardless of circumstances or condition. The term "discharge of waste" is also broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other "discharge" that may directly or indirectly impact waters of the State relative to implementation of Section 401 of the CWA.

Porter-Cologne authorizes the RWQCB to regulate discharges of waste and fill material to waters of the State, including "isolated" waters and wetlands, through the issuance of WDRs. Under Porter-Cologne all parties proposing to discharge waste that could affect the quality of waters of the State, other than into a community sewer system, shall file with the appropriate RWQCB a Report of Waste Discharge (ROWD) containing such information and data as may be required by the RWQCB.

Clean Water Act Section 402: Direct and indirect discharges and stormwater discharges into waters of the U.S. must be made pursuant to a NPDES permit (CWA Section 402). NPDES permits contain industry-specific, technology-based limits and may also include additional water quality-based limits, and establish pollutant monitoring requirements. A NPDES permit may also include discharge limits based on Federal or State water quality criteria or standards.

In 1987, the CWA was amended to include a program to address stormwater discharges for industrial and construction activities. Stormwater discharge is covered by an NPDES permit, either as an individual or general permit. The Lahontan RWQCB administers the NPDES permit program under the CWA in the Ridgecrest area.

Clean Water Act Section 404: Activities resulting in the dredging or filling of jurisdictional waters of the U.S. require authorization under a Section 404 permit issued by the USACE. The USACE may grant authorization under either an individual permit or a nationwide permit to address operations that may affect the ephemeral washes on the Project site. Section 404 permits are also subject to CWA Section 401 water quality certification by the RWQCB, in that projects that have the potential to discharge pollutants are required to comply with established water quality objectives.

Resource Conservation and Recovery Act – Title 40 CFR Part 260 et seq.: RCRA establishes requirements for the treatment, storage, and disposal of hazardous wastes. These requirements include seismic and floodplain protection standards that must be followed by treatment, storage, and/or disposal facilities constructed, operated, or maintained for hazardous wastes that are located within certain distances of fault lines and floodplains.

Federal Emergency Management Agency (FEMA) Flood Zones: The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded).

3.9.2.2 State

California Constitution Article X, Section 2: Article X, Section 2 prohibits the waste or unreasonable use of water, regulates the method of use and method of diversion of water, and requires all water users to conserve and reuse available water supplies to the maximum extent possible.

California Storm Water Permitting Program: California Construction Storm Water Program. Construction activities that disturb one acre or more are required to be covered under California's General Permit for Discharges of Storm Water Associated with Construction Activity, Water Quality Order 99-08-DWQ (General Construction Permit CAS 000002). Activities subject to permitting include clearing, grading, stockpiling, and excavation.

The General Construction Permit requires the development and implementation of a SWPPP that specifies BMPs that will reduce or prevent construction pollutants from leaving the site in stormwater runoff and will also minimize erosion associated with the construction phase. The SWPPP must contain site map(s) that show the construction site perimeter; existing and proposed structures and roadways; stormwater collection and discharge points, general topography both before and after construction; and drainage patterns across the site. Additionally, the SWPPP must describe the monitoring program to be implemented.

Industrial activities with the potential to impact stormwater discharges during operation are required to obtain an NPDES permit for those discharges. In California, an Industrial Storm Water General Permit, Order 97-03-DWQ (General Industrial Permit CAS 000001) may be issued to regulate discharges associated with ten broad categories of industrial activities, including electrical power generating facilities. The General Industrial Permit requires the implementation of management measures that will protect water quality. In addition, the discharger must develop and implement a SWPPP and a monitoring plan. Through the SWPPP, sources of pollutants are to be identified and the means to manage the sources to reduce stormwater pollution described. The monitoring plan requires sampling of stormwater discharges during the wet season and visual inspections during the dry season. A report documenting the status of the program and monitoring results must be submitted to the RWQCB annually by July 1.

The General Industrial Permit, which requires the development and implementation of a SWPPP, is required for the operation phase. The Applicant will prepare a separate operation phase SWPPP that outlines the monitoring and reporting plan, along with BMP-based stormwater mitigation measures for the facility.

California Water Code: Section 461. Stipulates that the primary interest of the people of the State of California is the conservation of all available water resources and requires the maximum reuse of reclaimed water as an offset to using potable resources.

Section 1200 "Water Rights". All water in California falls within one of three categories: surface water, percolating groundwater, or "subterranean streams flowing through known and definite channels." California's water rights law is a hybrid system in that the use of certain types of water requires a permit from the SWRCB, while other types of uses are governed by common law. Only surface water and subterranean stream water are within the permitting jurisdiction of the SWRCB. Since 1914, appropriation of such waters has required a SWRCB permit, and is subject to various permit conditions.

Pre-1914 appropriative and riparian rights do not require a permit. Riparian rights are correlative rights of equal priority among all riparian right holders. The place of use of such water is limited to riparian property (property that is contiguous to a watercourse) that has not had its riparian rights severed. Riparian rights are senior to any appropriative rights, and may not be separated from the riparian parcel and used elsewhere.

Groundwater can be: a) the underground portion of a surface water course (subject to the same rights/permits as the affiliated water course); b) a wholly underground water course which is treated like a water course; or c) percolating groundwater. Water subject to appropriation is defined in Water Code Section 1201, as "all water flowing in any natural channel," except water that is or may be needed for use upon riparian land or water that is otherwise appropriated. The SWRCB's authority over groundwater extends only to the underground portion of a surface stream and to the water in un-appropriated subterranean streams that flow through known or defined channels, except as it is or may be reasonably needed for useful and beneficial purposes upon lands riparian to the channel through which it is flowing. The traditional test to establish SWRCB jurisdiction over groundwater was whether there is sufficient evidence of bed and banks and water flowing along a line of a surface stream. Recent case law has redefined the boundaries of an underground stream to mean the bedrock bottom and side boundaries that are materially less permeable than the alluvium holding groundwater found within an alluvial valley across which flows a surface stream. If there is insufficient evidence to support a finding that the groundwater fits this definition, the SWRCB has no jurisdiction and no permit is required to appropriate the water.

Percolating groundwater has no SWRCB permit requirement and supports two kinds of rights: a) overlying rights, a correlative right of equal priority shared by all who own overlying property and use groundwater on the overlying property; and b) groundwater appropriative rights for use of the overlying property or on overlying property for which the water rights have been severed. The right to use groundwater on property that is not an overlying right is junior to all overlying rights, but has priority among other appropriators on a

first in time use basis. Overlying users cannot take unlimited quantities of water without regard to the needs of other users. Surplus groundwater may be appropriated for use on non-overlying lands, provided such use will not create an overdraft condition.

Riparian water rights, groundwater rights and appropriative rights are all subject to modification to some degree if there is a basin-wide adjudication, which proceeding can be commenced before the SWRCB as an adjudicative bod y (not a permitting role) or before a Court. In adjudication, unused riparian rights and unused overlying rights can be subordinated to appropriative rights.

Water rights in California can be held by any legal entity. Thus the owner can be an individual, related individuals, non-related individuals, trusts, corporations, and/or government agencies. Water rights are considered real property. Riparian rights and overlying groundwater rights are lost if severed from the land, while appropriative rights can be preserved and transferred to other properties. Transfers of water for use elsewhere are permissible without transfers of water rights, subject to many other conditions and approvals, including a "non-injury" to other water rights holders test, assessment of environmental impacts, and for post-1914 appropriative rights, SWRCB approval of any change in place of use, diversion point and/or purpose of use.

The Alternatives are located in Kern County, which has no perennial streams. The Alternatives are located in the Indian Wells Valley Groundwater Basin, which has a surface area of about 382,000 acres. The City of Ridgecrest is a signatory of the Indian Wells Valley Cooperative Groundwater Management Group.

The California Water Code allows any local public agency that provides water service whose service area includes a groundwater basin or portion thereof that is not subject to groundwater management pursuant to a judgment or other order, to adopt and implement a groundwater management plan (California Water Code Sections 10750 et. seq.) Groundwater Management Plans often require reports of pumping and some restrictions on usage. In 2006, the major water service providers and stakeholders in the Indian Wells Valley Groundwater Basin formed the Indian Wells Valley Cooperative Groundwater Management Group and published the Cooperative Groundwater Management Plan. Participants in the plan include the IWVWD, the China Lake Naval Air Weapons Station (NAWS), the Kern County Water Agency, and the City of Ridgecrest and other local agencies and stakeholders. The plan outlines seven objectives with the intent to extend the useful life of the groundwater resources to meet current and foreseeable future needs. The seven objectives are as follows:

1) Limit additional large scale pumping in areas that appear to be adversely impacted. Under this objective, no signatory producing water will increase its annual production of water from the groundwater depression in the area in T26S R40E Sections 29, 30, 32, and parts of sections 31, and 33; and T27S R40E Sections 4, 5, and northern part of Section 9; and T26S R39E part of Section 25. This applies to extractions greater than 5 afy.

2) Distribute new groundwater extraction within the Valley in a manner that will minimize adverse effects to existing groundwater conditions (levels and quality), and maximize the long-term supply within the Indian Wells Valley. Under this objective, the participants will consider developing wells in the outlying areas of the Indian Wells Valley.

3) Aggressively pursue the development and implementation of water conservation and education programs. Under this objective, the Signatories have collectively developed a written policy regarding water conservation (Water Conservation Public Advisory) and will continue to develop water conservation guidelines and education programs.

4) Encourage the use of treated water, reclaimed water, recycled, gray and lower quality water where appropriate and economically feasible. The Signatories will consider the use of nonpotable water, such as treated sewage effluent or poor quality sources, for appropriate re-use applications.

5) Explore the potential for other types of water management programs that are beneficial to the Indian Wells Valley. Under this objective, the Signatories will consider projects such as water transfers, water banking, water importation, groundwater replenishment, and other programs that will enhance or prolong groundwater reserves in the Indian Wells Valley.

6) Continue cooperative efforts to develop information and data which contributes to further defining and better understanding the groundwater resources in the Indian Wells Valley. Under this objective, the Signatories will continue to efforts to gather data and analyze projects focusing on groundwater recharge, discharge, storage, quality, transmissivity, and storativity with respect to groundwater resources of the Indian Wells Valley.

7) Develop an interagency management framework to implement objectives of this Plan. This objective lists the Signatories to the Plan and provides for the further development of this cooperative agreement to define the roles, responsibilities, rights, and obligations of all participants. It also affords the opportunity to enlist new members and provides the administrative framework for implementing applicable elements of this Plan.

Porter-Cologne Water Quality Control Act: The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq. requires the State Water Resource Control Board and the nine Regional Water Quality Control Boards (RWQCB) to adopt water quality standards to protect State waters. Those standards include the identification of beneficial uses, narrative and numerical water quality criteria, and implementation procedures. Water quality standards for the proposed area are contained in the Water Quality Control Plan for the Lahontan Region - North and South Basins, which was adopted by the Lahontan RWQCB in 1995 and amended in 2005. This plan sets numeric and/or narrative water quality criteria controlling the discharge of wastes to the State's waters and land.

Title 23 CCR Division 3, Chapters 9 and 15, provides information on the establishment of requirements for waste discharge and reporting along with requirements specifying conditions for the protection of water quality. Under Chapter 9, the RWQCB is required to issue a Report of Waste Discharge (ROWD) for discharges of waste to land pursuant to the Water Code. The report requires the submittal of information regarding the proposed discharge and waste management unit design and monitoring program. WDRs issued by the RWQCB provide construction and monitoring requirements for the proposed discharge. Chapter 15 outlines the siting, construction, and monitoring requirements for waste discharges to land for landfills, surface impoundments, LTUs (land treatment units), and waste piles.

Title 27 CCR Division 2, Chapter 3. Section 20377 provides guidance for LTUs, referencing general criteria (Section 20320), precipitation and drainage control (Section 20365), and seismic design requirements (Section 20370). Section 20250 stipulates operational and maintenance procedures to minimize mobilization of waste materials.

Section 13050. The surface waters, including ephemeral washes, affected by the Project Alternatives are waters of the State and are subject to State requirements and the RWQCB's authority to issue WDRs for construction and industrial stormwater activities.

Section 13260 et seq. This section requires filing with the appropriate RWQCB a ROWD for activities which waste is discharged that could affect the water quality of the State. The report shall describe the physical and chemical characteristics of the waste and include the results of all tests required by regulations adopted by the

Board, any test adopted by the Department of Toxic Substances Control (DTSC) pursuant to Section 25141 of the Health and Safety Code for extractable, persistent, and bio-accumulative toxic substances in a waste or other material, and any other tests that the SWRCB or RWQCB may require.

Section 13173 (Designated Wastes). This section defines designated waste as either: a) Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 14142 of the Health and Safety Code, or, b) Non-hazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or could reasonably be expected to affect beneficial uses of the waters of the State contained in the appropriate state water quality control plan.

Section 13240 et seq. (Water Control Plan). The Water Quality Control Plan for the Lahontan Region establishes water quality objectives, including narrative and numerical standards that protect the beneficial uses of surface and ground waters in the region. The Plan describes implementation plans and other control measures designed to ensure compliance with state-wide plans and policies and provides comprehensive water quality planning. The following chapters are applicable to determining appropriate control measures and cleanup levels to protect beneficial uses and to meet the water quality objectives: Chapter 2, Beneficial Uses; Chapter 3, Water Quality Objectives; and the sections of Chapter 4, Implementation, entitled "Point Source Controls" and "Non-Point Source Controls."

- Beneficial Uses: Chapter 2 of the Water Quality Control Plan describes beneficial uses of surface and ground waters. The beneficial uses of surface waters of Indian Wells Valley (Hydrologic Unit No. 624.00) are municipal and domestic supply, agricultural supply, groundwater recharge, freshwater replenishment, water recreational purposes, wildlife habitat support, and warm freshwater habitat support. The beneficial uses of ground waters of the Indian Wells Valley Groundwater Basin are municipal and domestic supply, agricultural supply, industrial service supply, and freshwater replenishment.

- Water Quality Objectives: Region-wide numeric and narrative objectives for general surface waters are described in Chapter 3 of the Water Quality Control Plan under the "Water Quality Objectives for Surface Water" and region-wide objectives for groundwater under the "Water Objectives for Ground Water."

- Waste Discharge Requirements: Chapter 4 of the Water Quality Control Plan describes the measures that are to be implemented to protect the beneficial uses and to achieve the water quality objectives of the Plan. The chapter discusses general control actions and describes the Region's Nonpoint Source Program. Specific types of activities and their related control actions are discussed including Waste Discharge Prohibitions, Stormwater Runoff, Erosion, and Sedimentation, Land Development, Groundwater Protection & Management, and Mining, Industry, and Energy Production.

- Section 13243: Under this section, the Regional Water Boards are granted authority to specify conditions or areas where the discharge of waste will not be permitted. The discharge of designated waste can only be discharged to an appropriately designed waste management unit.

Section 13263 (Waste Discharge Requirements). The Lahontan RWQCB will regulate the proposed discharge of fill material, including structural material and/or earthen wastes into wetlands and other waters of the State through WDRs. The Lahontan RWQCB considers WDRs necessary to adequately address potential and planned impacts to waters of the State and to require mitigation for these impacts to comply with the water quality standards specified in the Water Quality Control Plan for the Lahontan Region – North and South Basins.

Section 13271 (Discharge Notification). CWC Section 13271 requires any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharge or deposited where it is, or probably will be, discharged in or on any waters of the State to notify the Office of Emergency Services (OES) of the discharge as specified in that section. The OES then immediately notifies the appropriate regional board and the local health officer and administrator of environmental health of the discharge.

Section 13510. "It is hereby declared that the people of the state have a primary interest in the development of facilities to recycle water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state."

Section 13550. "The Legislature hereby finds and declares that the use of potable domestic water for nonpotable uses, including, but not limited to, cemeteries, golf courses, parks, highway, landscaped areas, and industrial and irrigation uses, is a waste or an unreasonable use of the water within the meaning of Section 2 of Article X of the California Constitution if recycled water is available which meets all of the following conditions, as determined by the State Board." This section requires the use of recycled water for industrial purposes subject to recycled water being available and upon a number of criteria including: provisions that the quality and quantity of the recycled water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources.

Section 13551. This section prohibits a person or public agency, including a State agency, city, county, city and county, district, or any other political subdivision of the State, from using water from any source of quality suitable for potable domestic use for non-potable uses if suitable recycled water is available as provided in Section 13550.

Section 13571. Requires that anyone who constructs, alters, or destroys a water well, cathodic protection well, groundwater monitoring well, or geothermal heat exchange well, file a well completion report with the DWR.

California Code of Regulations: Title 23 Division 3, Chapter 9. Requires the RWQCB to issue a ROWD for discharges of waste to land pursuant to the Water Code. The report requires submittal of information regarding the proposed discharge and waste management unit design and monitoring program. WDRs issued by the RWQCB provide construction and monitoring requirements for the proposed discharge. The SWRCB has adopted general waste discharge requirements (97-10-DWQ) for discharge to land by small domestic wastewater treatment systems.

Title 23 Division 3, Chapter 15. Regulates all discharges of hazardous waste to land that may affect water quality. Chapter 15 broadly defines a waste management area as "an area of land, or a portion of a waste management facility, at which waste is discharged." Therefore, unless exempted, all discharges of hazardous waste to land that may affect water quality are regulated by Chapter 15. This chapter outlines siting, construction and monitoring requirements for waste discharges to land for landfills, surface impoundments, land treatment units, and waste piles. The chapter provides closure and post-closure maintenance and monitoring requirements for surface impoundments that are applicable to the Project Alternatives.

Title 27 Section 2000 et seq. and Title 23 Section 2510 et seq. These sections include requirements for siting and minimum waste management standards for discharges of waste to land. They also establish monitoring and corrective action requirements for discharges to land, including spills and leaks and other unauthorized discharges. These sections require assurances of financial responsibility for closure and post-closure activities and corrective actions for all known or reasonably foreseeable releases.

Provisions of Title 27 CCR apply to designated and non-hazardous solid waste. Provisions of Title 23 apply to hazardous waste. Engineered alternatives that are consistent with Title 27 and Title 23 performance goals may be considered for approval by the RWQCB.

Section 20375 provides guidance for surface impoundments, including construction requirements, operation, maintenance, and inspection. Section 20377 provides guidance for LTUs, referencing general criteria (Section 20320) and precipitation and drainage control (Section 20365) and seismic design requirements (Section 20370). The regulations stipulate operational and maintenance procedures to minimize mobilization of the waste materials (Section 20250).

State Water Resources Control Board Policies: Anti-Degradation Policy (Resolution No. 68-16). Requires that the RWQCBs, in regulating the discharge of waste, to: a) maintain existing high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in water quality less than that described in State or Regional Water Boards policies; and b) require that any activity, which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters, must meet waste discharge requirements that will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.

Water Reclamation Policy (Resolution No. 77-01). Under this policy, the SWRCB and the RWQCBs shall encourage reclamation and reuse of water in water-short areas. Reclaimed water will replace or supplement the use of fresh water or better quality water.

Sources of Drinking Water Policy (Resolution No. 88-63). This policy designates all groundwater and surface waters of the State as drinking water, except where: a) the TDS are greater than 3,000 milligrams per liter (mg/L); b) the well yield is less than 200 gallons per day (gpd) from a single well; c) the water is a geothermal resource, or in a water conveyance facility; or d) the water cannot reasonably be treated for domestic use using either BMPs or best economically achievable treatment practices.

Policies and Procedures for Investigations and Clean-up and Abatement of Discharges under California Water Code Section 13304 (Resolution No. 92-49). This policy establishes requirements for investigation and clean-up and abatement of discharges. Under this policy, clean-up and abatement actions are to implement applicable provisions of Title 23 CCR Chapter 15, to the extent feasible. The policy also requires the application of Section 2550.4 of Chapter 15 when approving any alternative cleanup levels less stringent than background. It requires remediation of the groundwater to the lowest concentration levels of constituents technically and economically feasible, which must at least protect the beneficial uses of groundwater, but need not be more stringent than is necessary to achieve background levels of the constituents in groundwater.

Lahontan Regional Water Quality Control Board:

The Indian Wells Valley is located within the jurisdiction of the Lahontan RWQCB, in an area identified as the South Lahontan Basin which includes the communities of Mammoth Lakes, Bishop, Mojave, Adelanto, Palmdale, Lancaster, Victorville, and Barstow. The Lahontan Region is defined in terms of drainage basins by Section 13200(h) of the Porter-Cologne Act. For planning purposes, it has historically been divided into North and South Lahontan Basins at the boundary between the Mono Lake and East Walker River watersheds. It is about 570 miles long and has a total area of 33,130 square miles. The South Lahontan Basin includes three major surface water systems (the Mono Lake, Owens River, and Mojave River watersheds) and a number of separate closed ground water basins. Very little quantitative information is available on most of the water bodies in the Region.[121]

[121] Lahontan Regional Water Quality Control Board. http://www.waterboards.ca.gov/lahontan/ Accessed December 2015.

The Lahontan RWQCB maintains water quality through control of wastewater discharge types. The IWVWD has the authority to accept, treat, and deliver wastewater effluent as reclaimed water; however, it does not have access to wastewater effluent, which is currently under the jurisdiction of the City of Ridgecrest. The City of Ridgecrest is responsible for the collection, conveyance, treatment, and disposal of wastewater generated within a majority of the Indian Wells Valley region (City of Ridgecrest and NAWS China Lake).[122]

Point source wastewater in the Indian Wells Valley includes municipal wastewater and solid waste sites and other industrial uses primarily originating within Ridgecrest and NAWS China Lake. Point source discharges must meet wastewater discharge requirements, or obtain a waste water waiver. Nonpoint sources, including drainage and percolation from a variety of activities including storm runoff, are mitigated by state management practices.

Recycled Water Policy: The Water Recycling Act of 1991 (Water Code section 13575 *et seq.*) established a statewide goal to recycle a total of 700,000 acre-feet of water per year by the year 2000 and 1,000,000 acre-feet of water per year by the year 2010.
In February 2009, the State Water Board adopted its Recycled Water Policy (SWRCB Resolution No. 2009-0011), the purpose of which is to increase the beneficial use of recycled water from municipal wastewater sources in a manner that fully implements state and federal water quality laws. The policy directs the State to rely less on variable annual precipitation and more on sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater. As a part of the new recycled water policy, the Water Board adopted the following four goals for California:

1. *Increase the use of recycled water over 2002 levels by at least one million acre-feet per year (afy) by 2020 and by at least two million afy by 2030.*
2. *Increase the use of stormwater over use in 2007 by at least 500,000 afy by 2020 and by at least one million afy by 2030.*
3. *Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.*
4. *Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.*

In the new policy, the Water Board also discussed several practical impacts of the greater use of recycled water in the state. Those impacts include the following:

- Groundwater salt and nutrient control: The Water Board imposed a requirement that consistent salt and nutrient management plans be prepared for each basin and subbasin in California. Such plans must include a significant stormwater use and recharge component.
- Landscape irrigation: The Water Board discussed issues involving the permitting of landscape irrigation projects that use recycled water, including the control of incidental runoff of recycled water.
- Groundwater recharge: The Water Board addressed site-specific approvals of groundwater recharge projects using recycled water, emphasizing that such projects must not lower the water quality within a groundwater basin.
- Chemicals of emerging concern: The Water Board further addressed chemicals of emerging concern (CEC), knowledge of which is currently "incomplete." An advisory panel will advise the Water Board regarding actions involving CECs, as they relate to the use of recycled water.

[122] Indian Wells Valley Water District. 2010 Urban Water Management Plan. http://www.iwvwd.com/wp-content/uploads/2013/08/2010-Urban-Water-Management-Plan.pdf

The wide-ranging ramifications of using recycled water, coupled with the aggressive goals established by the Water Board for such future use in California, demonstrates that the new Recycled Water Policy will have a significant impact on land use activities within the state for many years to come.

3.9.2.3 Local

Kern County Ordinance Code, Title 17, Chapter 17.48 – Floodplain Management: In 1968, the U.S. Congress passed the National Flood Insurance Act, which created the NFIP. The NFIP was designed to reduce future flood losses through local floodplain management and to provide protection for property owners against potential losses through an insurance mechanism. As part of the agreement for making flood insurance available to a community, the NFIP requires the community to adopt floodplain management ordinances that meet certain minimum requirements intended to reduce future flood losses. The Municipal Code of Kern County, General Ordinances, Title 17 (Buildings and Construction), Chapter 17.48, "Floodplain Management", contain the provisions to protect public and private property from flood hazards within the county. The chapter contains administrative procedures for management, design of structures, standards for construction and development within areas of flood hazard. The ordinance also provides for identification of high hazard areas, including those areas identified by FEMA and the DWR, Division of Flood Management. Further information can be accessed at: http://www.co.kern.ca.us/bid/pdfs/2008CodeOfRegs.pdf

Kern County Multi-Hazard Mitigation Plan: The purpose of the Kern County Multi-Hazard Mitigation Plan (2005) is to reduce or eliminate long-term risk to people and property from natural hazards in the County, including floods and their effects. This plan was prepared to meet the Disaster Mitigation Act of 2000 requirements in order to maintain the County's eligibility for FEMA Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Programs (HMGP). This plan lays out the strategy that will enable the County to become less vulnerable to future disaster losses.

Kern County Emergency Operations Plan: The Kern County Emergency Operations Plan establishes an emergency management organization and assigns functions and tasks consistent with California's Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). The preservation of life and property is an inherent responsibility of all levels of government. Since disasters in many devastating forms may strike at any time, the County of Kern endeavours to save lives and minimize property damage through prior planning, preparedness measures, and training. Sound emergency plans carried out by knowledgeable and well-trained personnel can and will minimize losses from any disasters that may occur. As defined by SEMS, an Operational Area is defined as an intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county boundary. The County of Kern is the lead agency for the Kern Operational Area and is tasked to coordinate emergency activities between the county, cities and special districts and to serve as a communications link focusing on the collection, processing and dissemination of vital disaster information.

The Plan provides for the integration and coordination of planning efforts of the County/Operational Area with those of its cities, special districts and the state. The content is based on guidance provided by the California Emergency Management Agency, the Federal Emergency Management Agency and Department of Homeland Security. The intent of the Plan is to facilitate emergency response and short-term recovery by providing a framework for response to all significant emergencies, regardless of the nature of the event.

3.9.3 Methodology

In support of this document, Provost and Pritchard conducted an Groundwater Impact Assessment for the proposed Ridgecrest WWTP improvements. Findings and conclusions from the assessment are summarized below. A complete copy of the assessment report is included in Appendix D.

Existing deep groundwater is characterized by moderate Electrical Conductivity (EC) values (500 µmhos/cm). Shallow groundwater is characterized by a much higher specific conductance, up to several thousand µmhos/cm, and as such is not of beneficial use quality. The percolation WWTF basins are above the shallow aquifer and the proposed percolate is of higher quality than the shallow groundwater in nearly all aspects.

Beneficial uses of the receiving water will not be impacted by any of the constituents considered, based on the water quality objectives. The poor quality of shallow groundwater means that for all the potential constituents of concern considered, except Nitrogen, the quality of the effluent being percolated is higher than the quality of the groundwater and no degradation will occur. For Nitrogen, the proposed effluent concentration is slightly above the concentration in the shallow groundwater, which is considered to be of high quality for Nitrogen. However, as the proposed effluent concentration is less than the beneficial use quality objectives and will not cause groundwater to exceed those objectives, potential impact is considered to be less than significant.

3.9.4 Water Quality Standards

In California, water quality standards are the beneficial uses and water quality objectives established within the applicable Basin Plan. The Lahontan Basin Plan establishes water quality standards for the groundwater underlying the Project and the proposed sites for recycled water irrigation.

Groundwater Beneficial Uses and Objectives

Groundwater beneficial uses designated for this portion of the Lahonten Basin are contained in the Basin Plan and include agricultural (AGR) and municipal (MUN) uses. However, in 2015 the MUN use was removed from the groundwater underlying the NAWS China Lake Site, so the criteria for evaluating discharges at NAWS and the City Site are different. Groundwater quality objectives to protect the designated beneficial uses are also contained in the Basin Plan and are summarized in **Table 3-15**

Table 3-15 Groundwater Quality Objectives

Groundwater Quality Objectives		
Parameter	**AGR Objective**	**MUN Objective**
Bacteria (as coliform organisms)	2.2 MPN/100mL (7 day average)	1.1 MPN/100mL (7 day average)
Chemicals:		
General	Not present in concentrations that affect beneficial uses and shall not exceed MCLs in Cal Title 22.	Shall not exceed MCLs and secondary MCLs in Cal Title 22.
Radioactivity	Shall not cause nuisance or adversely affect the beneficial use.	Shall not exceed secondary MCLs in Cal Title 22. Table 4 of Section 64443, Title 22 of CA Code of Regulations
Tastes/Odors	Shall not contain concentrations that cause nuisance or adversely affect beneficial uses	Shall not exceed secondary MCLs in Title 22
Salinity (measured as EC or TDS)	Not present in concentrations that affect beneficial uses.	
Other	Shall comply with goals in McKee & Wolf, "Water Quality Criteria" and other similar references	

Potential constituents of concern for MUN include coliform bacteria, chloride, boron, arsenic, and TDS. The MUN Basin Objective is set to limit constituents in excess of the MCL for primary and secondary contaminants listed in Title 22.

Waters designated AGR are not to contain concentrations of chemical constituents that adversely affect agricultural use. Current agricultural uses in the proposed use areas include cotton, field corn, and alfalfa. In addition to the groundwater quality objectives summarized above, as dictated by the Basin Plan, these crops have various agricultural water quality limitations. Additional groundwater quality objectives for agricultural use are presented in **Table 3-16**. This table is based on agricultural guidelines of water quality for irrigation with unrestricted use, based on Ayers and Westcot (1985). Some relaxed objectives are also available with certain levels of restricted use, with some crops being more tolerant than others.

Table 3-16. Agricultural Groundwater Quality Objectives

Agricultural Groundwater Quality Objectives	
Parameter	**Critical Objective**
Boron	700 – 2,000 µg/L[2]
Chloride	106 mg/L
Selenium	20 µg/L
Sodium	69 mg/L
Total Dissolved Solids (TDS)	450 mg/L
1. Water quality for agriculture from Ayers & Westcot. 2. 700 µg/L for sensitive crops. 2,000 µg/L for moderate sensitivity crops	

The major constituents of concern in assessing the quality of water for agriculture are salinity, boron, and chloride. In general, human and animal uses are less sensitive than crops for these constituents. Salinity (expressed as TDS) reduces crop growth by decreasing the ability of plant roots to absorb water. The salt tolerance of crops also depends on the frequency and type of irrigation. Sprinkler irrigation is most restrictive due to foliar absorption of salt. Absorption and foliar injury are further influenced by high temperature, low humidity, drying winds, type of sprinkler, and timing of irrigation.

Boron is an essential element but can become toxic to some plants when concentrations in water even slightly exceed the amount required for optimal growth. Like salt tolerance, boron tolerance varies with the climate, the soil, and the crop. While boron sensitivity appears to affect a wide variety of crops, sodium and chloride toxicities are mostly limited to tree crops and woody perennials (e.g., citrus, stone-fruit, and vineyards). A predominance of sodium relative to other ions in irrigation water may disperse soil aggregates, which in turn, affects virtually all crops by decreasing the permeability of the soil by water and air.

In determining the concentrations of salinity, boron, chloride, and sodium in groundwater associated with no adverse affects on agricultural beneficial use in the area, multiple criteria apply. The most stringent concentrations become the constraining criteria, and therefore the water quality objectives. Utilizing an extensive constituent list and water quality based assessment thresholds based on the Basin Plan, California primary and secondary maximum contaminant levels (MCL), and water quality standards for agriculture, numeric objectives for the narrative objectives shown in **Table 3-16** were determined.

3.9.5 Impact Assessment/Environmental Consequences

3.9.5.1 IX-a) Would the Project violate any water quality standards or waste discharge requirements?

Alternatives 1 and 2: **Significant and Unavoidable With Mitigation Incorporated.** Groundwater, source water, and influent wastewater statistics are expected to remain the same after construction of the new WWTP under either both Alternatives; however, it will differ from the existing facility in several respects. First, it will be designed from the outset for Nitrogen removal. Second, the new plant will perform more effectively in BOD and TSS removal. No disinfection is proposed, except as separately provided by the Navy prior to golf course irrigation, so no specific level of residual bacteria will be targeted.

In lieu of evaluating existing recycled water data, as would be the case with an existing treatment plant, the quality of the intended surface water supply and estimates of potential recycled water quality based on the proposed level of treatment at the WWTP have been used to compare to applicable water quality objectives. This assessment is contained in the Groundwater Impact Assessment for the Proposed Ridgecrest WWTP Improvements prepared by Provost & Pritchard Consulting Group. Based on this comparison, as well as identifying constituents known to be of concern to the Water Board, this analysis then determined if the proposed Project Alternatives will degrade groundwater quality below applicable water quality objectives, or degrade existing high quality waters.

Surface Water: As can be seen in **Table 3-17,** none of the constituents in source water currently surpass their MCLs.

Table 3-17. Potable Water Supply Data Summary – City of Ridgecrest

Potable Water Supply Data Summary – Indian Wells Valley Water District			
Constituent	**Average Concentration**	**Range**	**Units**
Regulated (Primary MCL)			
Arsenic	3.3	2.0-7.9	µg/L
Nitrate (as NO_2)	5.8	ND-12.0	mg/L
Nitrate + nitrite (as N)	1.35	ND-2.7	mg/L
TTHMs	2.7	ND-5.8	ppb
Fluoride	0.7	0.4-1.4	mg/L
Secondary MCLs			
TDS	347	210-890	mg/L
Electrical Conductivity (EC)	558	330-1600	µmhos/cm
Chloride	81.3	22-410	mg/L
Sulfate	38.4	20-67	
Calcium	24	3.4-37	mg/L
Unregulated Substances			
Boron	0.63	0.18-2.1	mg/L
Hardness	71.9	8.5-110	mg/L
Magnesium	2.9	ND-5.8	mg/L
Sodium	71.8	39-260	mg/L
pH	8.1	7.5-8.9	sg
Listed Concentrations are taken from the 2014 Consumer Confidence Report published by the Indian Wells Water District for the City of Ridgecrest water system and are considered representative of the 2014 average quality of supply water.			

Copper and lead concentrations are presumed to result from corrosion of household plumbing systems, particularly copper water services and lead plumbing fixtures, which are predominantly found in older housing units. Other sources can include the erosion of natural deposits and discharges from industrial manufacturers. Copper and lead tests were also performed on the City's potable water, the results of which can be found in **Table 3-18**.

Table 3-18. Source Water Copper and Lead Tests

Source Water Copper and Lead Tests						
Substance	**Unit**	**Year**	**Violation**	**AL**	**PHG**	**Amount Detected**
Copper	ppm	2012	No	1.3	0.3	0.05
Lead	ppb	2012	No	15	0.2	ND
Listed concentrations are taken from the 2014 Consumer Confidence Report published by the Indian Wells Water District for the City of Ridgecrest water system.						

The reported copper concentrations are low at roughly one-sixth of the Public Health Goal and the impact they have on the overall water quality is therefore considered insignificant. No lead was detected in the source water tests.

Table 3-19. Monitor Well Groundwater Quality Summary

Monitor Well Groundwater Quality Summary							
	NAWS WWTP Wells				City Site Wells		
	26S40E14B01	**26S40E13D03**	**26S40E13C02**	**26S40E13M02**	**CR-MW02**	**CR-MW02**	**CR-MW03**
Groundwater Elevation (ft)	2179.57	2178.71	2182.59	2180.55	2159.05	2161.09	2159.36
Ammonia (NH4) (mg/L)	0.35	0.13	0.15	0.18	0.16	0.17	0.13
Chloride (mg/L)	290	390	270	170	320	220	210
Nitrate as N (mg/L)	<1.1	<2.2	<1.1	<0.6	2.5	1.2	1.5
TKN (mg/L)	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TDS (mg/L)	1400	1500	1200	1100	740	760	780
Surfactants (MBAS) (mg/L)	0.21	0.24	0.096	0.09	<0.05	<0.05	<0.05
Arsenic (µg/L)	520	550	260	380	43	9.9	10

Most of the constituents in the local groundwater meet the MCL requirements, but the groundwater is considered of poor quality for chloride, TDS and arsenic. With the following exceptions, the effluent produced by the treatment plant is of higher quality than the groundwater and will not degrade the quality of the existing groundwater. The impacts for all these constituents are considered to be **Less Than Significant**.

In the current condition and under the No Project Alternative, nitrogen is not and will not be removed from the WWTP effluent, yet the average effluent concentration is at or just above the MCL. While that doesn't matter at the NAWS site where the AGR beneficial use is in place, at the City site subject to the limits of the MUN beneficial use this results in degradation of a high-quality background, which is a **Significant and**

Unavoidable impact. Under Alternative 1 and Alternative 2 design of the new WWTP will include nitrogen removal, to concentration levels below the MCL but above the concentration found in the groundwater. This application of the best available technology for nitrogen removal will improve the current situation, reducing the nitrogen concentration of the effluent below the MCL, though there will still be degradation of the groundwater with respect to nitrogen. Because of degradation of a high-quality groundwater at the City site, this impact is determined to be **Significant but Unavoidable**.

The anticipated boron concentration of the effluent is 1.1 mg/L. The concentration of boron in the source municipal water ranges from 0.18 to 2.1 mg/L, according to reporting from the IWVWD, the City's water purveyor. Shallow groundwater concentrations have not been tested, so are presumed to be of high quality with respect to Boron at both the NAWS and City sites. The most representative effluent concentration for boron comes from testing done in the existing Pond #3, which is tested semi-annually. Boron concentrations vary but have averaged just over 1.0 mg/L. There is no numeric objective for boron concentration for AGR-designated groundwaters in the Lahontan basin. The maximum concentration from moderately-sensitive agriculture is 2 mg/L. There is no State or Federal MCL for boron; however there is a State Notification Level of 1 mg/L. The average effluent concentration is just below these levels. Though this discharge may slightly degrade the presumed high-quality background, this impact is considered to be **Less Than Significant**.

Total dissolved solids (TDS) will not meet the most stringent agricultural water quality objectives after treatment, but will meet the MUN BQO upper limit of 1000 mg/L. The effluent TDS concentration will be substantially less than the groundwater TDS concentration at both the NAWS site and the City site. Therefore, no further degradation of the groundwater will take place as a result of effluent percolation at the City WWTP and NAWS ponds, and the impact is considered **Less Than Significant**.

When the effluent TDS concentration is increased in the root zone by evapo-transpiration during irrigation, of the golf course at the NAWS site or the alfalfa fields at the City site, the concentration in the percolate will be higher than the background at both the NAWS and City sites. These impacts are determined to be **Significant but Unavoidable**.

It is noted that these effects are unavoidable impacts of irrigation. However, there is no change from the No Project Alternative with either Alternative 1 or 2. As noted, State policy encourages irrigation with wastewater effluent and it is presumed to be beneficial so long as other environmental regulations are met. The proposed WWTP will not disinfect effluent. Natural disinfection resulting from subsurface transport down through the soil will effectively remove Coliform from both the incidental percolate and the alfalfa percolate at the City WWTP site, resulting in **Less Than Significant** impacts for Coliform at this location. At the NAWS site, chemical disinfection performed locally by the Navy prior to irrigating the golf course will effectively remove Coliform from both the golf course percolate, resulting in **Less Than Significant** impacts for Coliform at that location.

The very shallow groundwater at the NAWS site may not provide sufficient underground transport for full natural disinfection of the incidental percolation at the NAWS ponds. However, the AGR beneficial use has no WQO for Coliform bacteria. There is no change from the current condition. This impact is considered **Less than Significant**.

The following mitigation measures will help to lower the impacts caused by the proposed Project Alternatives:

3.9.6 Mitigation Measures

HYD-1: The City shall prepare and implement an irrigated land nutrient management plan for the golf course and alfalfa field irrigation site. This will help insure that nutrients (N), water and fertilizer will be applied at agronomic rates only and thus do not adversely affect groundwater.

HYD-2: The City shall prepare and implement a groundwater study at the City site to determine if additional groundwater monitor wells are needed for the long-term assessment of groundwater impacts from the new percolation ponds and construct new monitor wells as indicated and approved by the RWQCB.

HYD-3: The City shall construct best practicable treatment and control (BPTC) technology to mitigate impacts from TDS and nitrogen on the shallow groundwater. BPTC is to be determined with the submittal of the anti-degradation analysis per SWRCB Resolution 68-16 in the Report of Waste Discharge submitted for a Waste Discharge Permit.

Even with mitigation measures **HYD-1**, **HYD-2**, and **HYD-3**, impacts to Nitrogen and effluent TDS concentration, would still be considered **Significant and Unavoidable**.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.1 IX-b) Would the Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Alternatives 1 and 2: **Less Than Significant Impact.** The chief source of natural groundwater recharge in the Indian Wells Valley is from infiltration of surface runoff from the Sierra Nevada, Coso and Argus mountain ranges and subflow from the Rose Valley and the Coso Groundwater Basins. Implementation of either Project Alternative would result in the development of an undeveloped lot which would result in an increase in impervious surfaces over existing conditions. Additional impervious surfaces would reduce the amount of groundwater recharge for the percolation of rainwater on site, however it is well understood that groundwater recharge from direct precipitation in the Indian Wells Valley is insignificant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.2 IX-c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Alternatives 1 and 2: **Less Than Significant Impact.** The NAWS China Lake Site is vacant and disturbed land that is relatively flat, with a gentle gradient to the northeast. The City Site consists of vacant and disturbed land as well, with a gentle gradient to the north-northwest. Construction and operation would not alter the course of a stream or river, as none exist on either site. Construction associated with the development of the Project Alternative 1 would result in limited land-disturbing activities such as grading, excavation and trenching for utility infrastructure installation. When portions of either Project site are excavated or otherwise disturbed by construction activities, the potential for soil erosion and sedimentation in runoff discharging from the construction site would substantially increase during a rainstorm.

To reduce or eliminate construction-related water quality effects, future contractors would be required under federal regulations to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans. As a performance standard, General Construction Permits require controls of pollutant discharges that use best available technology (BAT) that is economically achievable, best conventional pollutant control technology (BCT) to reduce pollutants, and any other stringent controls necessary to meet water quality standards. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other nonpoint source runoff.

Measures range from source controls, such as reduced surface disturbance, to treatment of polluted runoff, such as detention or retention basins. BMPs to be implemented as part of the General Construction Permit may include, but are not limited to, the following measures:

- The employment of temporary erosion and sediment control measures (such as straw mulch and tackifier, silt fences, staked wattles, silt/sediment basins and tarps, check dams, geofabric, and temporary revegetation or other ground cover) to control erosion and sedimentation from disturbed areas.
- The protection of drainage facilities in downstream off-site areas from sediment using temporary structureal BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, as needed to stabilize disturbed areas until vegetation becomes established.
- The establishment of grass or other vegetative cover or other approved erosion control measure will be established on the construction site as soon as possible after disturbance such that no disturbed surfaces will be left without erosion control measure in place.

In addition, construction equipment would have the potential to leak polluting materials, including oil and gasoline. Improper use of fuels, oils, and other construction-related hazardous materials such as pipe sealant may also pose a threat to surface or groundwater quality. However, BMPs will minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. Prior to issuance of a grading permit, the applicant would be required to file a Notice of Intent (NOI) with the RWQCB, thereby providing notification and intent to comply with the State of California general permit. Prior to issuance of the first grading permit, a Storm Water Pollution Prevention Plan (SWPPP) must be completed for on-site and associated off-site construction activities. A copy of the SWPPP outlines the source control and/or treatment control best management practices (BMPs) that will avoid or mitigate runoff pollutants at the construction site to the "maximum extent practicable."

Compliance with the NPDES permit, preparation and implementation of a SWPPP, and the filing of a NOI with the RWQCB, would ensure that any impact would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.3 IX-d) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Alternatives 1 and 2: **Less Than Significant Impact.** Both the NAWS China Lake Site and City Site consist of vacant and disturbed land that is relatively flat, with a gentle gradient. As discussed under Impact IX-c, construction and operation would not alter the course of a stream or river, as none exists on site.

Stormwater runoff would sheet flow across the paved areas until it is directed by curbs and gutters to a series of inlets. The City of Ridgecrest Engineering Division reviews each development project for drainage conveyance and storage of stormwater. Any necessary on-site improvements would be constructed to the

standards and specifications outlined by the City. For these reasons, construction and occupation would not cause significant impact by increasing runoff in a manner that would cause flooding either on or off site.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.4 IX-e) Would the Project 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?

Alternative 1: **Less Than Significant Impact.** Stormwater runoff on both the NAWS China Lake Site and the City Site would sheet flow across the paved areas until it is directed by curbs and gutters to a series of inlets. All runoff generated within the City Site will be discharged into a City of Ridgecrest storm drainage system. The City of Ridgecrest Engineering Division reviews each development project for drainage conveyance and storage of stormwater, and necessary on-site improvements would be constructed to the standards and specifications outlined by the City. For these reasons, construction and occupation would not cause significant impact by increasing runoff in a manner that would exceed existing capacity or provide substantial additional sources of polluted runoff.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.5 IX-f) Would the Project otherwise substantially degrade water quality?

Alternatives 1 and 2: **Significant and Unavoidable Impact.** As discussed in Impact IX-a, Provost and Pritchard conducted an Antidegradation Study and Water Quality Impact Assessment for the proposed Ridgecrest WWTP improvements (Appendix XYZ).
Beneficial uses of the receiving water will not be impacted by any of the constituents considered, based on the water quality objectives. The poor quality of shallow groundwater means that for all the potential constituents of concern considered, except Nitrogen, boron, total dissolved solids, and coliform, the quality of the effluent being percolated is higher than the quality of the groundwater and no degradation will occur. As explained in Impact IX-a, significant and unavoidable impacts will occur at the City site for Nitrogen and at the NAWS golf course for TDS. Mitigation measures **HYD-1**, **HYD-2**, and **HYD-3**, would help to reduce impacts to Nitrogen and effluent TDS concentration. However, impacts would still be considered **Significant and Unavoidable**.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.6 IX-g) Would the Project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Alternatives 1 and 2: **No Impact.** Both the NAWS China Lake and City Sites are located outside of the 100-year floodplain as defined by FEMA. Furthermore, the construction of housing is not proposed by either Alternative 1 or 2.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.7 IX-h) Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Alternatives 1 and 2: **Less Than Significant Impact.** Both the NAWS China Lake and City Sites are located outside of the 100-year floodplain as defined by FEMA. Additionally, as neither Alternative 1 nor 2 would place structures within the 100-year floodplain, the Project Alternatives would not impede or direct flood flows. Neither site is located within ZoneX500, or the 500-year flood zone. A "special flood hazard area" is defined as an area located within FIRM zones designated as 100-year flood zones. As this alternative is not located within a 100-year flood zone, the Project is not considered to be in a special flood hazard area.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.8 IX-i) Would the Project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Alternatives 1 and 2: **No Impact.** Dam failures are usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake. Dams must be operated and maintained in a safe manner, which is ensured through inspections for safety deficiencies, analyses using current technologies and designs, and taking corrective actions as needed based on current engineering practices. There are no dammed water bodies with the potential to flood the NAWS China Lake Site or City Site. As previously noted, neither site is located within the 100-year flood zone; therefore they are not considered to be located in special flood hazard areas.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

3.9.6.9 IX-j) Would the Project be vulnerable to inundation by seiche, tsunami, or mudflow?

Alternatives 1 and 2: **No Impact.** Both the NAWS China Lake Site and City Site are not located near a large body of water (i.e., ocean, lake, or reservoir) to potentially be at risk to seismicity induced water hazards such as a seiche or a tsunami. The City of Ridgecrest is generally surrounded by mountains, but there are no steep slopes in the vicinity of either site. As both the NAWS China Lake Site and the City Site are relatively flat, there does not appear to be any potential for mudflow.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environmental. Therefore, the environmental baseline would be maintained and no impact would occur.

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3.10 Land Use and Planning

3.10.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on Naval Air Weapons Station (NAWS) China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with natural vegetation.
2. **City Site:** The City Site consists of properties located to both sides of San Bernardino Boulevard. The area to the west, between Church Avenue and Bowman Road, is within the corporate boundary of, and owned by, the City of Ridgecrest. The site is 180 acres in size and contains 12 acres of existing wastewater ponds, approximately 33 acres of alfalfa fields where treated effluent is used as irrigation water, and a 20-acre off-road vehicle park, with the remainder of the site occupied by common natural vegetation. The 12 acres of existing wastewater ponds would remain on this site under all Alternatives, and the off-road vehicle park would be replaced with disposal ponds under Alternatives 1 and 2. This site also includes adjacent City-owned property located east of San Bernardino Boulevard between California Avenue and Upjohn Avenue, in San Bernardino County. The site is 50 acres in size and contains common natural vegetation. Surrounding uses include residential development and a cemetery.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on the NAWS site, the wastewater disposal ponds located at the NAWS and City sites, and the existing four-mile effluent force main, as illustrated in **Figure 2-2**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCB waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

3.10.2 Regulatory Setting

3.10.2.1 Federal

Comprehensive Land Use Management Plan (CLUMP) for NAWS China Lake: The CLUMP contains land use guidelines and procedures for the management of military operations and environmental resources at NAWS China Lake. It provides a working tool to accommodate changes and updates to meet the current and future land use management needs. The CLUMP establishes baseline conditions for environmental resources and

land use in accordance with other keystone management plans at NAWS. These keystone plans include the draft Integrated Natural Resources Management Plan (INRMP), the draft Integrated Cultural Resources Management Plan (ICRMP), the draft Range Management Plan (RMP), the Air Installation Compatible Use Zones (AICUZ) update, and other technical directives.

According to CLUMP Figures 2-6 and 2-8, the NAWS China Lake Site is located in the George Range Land Use Management Unit and are designated as Facility Sites.

Chapter 2.4, Nonmilitary Land Use, specifically addresses nonmilitary land uses on the NAWS, such as the existing and proposed wastewater treatment facilities. It states, "The navy may accommodate nonmilitary land use that does not adversely affect military operations or create safety, security, fiscal, or regulatory concerns. These considerations apply to all nonmilitary use currently or potentially accommodate on NAWS lands. At the Commanding Officer's (CO) discretion, nonmilitary use will continue to be limited to certain areas and will be a privilege granted by the CO. Exercise of this privilege requires adherence to all NAWS traffic regulations, range procedure, area access limitations, and other applicable security and administrative regulations. The NAWS Public Access Policy outlines the procedures, restrictions, and conditions for public access to the Station lands." Specific categories of nonmilitary uses on NAWS China Lake include Native American access for events, educational and research projects, various recreational and commercial uses such as geothermal production, cattle grazing, commercial filming, easements, and facility use.

Additionally, the NAWS China Lake Site is subject to the following CLUMP policies, objectives and guidelines:

1. **Nonmilitary Land Use Policy:** NAWS intends to accommodate nonmilitary land uses to the extent that (1) these activities are compatible with the military mission and (2) they do not create adverse safety, security, fiscal, regulatory, or environmental effects. Nonmilitary land use is grouped into four categories: Native American interests, educational and research activities, recreational activities, and commercial activities.
2. **CLUMP Goal No. 5:** Maintain and enhance coordination and cooperation with neighboring communities, agencies, and organizations.
3. **Objective 5-1:** Continue to coordinate land-management initiatives with off-Station land-management agencies to ensure compatible land use development on adjacent lands.
4. **CLUMP Goal No. 6:** Provide reasonable accommodation of compatible nonmilitary land use to the extent practicable.

NAWS China Lake Integrated Natural Resources Management Plan (INRMP): The purpose of this Integrated Natural Resources Management Plan (INRMP) is to provide a viable framework for the management of natural resources at the Naval Air Weapons Station, China Lake.

The INRMP is designed to facilitate compliance with natural resources protection laws and meet requirements of the Sikes Act (USC 670) (as amended), applicable Department of Defense (DOD) and Department of the Navy (DON) regulations, the California Desert Protection Act (CDPA), Section 805 of the Military Lands Withdrawal Act, 1994, and the Federal Land Policy and Management Act (FLPMA) 1979. It fulfills the requirements of the Naval Operations Instruction (OPNAVINST 5090.1B), Environmental and Natural Resources Program Manual, which requires Navy installations with suitable land and water resources to establish a natural resource management plan. This INRMP provides a practical framework to support the decisions of the Commanding Officer and specific management activities which can be implemented by the NAWS/CL Environmental Project Office.

The goals of the INRMP include:

1. **Goal 1:** Conserve, protect, and enhance natural ecosystems (natural resources) and biodiversity while guaranteeing continued access to NAWS/CL lands, waters, vegetation, and wildlife resources for the military mission.
2. **Goal 2:** Manage NAWS China Lake lands in a manner that accommodates ongoing and evolving military mission support requirements and conserves and protects land-based environmental resources in accordance with compliance requirements and stewardship principles.
3. **Goal 3:** Provide for the organizational capacity, support, and communication linkages necessary for the successful implementation and administration of the INRMP and NAWS/CL's natural resources.

According to Section 3.2, Mojave Tui Chub, operations at the City of Ridgecrest operated Wastewater Treatment Facility may be affected as any modifications in management of the facility could affect the chub. Therefore, the proposed project shall comply with the following objective and guidelines:

1. **Objective 1:** Maintain a viable population of the Mohave tui chub in the Lark Seep system.
2. **Guidelines:**
    a. Continue the annual cattail/tule removal program.
    b. Conduct chub population censuses, preferably annually, but not less than every three years, with confirmation of chub presence at regular intervals between major census efforts.
    c. Develop and maintain data in a NAWS/CL GIS database for resources management.
    d. Educate station personnel and the general public about the Mohave tui chub and on-going projects involving chubs.
    e. Develop an emergency plan and be prepared to implement it in the event a catastrophic event threatens the survival of the chub population.
    f. Develop a plan for habitat improvement leading to a low-maintenance wetlands system (deep and wide), providing a more stable environment for the chub.

According to Section 3.2, Landscaping and Grounds Maintenance, NAWS/CL's arid desert location and limited ground water resources makes water usage a major concern. NAWS/CL addresses this issue by emphasizing a water conservation program. Xeriscaping, an important aspect of the water conservation program, is based on the use of native or drought-resistant plants and efficient irrigation practices that require less water. Additionally, new technology should be implemented to reduce water usage whenever possible. For example, timers and drip irrigation can enable landscape watering during the most efficient time of day. Deteriorated and out-of-date irrigation systems should be upgraded and retrofitted with efficient, low-water use components. Therefore, the proposed Project Alternatives shall comply with the following objective and guidelines:

1. **Objective:** Consider environmental factors in landscape planning.
2. **Guidelines:**
    a. Implement new technology to reduce water usage whenever possible.
    b. Utilize xeriscaping to the maximum extent possible.
    c. Create aesthetic, functional, xeriscaped, and shaded areas that people can use for relaxation, exercise, etc.
    d. Use native species to the greatest extent possible.

According to Section 3.4, Water Resources, management of water resources at NAWS/CL involves the identification, monitoring, permitting, use, maintenance, protection, and enhancement of surface waters and

groundwater. Therefore, the proposed Project Alternatives shall comply with the following objectives and guidelines:

1. **Objective 1:** Achieve full compliance with requirements of the Clean Water Act, specifically provisions involving Waters of the United States.
    a. Guidelines:
        i. Thoroughly evaluate requirements of the Clean Water Act as they pertain to surface water at NAWS/CL.
        ii. Review military and nonmilitary uses at NAWS/CL and determine which uses may impact Waters of the United States.
        iii. Consult with the Army Corps of Engineers and the Lahonton Regional Water Quality Control Board to ensure appropriateness and adequacy of compliance.
        iv. Evaluate the requirement to submit a permit application, under Sections 401 and 404, to the U.S. Army Corps of Engineers and Lahonton Water Quality Control Board.
        v. Develop management guidelines based on the determination of which uses may impact Waters of the United States and amend the Integrated Natural Resources Management Plan as appropriate.
2. **Objective 2:** Continue to inventory, protect, and enhance springs, seeps, other water sources, and associated adjacent habitats.
    a. Guidelines:
        i. Continue the long-term program to characterize springs, seeps, and other water sources.
        ii. Monitor water source conditions and identify adverse impacts.
        iii. Design and implement a management program to assess, protect, and enhance all station water sources.
        iv. Provide physical protection to high value habitats through the construction of exclosure fencing, particularly around water sources, taking particular care to ensure that water remains available to designated species outside exclosures.
3. **Objective 3:** Continue to manage groundwater resources in accordance with the goals of the Indian Wells Valley Cooperative Groundwater Management Plan to ensure the conservation and long-term availability of high-quality groundwater resources.
    a. Guidelines:
        i. Continue to limit additional large-scale pumping in already adversely affected areas.
        ii. Distribute new groundwater production to minimize adverse impacts.
        iii. Develop and implement a water conservation and education program.
        iv. Continue to advocate use of treated water; reclaimed water; and recycled, gray and lower quality water.
        v. Explore other water management programs such as transfers, banking, imports, and replenishment.
        vi. Continue the cooperative groundwater data acquisition and distribution program.

vii. Develop a cooperative management framework.

According to Section 4.4, Outdoor Recreation, implementation of recreational programs requires careful assessment of potential effects with respect to air, noise, and water pollution; health and safety; security; and interference with military activities. Certain outdoor recreation opportunities at NAWS are, at their present level of activity, compatible with each other and NAWS missions. Section 1.6.4.7 identifies the Kerncrest Chapter of the Audubon Society and the Kern-Kaweah Chapter of the Sierra Club as interested parties for natural resources. Specifically, the Audubon Society has been active with bird surveys at NAWS/CL for many years. The Chapter conducts the annual Christmas bird count as well as other bird counts. The Chapter has 10 years of detailed data on bird use of the sewer ponds (800 surveys), a valuable long-term monitoring effort. Members are available to assist NAWS/CL with other wildlife surveys. Since the existing wastewater treatment facility ponds are recognized for their recreational value, it is assumed that any new ponds associated with the proposed Project Alternatives would present similar opportunities. Therefore, the proposed Project Alternatives shall comply with the following objective and guidelines:

1. **Objective:** Continue to evaluate opportunities for recreation on NAWS.
    a. Guidelines:
        i. Periodically review appropriateness of instituting new recreation activities.
        ii. Eliminate off-road vehicle use on NAWS land and land sailing and other recreational activities on dry lake playas.
        iii. Maintain recreational opportunities on NAWS which do not impact operations, such as petroglyph tours, birdwatching on the wastewater treatment ponds, and other recreation not conducted on the ranges.

China Lake Air Installation Compatible Use Zone Study: The AICUZ Study highlights this opportunity and offers recommended strategies and planning tools that can be applied by local agencies to promote compatible land use development before encroachment becomes a serious problem at Armitage Airfield. The study examines various airfield planning parameters related to aircraft operations, noise, and safety, and provides an analysis of land use compatibility in both on- and off-Station properties.

The AICUZ Program also identifies Accident Potential Zones (APZs) as a planning tool for installation planners and local government agencies. APZs are areas where an aircraft-related mishap is most likely to occur. APZs encompass a portion of departure, arrival, and other flight routes flown by aircraft at NAWS. The proposed Alternatives are not located within APZs.

In addition to encouraging land uses that are compatible with aircraft-related noise impacts and public health and safety considerations, the Federal Aviation Administration (FAA) and DOD also encourage military planners and local communities to prevent development or land uses that could endanger aircraft in the vicinity of the airfield. Accordingly, this AICUZ study also addresses the following considerations:

- Lighting (direct or reflected) that would impair pilot vision;
- Towers, tall structures, and vegetation that penetrate navigable airspace or are to be constructed near the airfield;
- Land uses that would generate smoke, steam, or dust;
- Land uses that would attract birds, especially waterfowl; and
- Electromagnetic interference with aircraft communications, navigation, or other electrical systems.

According to personnel at NAWS, there are no existing or expected major issues related to off-installation lighting in the vicinity of or on approach and departure routes to the airfield. While the effects of existing

light sources and glare are not currently a significant operational concern, initiatives should be pursued on- and off-Station to ensure that future sources are developed in a manner that minimizes the potential for impacts to NAWS' test and training operations. Additionally, the proposed Project Alternatives do not involve the construction of towers, tall structures, and vegetation that could penetrate navigable airspace, land uses that would generate smoke, steam, or dust, or elements that could emit electromagnetic interference with aircraft communications, navigation, or other electrical systems. However, the construction of new wastewater treatment ponds could potentially attract waterfowl.

In accordance with Section 4.7 of the AICUZ Study, Bird/Animal Aircraft Strike Hazard (BASH) plans are required by the DOD for military installations where there is a potential for conflict between military activity and wildlife. BASH plans contain installation-specific information and guidelines to minimize the potential for collisions between aircraft and birds or other animals. In September 2002, NAWS developed and formally implemented a BASH plan for air operations at Armitage Airfield. The plan complies with DOD and Navy directives, and is implemented through NAWS Instruction (NAWSINST) 3750.2. The program is designed to control birds, alert aircrew and operations personnel, and to provide increased levels of flight safety, especially during the critical phases of flight. This plan establishes specific procedures to reduce known and potential bird hazards on and around NAWS. The NAWS BASH program is designed to:

- Establish a Bird Hazard Working Group (BHWG) and designate responsibilities to its members.
- Establish training for appropriate base members concerning responsibilities and actions.
- Establish procedures to identify high hazard situations and to aid supervisors and aircrews in altering/discontinuing flying operations when required.
- Establish aircraft and airfield operating procedures to avoid high hazard situations.
- Provide a method for issuing information to all tenant and transient aircrews on bird hazards and procedures for bird avoidance.
- Establish passive techniques to decrease airfield attractiveness to birds.
- When necessary, establish active/static techniques to disperse birds from the airfield.
- Establish procedures for reporting damaging/non-damaging bird strikes.
- Establish procedures for collecting bird strike remains.

As noted above, a BHWG has been established and is responsible for organizing, implementing, monitoring, and updating the BASH Plan. The BHWG also reviews actual strike data, and prepares airfield operations for seasonal bird migration trends. It allows base offices affected by BASH risks the opportunity to meet and discuss possible solutions. The BHWG meets regularly with representatives from each organization concerned with bird hazards to share current BASH information and address BASH-related issues as they develop.

The most critical aspect of the BASH program is the aircrew notification and warning system. This system establishes procedures for the exchange of information between ground agencies and aircrews concerning the existence and location of birds that pose a hazard to flight safety. A standardized Bird Hazard Condition (BHC) is to be used at NAWS to warn aircrew and support personnel of the current bird threat to operations. Therefore, the Navy is responsible for implementation and compliance of the BASH program.

R-2508 Joint Land Use Study: The R-2508 Complex includes three military installations: Naval Air Weapons Station (NAWS) China Lake, Edwards Air Force Base (AFB), and Fort Irwin / National Training Center (NTC). The R-2508 Complex provides the largest single area of Special Use Airspace (SUA) over land in the United States, covering a land area of 20,000 square miles. The R-2508 Complex consists of restricted areas

(R-2508, R-2502N, R-2502E, R-2505, R-2506, R-2515, and R-2524), 10 Military Operations Areas (MOA), Air Traffic Control Assigned Airspace (ATCAA) areas, Controlled Firing Areas (CFAs), and other special airspace such as, the CORDS Road, the Precision Impact Range Area, the Black Mountain Supersonic Corridor, the North Hypersonic Corridor, the South Hypersonic Corridor, and the Airfield Approach and Departure Corridors[123].

The result of the R-2508 JLUS was a set of recommended strategies. It is important to note that the final JLUS is not an adopted plan, but rather, a recommended set of compatibility guidelines that can be implemented by local jurisdictions, Native American tribal governments, agencies and organizations. While the strategies in the final JLUS are not mandatory obligations, the involvement of stakeholders (including representatives from the City of Ridgecrest) has provided a set of strategies designed to meet local needs[124].

Of the strategies contained in the final R-2508 JLUS, a number of strategies listed the City of Ridgecrest in a primary (responsible for implementation) or partner (supporting others in the implementation of a strategy) role. These strategies have been incorporated into the City of Ridgecrest General Plan[125].

3.10.2.2 State

The proposed Project Alternatives are being evaluated pursuant to CEQA; however, there are no state land use regulations, plans, programs, or guidelines associated with land use and planning that are applicable.

3.10.2.3 Local

City of Ridgecrest General Plan: Every city and county in California is required by State law to prepare and maintain a planning document called a general plan (Government Code Section 65300). A general plan is designed to serve as the jurisdiction's "constitution" or "blueprint" for future decisions concerning land use, infrastructure, public services, and resource conservation. All specific plans, subdivisions, public works projects, and zoning decisions made by the City must be consistent with the general plan.

The Land Use Element serves as the central element for the general plan and, in essence, brings together most of the concerns addressed in the other elements. It is the principal tool for guiding community growth and development and does so by designating the proposed general distribution, location and intensity of the use of land for both urban and non-urban activities. Although the Land Use Element is most closely related to the physical development of the city, it also addresses social, economic and environmental issues through its policies. The City of Ridgecrest Land Use Element also includes policies and goals concerning public services and facilities. The policies and development direction are for public buildings, grounds and facilities essential to meet community needs, as well as solid waste collection, sanitary sewer, water, schools and medical service. Other public services and facilities including parks, storm drains, public transit, fire service and police service are treated in the Circulation and Transportation, Safety, and Open Space Elements. Since several of the services and facilities covered by this element are not operated by the City, an important part of implementing the element will be strong coordination between the City and individual purveyors.

According to General Plan Page 3-31, Land Use Diagram, the City of Ridgecrest Site is designated as Parks, Industrial and Institutional and the portion of the site within San Bernardino County is not designated but has a special use overlay – Military Influence Area. The County portion of the site is currently vacant. The following summarizes the intent of the City designations and any applicable goals, policies, or objectives:

1. Parks (P): This designation establishes areas for outdoor recreation facilities that serve local and regional users. Uses typically allowed in this designation include pocket, neighborhood, community, regional, natural parks, and other outdoor recreation facilities, such as, golf courses, trails, and open

[123] R-2508 Joint Land Use Study, May 2008, Page 2.
[124] City of Ridgecrest General Plan, December 2009 Page 4-14
[125] City of Ridgecrest General Plan, December 2009 Page 4-14

space/habitat preserves. Recreation facilities should be connected with accessibility to pedestrians and bicyclists. Maximum Intensity: 0.20 FAR. Minimum Lot Size: None.

2. Industrial (I): This designation establishes areas for a range of non-intensive business park, industrial park, and warehouse uses that do not have detrimental noise or odor impacts on surrounding uses. Uses typically allowed include warehousing, welding and fabrication shops, manufacturing, processing, fabrication, trucking terminals, and business support uses such as retail or eating establishments that serve adjacent light industrial uses and employees. Maximum Density: 0.40. Minimum Lot Size: 20,000 sf.
3. Institutional (IS): This designation establishes areas for public and institutional uses that serve the local community. Uses typically allowed include government facilities, schools, libraries, churches, municipal corporation yards, sewer and water facilities, police and fire stations, and hospitals located throughout the community to serve neighborhoods and businesses and promote public safety. Maximum Intensity: 0.6 FAR. Minimum Lot Size: None.
4. Military Influence Area (MIA) Overlay: The MIA overlay defines specific areas requiring additional controls on the types of land use designations and densities / intensities appropriate in areas near NAWS China Lake and its approach and departure zones. These additional considerations are necessary to protect public safety and maintain the operational capabilities of NAWS China Lake. Refer to Policy LU-7.1 and the goals, policies, and implementation measures in Section 4, Military Sustainability Element. Within the MIA, land use density / intensity is to remain low and in keeping with the land use compatibility guidance contained in the current China Lake AICUZ study.

The City of Ridgecrest Site would be subject to the following goals, policies and objectives:

1. **CD-2.3 Buffering Residential Land Uses:** When placing nonresidential uses adjacent to an existing residential use or a land use designation that allows residential uses, the following guidelines shall apply:
    a. Setbacks shall be increased between residential use / designation and proposed building.
    b. A heavy landscape screen shall be established along the common property line, using 15-gallon and 24-inch box trees within a minimum 15-foot wide planting strip.
    c. Tree and vine pockets shall be encouraged against the rear of the structure.
    d. Noise-generating uses, such as loading docks and trash collection facilities, shall be located as far as possible from residential uses and shall be oriented and screened to reduce visual impacts.
    e. The rear of the building should include articulation treatments similar to the front of the building to provide visual interest.
2. **CD-2.7 Drought Tolerant Landscaping:** The City shall require native desert species or other drought tolerant plants, including median treatments and other City maintained spaces, to minimize maintenance, especially irrigation.
3. **CD-2.8 Ground Cover:** Decomposed granite, crushed rock, cinder or other suitable aggregate should be used for ground cover to enhance retention of water in the soil and for beauty. Use of plants for ground cover, including lawns, should be selective in the interest of water conservation.
4. **CD-2.9 Amount of Landscaping:** The amount of landscaping provided must be in proportion to a whole development, be integrated with building design, enhance the appearance and enjoyment of a project and soften the effects of buildings and pavement.

5. **CD-2.10 Irrigation Systems:** An appropriate irrigation system must be provided for plants requiring irrigation. The system must be designed for conservative efficient use of water. Automatic water systems are required.
6. **CD-2.11 Use of Reclaimed Wastewater:** Develop a long range plan for the distribution of reclaimed waste water to be used in place of fresh water where applicable.
7. **CD-2.12 Adequate Lighting:** The City shall require adequate lighting throughout Ridgecrest, to provide for a safe and attractive night environment.
8. **CD-2.13 Lighting Plan:** The City shall require a lighting plan for all commercial, industrial, and subdivision developments. The plan shall include the type and height of all outdoor illumination and provide a point-to-point or isofootcandle diagram showing the illumination of all areas onsite and any light spillage on offsite properties based on a horizontal reading. The type of measurement to be performed shall be stated in the City's zoning ordinance.
9. **CD-2.22 Non-Residential Walls and Fences:** Walls used to separate residential and non-residential land uses shall have appropriate treatments to ensure that the wall is not intrusive on residential units. These walls shall be articulated on both sides.
10. **LU-5.4 Buffer Incompatible Uses:** The City shall require that industrial land uses be buffered from incompatible land uses and protected from encroachment by residential or other incompatible land uses through the use of techniques including, but not limited to, dense landscaping, soundwalls, berms, fencing, open space setbacks, greenbelts, and building orientation.
11. **OSC-6.6 City-wide Water Conservation Practices:** The City shall encourage water conservation on a city-wide basis.
12. **OSC-6.9 Water Efficient Landscaping:** The City shall encourage using water efficient landscaping practices, where possible, for all City landscaping.

City of Ridgecrest Zoning Ordinance: The City of Ridgecrest Zoning Ordinance sets forth the zoning regulations for the incorporated areas of the City Planning Area. This ordinance regulates building height, land uses, setbacks, provisions of open space, density, and other factors related to development on individual properties.

The text of the Zoning Ordinance contains regulations governing development and land uses in the zoning classifications shown on the zoning map. The ordinance text includes detailed descriptions of each zoning classification in terms of the type of land uses allowed in each zone; standards for the development of new land uses within each zone (e.g. building height limits, setback requirements, off-street parking and sign requirements, minimum parcel size, etc.); and procedural requirements for the processing of land use permit applications, and the administration of the ordinance itself.

The purpose of the Zoning Ordinance is to preserve, protect and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare of the city through the requirement of development standards which are designed to meet the goal and objectives of the City's General Plan.
According to the City's Zoning Map, the City of Ridgecrest Site is zoned M-2 (Heavy Industrial) and RSP (Recreation, School, Public Use).

1. **20-19.1 Heavy Industrial Zone (M-2):** This district is intended to provide an area in the City for normal operations of almost all industries that are "heavier" than those permitted in the M-1 District and basically not compatible with residential and commercial uses. It excludes (unless effective mitigation measures are in place) offensive or unhealthful uses that involve creation or emission of dust, gas, smoke, fumes or that created undue traffic congestion, radio activity, glare, fire, explosive hazard or other conditions that can conceivably affect overall health and safety of the residents of the City.

2. **20-4.1 Recreation, Schools and Public Use District (RSP):** This district is intended primarily for application to those areas of the City where it is necessary and desirable to provide permanent open space, governmental and special district facilities, which are necessary to safeguard the health, safety and welfare of the people, and to provide spaces for the location and preservation of public school, cultural, police, fire and other governmental facilities and recreation sites.

Kern County ALUCP: The purpose of the ALUCP is to establish procedures and criteria by which the County of Kern and the affected incorporated cities can address compatibility issues when making planning decisions regarding airports and land uses around them. The ALUCP maps contain various zone boundaries around each public airport in Kern County based on the similar land use compatibility concerns. Six compatibility zones have been established: A, B1, B2, C, D, and E. However, none of the Alternative fall within any of these zones. The ALUC defers any development procedures and criteria relating to the NAWS China Lake to the NAWS China Lake AICUZ Study.

County of San Bernardino General Plan: A general plan is a blueprint that guides the "physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (California Government Code Section 65300).

The Land Use Element functions as a guide to planners, the general public, and decision makers as to the ultimate pattern of development for the County of San Bernardino. The Land Use Element has perhaps the broadest scope of the County of San Bernardino's General Plan elements. In theory, it plays a central role in correlating all land use issues into a set of coherent development policies. Its objectives, policies, and programs relate directly to the other elements. It is the most visible and often-used element in local general planning. Although all general plan elements carry equal weight, the Land Use Element is often perceived as being most visible expression of the General Plan because of its pivotal role in zoning, subdivision, and public works decisions. The Element's goals, policies and programs provide a long-range context for those short-term actions.

According to the General Plan Land Use Map, the area of the City Site east of San Bernardino Boulevard (in the County of San Bernardino's jurisdiction) is designated as Rural Living. The following summarizes the intent of this designation and any applicable goals, policies, or objectives:

1. **Rural Living (RL):** Areas generally adjacent to urbanizing centers, with existing land uses that include limited agriculture, mining and quarrying, energy production operations, public and private recreation areas, rural residences and vacation cabins, and watershed, wildlife, and open space uses; areas with limited, low-density development or mountainous areas with moderate slopes or soils of poorer quality than in agricultural areas; areas where rural residences are the primary use of the land, but where agriculture and other compatible uses, such as hunting clubs, dude ranches, RV parks, etc., may be found or located; areas with soil conditions suitable for limited agriculture capability, which may nevertheless be eligible for Agricultural Preserve status; areas with partial public services and limited public improvements.
2. **GOAL LU 1:** The County will have a compatible and harmonious arrangement of land uses by providing a type and mix of functionally well-integrated land uses that are fiscally viable and meet general social and economic needs of the residents.
    a. LU 1.2 – The design and siting of new development will meet locational and development standards to ensure compatibility of the new development with adjacent land uses and community character.
    b. LU 1.4 – Encourage preservation of the unique aspects of the rural communities and their rural character.

3. **GOAL LU 8:** Beneficial facilities, such as schools, parks, medical facilities, sheriff and fire stations, libraries, and other public uses, as well as potentially hazardous sites, will be equitably distributed throughout the County.
    a. LU 8.1 – Potentially polluting, hazardous, and other health risk facilities should be located no closer than one-quarter mile to a sensitive receptor and vice versa.
4. **GOAL M/CI 4:** Ensure that infrastructure improvements are compatible with the natural environment of the region.
5. **GOAL D/CI 2:** Ensure that infrastructure improvements are compatible with the natural environment of the region.

County of San Bernardino Development Code: The purpose of this Development Code is to implement the San Bernardino General Plan by classifying and regulating the uses of land and structures within unincorporated San Bernardino County; by preserving and protecting the County's important agricultural, cultural, natural, open space and scenic resources; and by protecting and promoting the public health, safety, comfort, convenience, prosperity, and general welfare of residents and businesses in the County. More specifically, the purposes of this Development Code are to:

- Provide standards and guidelines for the continuing orderly growth and development of the County that will assist in protecting the character and identity of San Bernardino County and its distinct communities.
- Conserve and protect the County's important agriculture, cultural, natural, open space and scenic resources.
- Create a comprehensive and stable pattern of land uses upon which to plan transportation, water supply, sewerage, energy, drainage/flood control and other public facilities and utilities.
- Encourage the most appropriate uses of land in order to prevent overcrowding of land and avoid undue concentration of population, and maintain and protect the value of property.
- Ensure compatibility between different types of development and land use.

According to the County's Zoning Map, the San Bernardino County Site is zoned RL (Rural Living). Residential Land Use Zoning Districts. RL (Rural Living). The RL (Rural Living) land use zoning district provides sites for rural residential uses, incidental agricultural uses, and similar and compatible uses. Wastewater treatment facilities are permitted by Conditional Use Permits (CUP) in this zone.

3.10.3 Impact Assessment

3.10.3.1 X-a) Would the project physically divide an established community?

Alternatives 1 and 2: **No Impact.** Construction and operation of either Alternative 1 and Alternative 2 would occur at two separate sites located at opposite ends of the community and connected by a series of existing and/or proposed underground wastewater pipelines. Neither Alternative proposes to construct any above-ground facilities that are either linear in nature (e.g. a freeway, canal, railroad, or similar) or of such bulk or configuration that could result in permanent street closure or restriction of access. Therefore, the development of either Alternative 1 or Alternative 2 would not physically divide an established community. There would be no impact.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.10.3.2 X-b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporation.** The Alternative 1 and 2 Project Sites are subject to various long-range plans and development codes.

The NAWS site is subject to the following:

- Comprehensive Land Use Plan (CLUMP) for NAWS China Lake
- NAWS China Lake Air Installation Compatible Use Zone Study
- NAWS China Lake Integrated Natural Resources Management Plan
- Kern County Airport Land Use Compatibility (ALUC) Plan
- City of Ridgecrest Infrastructure Master Plan

Based on the land use designations, zoning, policies and development standards identified in the Regulatory Setting section for each of the respective documents, no inconsistencies with policies, codes or other regulations were identified. Therefore, this portion of the proposed Project Alternatives is consistent with the above noted documents.

The City Site is subject to the following:

- City of Ridgecrest General Plan
- City of Ridgecrest Zoning Ordinance
- Kern County Airport Land Use Compatibility (ALUC) Plan
- City of Ridgecrest Infrastructure Master Plan
- County of San Bernardino General Plan
- County of San Bernardino Zoning Ordinance

Based on the land use designations, zoning, policies and development standards identified in the Regulatory Setting section for each of the respective documents, the only potential inconsistency identified is that approximately 20 acres of the proposed Project Alternatives may be constructed on land that is designated as Park under City of Ridgecrest General Plan which currently consists of an existing off-road vehicle park. The conceptual site plan as shown in Figures 2-3 and 2-5 for Alternatives 1 and 2 would potentially use these 20-acres designated as Park for effluent disposal ponds. The City shall first make a good faith effort to avoid Park designated areas for the effluent disposal ponds. If avoidance is not feasible, construction of the proposed Project Alternatives' facilities within the Park designation would be inconsistent with the City General Plan unless a General Plan Amendment is adopted to change the designation to Industrial or Institutional, consistent with the proposed wastewater treatment plant. To reduce impacts, the proposed Project Alternatives shall implement mitigation measure LU-1:

3.10.4 Mitigation Measures

LU-1: In order minimize impacts to parks the applicant will implement one or more of the following measure(s) as necessary prior to project construction:

- **Avoidance.** In order to avoid impacts to parks, prior to final design, the city will make a good faith effort to avoid Park designated areas as construction locates for the effluent disposal ponds.
- **Replacement.** If avoidance is not feasible, the City shall process a General Plan Amendment to change the land use designation for the 20-acre off-road park area to Industrial or Institutional, consistent with the proposed effluent disposal ponds planned for the site. Additionally, the City shall designate new lands for parks and replace the existing off-road vehicle park, like for like, within five years of completion of project construction, to offset impacts to existing parks.

With implementation of LU-1, this portion of the proposed Project Alternatives would be consistent with the above noted documents. Therefore, the impact would be reduced to less than significant.

The City of Ridgecrest is subject to a conditional use permit from San Bernardino County regarding the construction of wastewater treatment ponds it their RL zone.

Alternative 2's force main construction will be subject to the following:

- City of Ridgecrest General Plan
- City of Ridgecrest Zoning Ordinance
- Kern County Airport Land Use Compatibility Plan
- City of Ridgecrest Infrastructure Master Plan

Implementation of **AES-1** and **LU-1** would ensure that the proposed Project Alternatives are consistent with the policies and requirements of the NAWS China Lake, City of Ridgecrest documents, reducing impacts to less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.10.4.1 X-c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Alternatives 1 and 2: **No Impact.** Any potential impacts relating to conservation or natural community conservations plans have been previously addressed under impact assessment IV-f.

No Project Alternative: **No Impact.** Any potential impacts relating to conservation or natural community conservations plans have been previously addressed under impact assessment IV-f.

3.10.5 References

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
http://ridgecrest.ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202_30.pdf
Access Date: 5/14/2015

San Bernardino County General Plan
Adopted Date: 3/13/2007
http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf

Access Date: 5/14/2015

Comprehensive Land Use Management Plan for NAWS China Lake
Adopted Date: May 2005
URL: http://www.chinalakeleis.com/documents/china_lake_clump_may_2005.pdf
Access Date: April, 2016

3.11 Mineral Resources

3.11.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on the Naval Air Weapons Station (NAWS) China Lake to serve the Community. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains an additional force main that also warrants discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on the NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with natural vegetation.
2. **City of Ridgecrest Site:** The City site consists of two properties located on either side of San Bernardino Boulevard. The portion to the west lies between Church Avenue and Bowman Road, in the City of Ridgecrest. The site is 180 acres in size and consists of 12 acres of existing wastewater ponds, approximately 33 acres of alfalfa fields where treated effluent from the existing wastewater treatment facility is recycled and used as irrigation water, a 20-acre off-road vehicle park, and areas of natural vegetation. The 12 acres of existing wastewater ponds would remain under all Alternatives, and the off-road vehicle park would be replaced by disposal ponds under Alternatives 1 and 2. The portion to the east of San Bernardino Boulevard consists of 50 acres of natural vegetation, located between California Avenue and Upjohn Avenue in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on the Naval Air Weapons Station (NAWS) China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile pipeline, as illustrated in **Figure 2-1**. The City would be required to make significant on-going improvements to keep the plant operational and up to current building codes and RWQCB waste discharge requirements. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Regional Setting: According to the State of California Department of Conservation's mine database, the nearest active mines to the Alternatives 1, 2 and the No Project Alternative sites are two sand and gravel mines (Mine ID: 91-15-0072 and 91-15-0015) that are located approximately five miles west of the sites[126]. According to the Geologic Atlas of California – Trona Sheet- the soils of the Project Alternative sites

[126] Office of Mine Reclamation. 2016. Current AB 3098 List. http://www.conservation.ca.gov/omr/SMARA%20Mines/ab_3098_list. Site Accessed April 2016.

primarily consist of alluvium which is abundant throughout the state. Finally, according to the following plans, there are no locally important mineral resource recovery sites identified on the Project Alternative sites:

- Comprehensive Land Use Plan (CLUMP) for NAWS China Lake
- NAWS China Lake Integrated Natural Resources Management Plan
- City of Ridgecrest General Plan
- County of San Bernardino General Plan

3.11.2 Regulatory Setting

3.11.2.1 Federal

Based on the determination that there are no active mines or mineral resources within the Project Alternative sites, the proposed Project Alternatives are not subject to federal regulations relating to mineral resources.

3.11.2.2 State

California Surface Mining and Reclamation Act of 1975: Enacted by the State Legislature in 1975, the Surface Mining and Reclamation Act (SMARA), Public Resources Code Section 2710 et seq., insures a continuing supply of mineral resources for the State. The act also creates surface mining and reclamation policy to assure that:

- Production and conservation of minerals is encouraged;
- Environmental effects are prevented or minimized;
- Consideration is given to recreational activities, watersheds, wildlife, range and forage, and aesthetic enjoyment;
- Mined lands are reclaimed to a useable condition once mining is completed; and
- Hazards to public safety both now and in the future are eliminated.

Areas in the State (city or county) that do not have their own regulations for mining and reclamation activities rely on the Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation to enforce this law. SMARA contains provisions for the inventory of mineral lands in the State of California. The State Geologist, in accordance with the State Board's Guidelines for Classification and Designation of Mineral Lands, must classify Mineral Resource Zones (MRZ) as designated below:

1. **MRZ-1:** Areas where available geologic information indicates that there is minimal likelihood of significant resources.
2. **MRZ-2:** Areas underlain by mineral deposits where geologic data indicate that significant mineral deposits are located or likely to be located.
3. **MRZ-3:** Areas where mineral deposits are found but the significance of the deposits cannot be evaluated without further exploration.
4. **MRZ-4:** Areas where there is not enough information to assess the zone. These are areas that have unknown mineral resource significance.

SMARA only covers mining activities that impact or disturb the surface of the land. Deep mining (tunnel) or petroleum and gas production is not covered by SMARA.

Based on the determination that there are no active mines or mineral resources within the Project Alternatives' sites, the proposed Project Alternatives are not subject to state regulations relating to mineral resources.

3.11.2.3 Local

Based on the determination that there are no active mines or mineral resources within the Project Alternatives' sites, the proposed Project Alternatives are not subject to state regulations relating to mineral resources.

3.11.3 Impact Assessment

3.11.3.1 XI-a) Would the Project 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?

Alternatives 1 and 2: **No Impact.** According to the State of California Department of Conservation's mine database, the nearest active mines to the Alternative 1 and 2 sites are two sand and gravel mines (Mine ID: 91-15-0072 and 91-15-0015) that are located approximately five miles west of the sites. According to the Geologic Atlas of California – Trona Sheet- the soils of the sites are primarily consist of alluvium which is abundant throughout the state. Therefore, the proposed Project under both alternatives would not 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. There would be no impact.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.11.3.2 XI-b) Would the Project 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?

Alternatives 1 and 2: **No Impact.** There are no locally important mineral resource recovery sites identified on the Alternative 1 or 2 Project sites. Therefore, no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.11.4 References

Office of Mine Reclamation.
Adopted Date: 2016.
http://www.conservation.ca.gov/omr/SMARA%20Mines/ab_3098_list. Site Accessed April 2016.
Date Accessed: April 2016.

San Bernardino County General Plan
Adopted Date: 3/13/2007
URL: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf
Date Accessed: 5/14/2015

3.12 Noise

3.12.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 mgd capacity wastewater treatment plant located on Naval Air Weapons Station (NAWS) China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS Chine Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The nearest sensitive receptors include Richmond Elementary School, China Lake Sierra Vista Recreational Vehicle Park and the China Lake Golf Course, which are located less than a quarter-mile to the south. According to the NAWS AICUZ baseline noise figure, a small portion of the site, and much of the surrounding area, is located in Air Noise Zone 1 (<65 dB).
2. **City of Ridgecrest Site:** The City site is located in two portions on either side of San Bernardino Boulevard between Church Avenue and Bowman Road, in the City of Ridgecrest. The nearest sensitive receptors to the western property include a cluster of rural residence that are located east of San Bernardino Boulevard and south of Bowman Road. The nearest sensitive receptors to the eastern property include a cluster of residences immediately to the southeast of the San Bernardino Boulevard and Upjohn Avenue intersection. According to the NAWS AICUZ baseline noise figure, neither portion of the site is located within an Air Noise Zone.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 MGD wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCB waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

3.12.2 Federal

Federal Vibration Thresholds: The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to noise and vibration impacts. Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

The effects of groundborne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second PPV and human annoyance response groundborne vibration levels of 73-80 VdB [127].

Figure 3-7 shows human and structural responses to various levels of vibration.

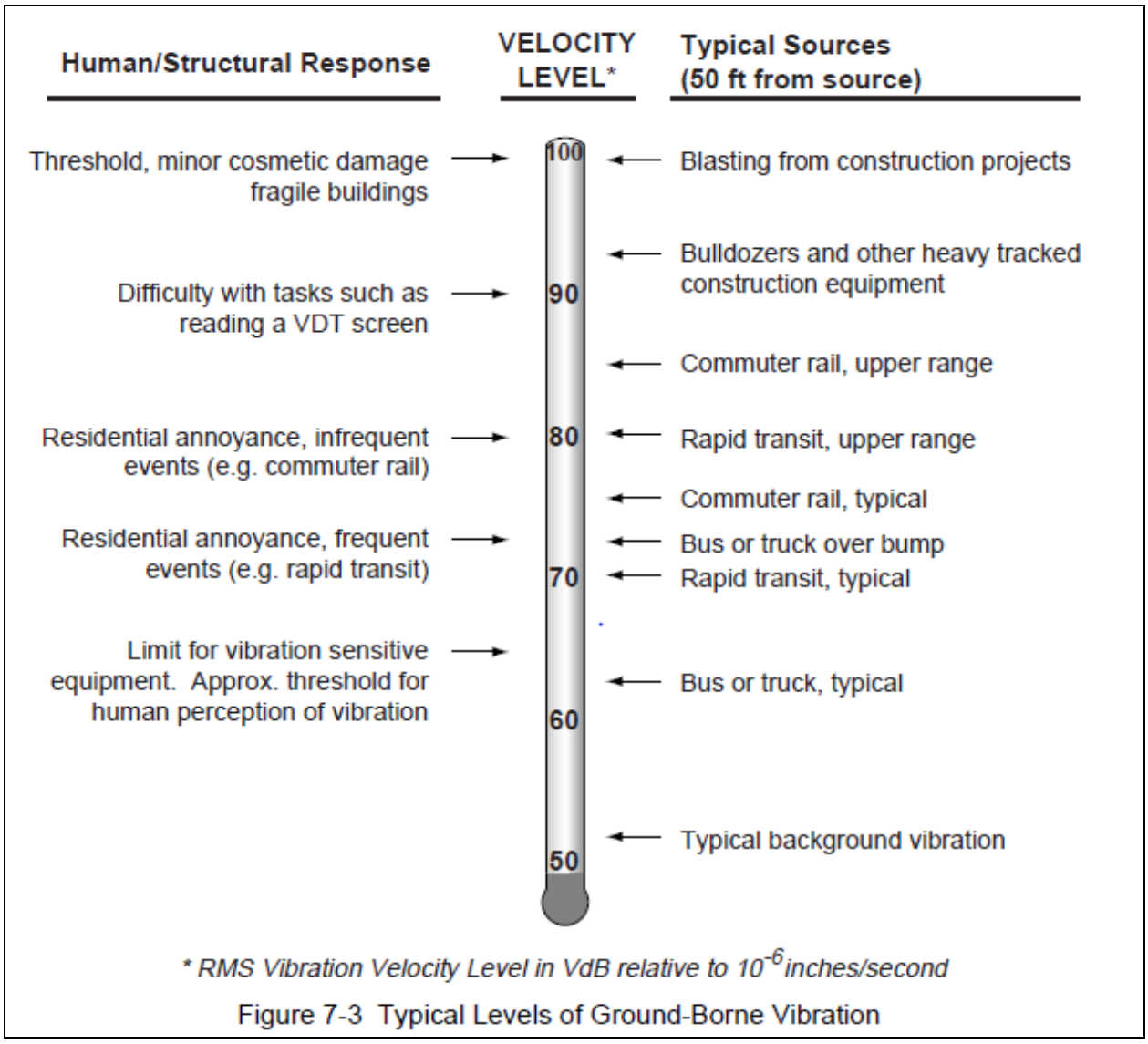
Naval Air Weapons Station China Lake Air Installation Compatible Use Zone (AICUZ) Study: The AICUZ outlines noise and safety issues in relation to both the baseline (current) and prospective operational conditions of the base as laid out in the 2004 Environmental Impact Statement (EIS) for Proposed Military Operational Increases and Implementation of Associated Comprehensive Land Use and Integrated Natural Resources Management Plans. The proposed action in the EIS acts as a basis for the program laid out in the 2007 AICUZ. The installation's cooperation with local government agencies is outlined in the introduction to the AICUZ, which states the responsibility of the Navy to inform and cooperate with the planning departments of Kern and San Bernardino Counties along with the City of Ridgecrest. As noted above, this study is an interim report, and after further evaluation, including the impact of the Joint Strike Fighter, an updated AICUZ may be released.

As part of the AICUZ study, the Navy proposed an expansion of the traditional AICUZ planning area, called a Military Influence Area (MIA), to address the higher safety risks in these areas. As with other AICUZ items, these recommendations are for consideration by local jurisdictions, and are not regulations. According to the OPR, an MIA should be incorporated into the local planning process through a community's general plan and zoning ordinance. NAWS recommends the designation of an MIA that is larger than the traditional AICUZ footprint in order to address flight noise and safety issues beneath flight corridors and to encourage retention of a buffer zone of compatible land use in case of future expansion of the NAWS mission. The designation of an MIA is also consistent with Navy AICUZ Program guidelines as described in OPNAVINST 11010.36B.

The MIA includes, in addition to the AICUZ footprint, all land within the 60 dB CNEL contour (Noise Zone 1) and a larger portion of the primary flight corridors used by arriving and departing aircraft. Noise Zone 1 is included in the MIA as a proxy for potential expansion of the noise contours should NAWS experience future increases in operational tempo (no such increases beyond the "prospective" operations evaluated in this AICUZ study are currently planned). The geographical location and extent of any such shift in future noise contours would of course depend on the specific nature of the increased operations (e.g.

[127] Federal Transit Administration, Noise & Vibration Impact Assessment. May 2006. www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_manual.pdf. Site Accessed April 2016.

runway distribution, aircraft type, type of operation, etc.), but if other variables remained constant and only the number and frequency of operations were to increase, the 65 dB noise contour would tend to expand toward the current 60 dB contour.



FTA Noise and Vibration Manual, 2006

Figure 3-7. Human and Structural Responses to Vibration

Figure 3-8 represents the baseline noise conditions resulting from NAWS operations in the Ridgecrest area

The AICUZ Study includes numerous policies and procedures addressing potential noise impacts from operations at the NAWS on land uses throughout the Ridgecrest area. However, it does not include any policies or procedures addressing potential noise impacts generated from non-military related operations.

R-2508 Joint Land Use Study: The R-2508 Joint Land Use Study (JLUS) was a collaborative planning process between local governments, participating military installations, tribal governments, land owners, interested individuals, and representatives from agencies serving the area in and around the R-2508 Complex to address compatibility planning. The goal of the R-2508 JLUS is to protect the viability of current and future missions using the R-2508 Complex while at the same time accommodating growth, sustaining the economic health of the region, and protecting public health and safety.

The JLUS includes numerous policies and procedures addressing potential noise impacts from operations at the NAWS on land uses throughout the Ridgecrest area. However, it does not include any policies or procedures addressing potential noise impacts generated from non-military related operations.

Noise Control Act of 1972: The Noise Control Act of 1972 directed the United States Environmental Protection Agency (USEPA) to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The act directed that all federal agencies comply with applicable federal, state, interstate, and local noise control regulations. It also required that USEPA establish criterion for noise level adequate to protect health and welfare with an adequate margin of safety but without regard to cost or feasibility. In addition, USEPA was given the responsibility for coordinating federal research and activities related to noise control and for establishing federal noise emission standards for selected products distributed in interstate commerce. The Noise Control Act was subsequently amended by the Quiet Communities Act of 1978, which encouraged the development of noise control programs at the state and community level[128].

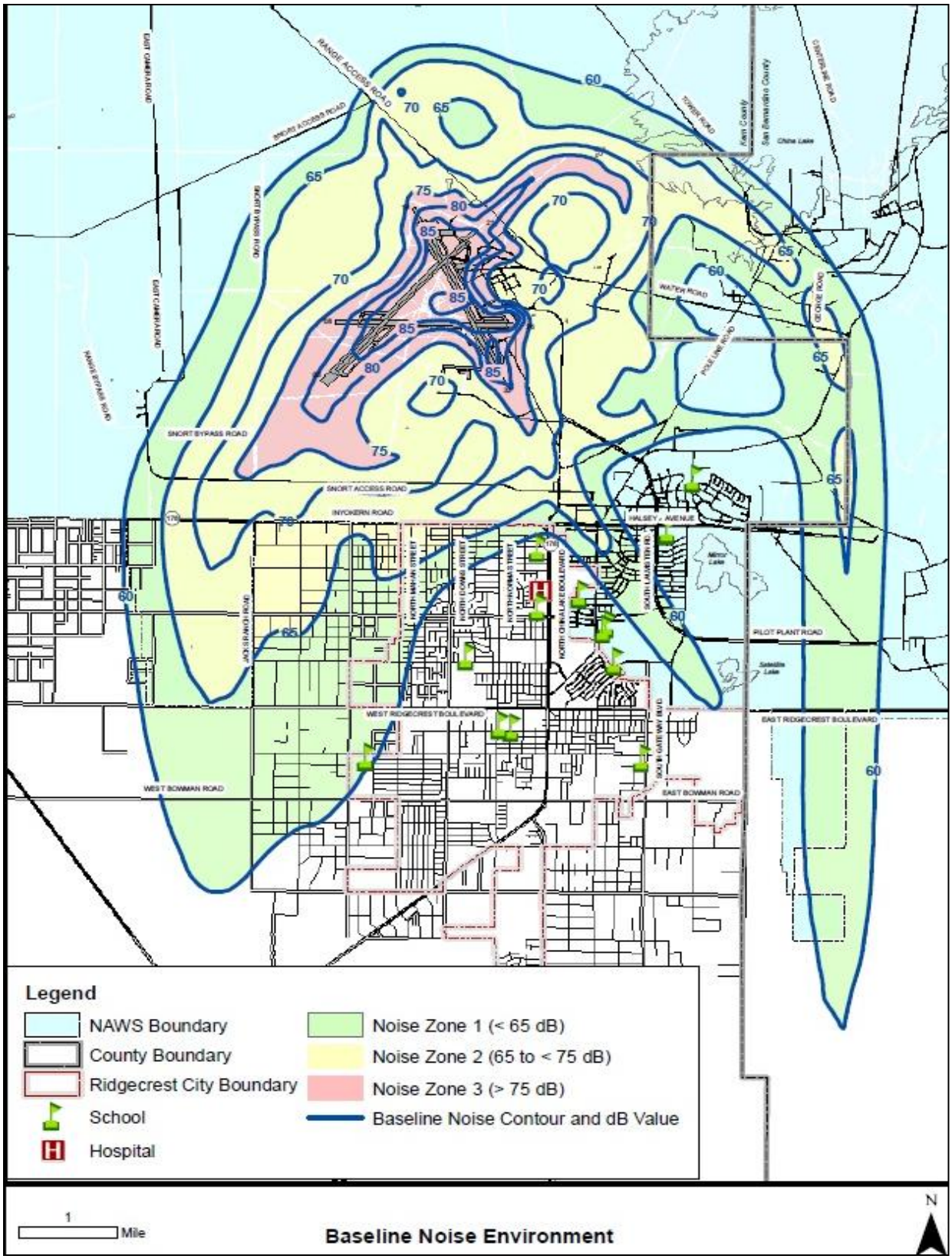
3.12.3 State

California Noise Control Act (Health and Safety Code § 46010 et seq.): States the Office of Noise Control (ONC) should provide assistance to local communities in developing local noise control programs. It also indicates that ONC staff would work with the OPR to provide guidance for the preparation of the required noise elements in city and county General Plans, pursuant to Government Code § 65302(f). California Government Code § 65302(f) requires city and county general plans to include a noise element. The purpose of a noise element is to guide future development to enhance future land use compatibility.

California Title 21 Division of Aeronautics, Noise Standards: States the following (in accordance with Article 3, Chapter 4, Part 1, Division 9, Public Utilities Code, Regulation of Airports) to provide noise standards governing the operation of aircraft and aircraft engines for all airports operating under a valid permit issued by the Department of Transportation:

"The level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a CNEL value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep and community reaction. As in the Federal criteria, no compatibility criteria have been established for A-weighted single event noise metrics such as SENEL or Lmax."

[128] United States Environmental Protection Agency. www.epa.gov/laws-regulations/summary-noise-control-act. Site Accessed April 2016.



China Lake Naval Air Weapons Station Air Installation Compatible Use Zone Study, Figure 5-2, Page 5-7

Figure 3-8. Baseline Noise Environment

Assembly Bill 2776: The Aviation Noise Disclosure legislation (AB 2776) was passed in the 2002– 2003 regular legislative session and was signed by the Governor. It amends the real estate transfer disclosure statute (California Civil Code, Division 2 – Property, Part 4 – Acquisition of Property, Title 4, Chapter 2 – Transfer of Real Property) to require sellers or leasers to disclose the fact that a house for sale or lease is near an airport if the house falls within an airport influence area (that could be several miles from an existing or proposed airport). An airport influence area is defined as the area in which current or future airport related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. The intent of the legislation is to notify buyers that they could experience airport noise, vibration, odor, annoyances, or other inconveniences at some time in the future as a result of the normal operation of an existing or proposed airport.

3.12.4 Local

City of Ridgecrest General Plan: The City of Ridgecrest General Plan identifies the following noise thresholds, as established by the State of California Governor's Office of Planning and Research General Plan Guidelines (2003):

Table 3-20. Noise Thresholds

Noise Level (CNEL)							
	0-55	56-60	61-65	66-70	71-75	75-80	>81
Residential – Low Density Sing Family, Duplex, Mobile Homes							
Residential – Multiple Family, Group Homes							
Motels/Hotels							
Schools, Libraries, Churches, Hospitals, Extended Care Facilities							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial Manufacturing, Utilities, Agriculture							

	Normally Acceptable. Specified land use is satisfactory, based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.
	Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Outdoor areas must be shielded.
	Unacceptable. New construction or development should not be undertaken.

City of Ridgecrest General Plan, Table 8-1. Maximum Allowable Noise Exposure by Land Use. Page 8-20.

The City of Ridgecrest General Plan establishes the following policies, objectives and guidelines that are applicable to the proposed Project Alternatives:

1. **LU-2.8 Incompatible Uses:** The City shall protect existing residential neighborhoods from the encroachment of incompatible activities and land uses (i.e. traffic, noise) and environmental hazards (i.e. flood, soil instability).
2. **CD-2.3 Buffering Residential Land Uses:** When placing nonresidential uses adjacent to an existing residential use or a land use designation that allows residential uses, the following guidelines shall apply:
    a. Setbacks shall be increased between residential use / designation and proposed building.
    b. A heavy landscape screen shall be established along the common property line, using 15-gallon and 24- inch box trees within a minimum 15-foot wide planting strip.
    c. Tree and vine pockets shall be encouraged against the rear of the structure.
    d. Noise-generating uses, such as loading docks and trash collection facilities, shall be located as far as possible from residential uses and shall be oriented and screened to reduce visual impacts.
    e. The rear of the building should include articulation treatments similar to the front of the building to provide visual interest.
3. **C-9.1 Truck Routes:** The City shall establish and enforce truck routes in existing and new development areas to efficiently serve truck traffic, minimize conflicts between truck and automobile circulation, and minimize the impact of truck traffic on residential neighborhoods and other noise-sensitive uses. As part of this effort, the City shall work to relocate the existing truck route from Ridgecrest Boulevard to Bowman Road.
4. **HS-8.2 City Noise Standards:** The City shall stress compliance with established City noise standards as a primary consideration in the siting, design and construction of new development in the city.
5. **HS-8.9 Conduct Noise Monitoring:** The City shall establish an ongoing noise monitoring program to enforce City noise standards.
6. **HS-8.11 Construction Noise:** The City shall seek to limit the potential noise impacts of construction activities on surrounding land uses.
7. **HS-8.13 Sound Attenuation Features:** The City shall require sound attenuation features such as walls, berming, heavy landscaping between commercial, industrial, and residential uses to reduce noise and vibration impacts.
8. **HS-8.20 Noise Easements:** The City shall grant exceptions to the noise standards for commercial and industrial uses only if a recorded noise easement is conveyed by the affected property owners.
9. **HS-8.16 State Noise Insulation Standards:** The City shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code.

San Bernardino County General Plan: The San Bernardino County General Plan establishes the following noise-related policies, objectives and guidelines that are applicable to the proposed Project Alternatives:

1. **LU 1.2:** The design and siting of new development will meet locational and development standards to ensure compatibility of the new development with adjacent land uses and community character.
    a. Programs
        - Discourage linear commercial development of shallow depth along streets or highways when it can be shown that such development impairs traffic flow or detracts from the aesthetic enjoyment of the surroundings, or if it can be

demonstrated that equally effective services can be provided in an alternative configuration.

- Establish special performance standards for industrial uses to control industrial odors, air pollution, noise pollution, vibrations, dust, hours of operation, exterior storage, and other nuisances.

2. **N 1.6:** Enforce the hourly noise-level performance standards for stationary and other locally regulated sources, such as industrial, recreational, and construction activities as well as mechanical and electrical equipment:
    a. Programs
        i. Develop and implement a noise ordinance that will:
            1. Be consistent with this element of the General Plan.
            2. Include the development standards provided in this element in the Development Code.
3. **N 1.7:** Prevent incompatible land uses, by reason of excessive noise levels, from occurring in the future.
    a. Programs
        i. Examine the existing and projected future noise environment when considering amendments to the circulation system.
        ii. Periodically review and update the Noise Element to ensure that noise exposure information and specific policies are consistent with changing conditions within the County and with noise control regulations enacted after the adoption of this element.
        iii. Provide sufficient noise exposure information so that existing and potential noise impacts will be identified and addressed in the project review processes.
        iv. Compile and publish a list of standardized noise mitigation measures.
4. **N 2.1:** The County will require appropriate and feasible on-site noise attenuating measures that may include noise walls, enclosure of noise generating equipment, site planning to locate noise sources away from sensitive receptors, and other comparable features.

Kern County ALUCP: The purpose of the ALUCP is to establish procedures and criteria by which the County of Kern and the affected incorporated cities can address compatibility issues when making planning decisions regarding airports and land uses around them. The ALUCP maps contain various zone boundaries around each public airport in Kern County based on the similar land use compatibility concerns. Six compatibility zones have been established: A, B1, B2, C, D, and E. However, none of the Alternative fall within any of these zones. The ALUC defers any development procedures and criteria relating to NAWS China Lake to the NAWS China Lake AICUZ Study.

3.12.5 Noise Concepts

The City of Ridgecrest General Plan EIR summarizes the concepts behind noise and vibration impacts, as noted below:

3.12.5.1 Noise Background

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA).1 Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

3.12.5.2 Noise Exposure and Community Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. Rather, community noise varies continuously with time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g. aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment varies the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

1. **Leq:** The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The Leq is the constant sound level, which would contain the same acoustic energy as the varying sound level, during the same time period (i.e. the average noise exposure level for the given time period).
2. **Lmax:** The instantaneous maximum noise level measured during the measurement period of interest.
3. **Lmin:** The instantaneous minimum noise level measured during the measurement period of interest.

4. **L(x):** The sound level that is equaled or exceeded x percent of a specified time period. The L50 represents the median sound level.
5. **DNL:** Also termed the Ldn, the DNL is the energy average of the A-weighted sound levels occurring during a 24-hour period, and which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.
6. **CNEL:** Similar to the DNL, the Community Noise Equivalent Level (CNEL) adds a 5-dBA "penalty" for the evening hours between 7 p.m. and 10 p.m. in addition to a 10-dBA penalty between the hours of 10 p.m. and 7 a.m.

   The Ldn and CNEL are primarily used for transportation noise analysis. These descriptors are well correlated with public annoyance due to transportation noise sources and are used in this analysis. Traffic noise is also described using the Ldn and hourly noise descriptors. Ldn and CNEL are also used for noise/land use compatibility assessments.

3.12.5.3 Effects of Noise on People

The effects of noise on people can be placed into three categories:

1. **Interference with activities such as speech, sleep, and learning:** The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors, the thresholds are about 15 dBA higher. Interior residential standards for multi-family dwellings are set by the State of California at 45 DNL. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses.
2. **Subjective effects of annoyance, nuisance, and dissatisfaction:** Based on attitude surveys used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas, the main causes for annoyance are interference with speech, radio and television, house vibrations, and interference with sleep and rest. The DNL as a measure has been found to provide a valid correlation of noise level and the percentage of people annoyed. Three aspects of community noise are most important in determining subjective response – the level of sound, the frequency composition or spectrum of the sound, and the variation of sound level with time.
3. **Physiological effects such as hearing loss or sudden startling:** While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise, but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

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

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

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

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

3.12.5.4 Noise Attenuation

For any given noise source, the noise level naturally decreases as one moves further away from the source. This basic attenuation rate is referred to as the geometric spreading loss, and varies whether a given noise source can be characterized as a point or line source. For a point source, such as an idling truck or a piece of construction equipment, the noise level decreases by about 6.0 dB for each doubling of distance.

In many cases, point source noise attenuation can increase by 1.5 dB (from 6.0 dB to 7.5 dB) for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as excess ground attenuation. The lower excess ground attenuation rate (6.0 dB per doubling of distance) is used where the intervening ground between source and receiver is reflective, such as parking lots or smooth bodies of water. The higher excess ground attenuation rate (7.5 dB per doubling of distance) is used where the intervening ground is absorptive, such as soft dirt, grass, or scattered bushes and trees[129].

For a linear noise source, such as a heavily traveled roadway, the sound level decreases by a nominal value of 3.0 dB for each doubling of distance between noise source and receiver. As with point sources, if the intervening ground between source and receiver is absorptive rather than reflective, the nominal rate changes by 1.5 dB for each doubling of distance to 4.5 dB. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources. Unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict[130].

3.12.6 Vibration Concepts

3.12.6.1 Vibration Background

Vibration consists of oscillatory waves that radiate along the surface of the earth and downward into the earth, potentially resulting in effects that range from human annoyance to structural damage. Some common sources of groundborne vibration are mining operations, including quarrying and blasting, railways and highways, industrial facilities, heavy-duty vehicles on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment. As vibrations travel outward from the source, they excite the particles of rock and soil through which they pass and cause them to oscillate by a few ten-thousandths to a few thousandths of an inch. Differences in subsurface geologic conditions and distance from the source of vibration will result in different vibration levels characterized by different frequencies and intensities. In all cases, vibration amplitudes will decrease with increasing distance. There are several different

[129] California Department of Transportation, August 2006. Traffic Noise Analysis Protocol. www.dot.ca.gov/hq/env/noise/pub/2006_protocol.pdf. Site Accessed April 2016.
[130] Ibid.

methods that are used to quantify vibration. The peak particle velocity (PPV), typically measured in inches per second, is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

Human response to vibration is difficult to quantify. Vibration can be felt or heard well below the levels that produce any damage to structures. The duration of the event has an effect on human response, as does frequency. Generally, as the duration and vibration frequency increase, the potential for adverse human response increases. While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings may be perceived as motion of building surfaces or rattling of windows, items on shelves, and pictures hanging on walls. In extreme cases, the vibration can cause damage to buildings. Vibration of building components can also take the form of an audible low-frequency rumbling noise, which is referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, connect the structure and the source.

Groundborne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction. In addition, the rumble noise that usually accompanies the building vibration is perceptible only inside buildings. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly and sick), and vibration sensitive equipment.

3.12.7 Impact Assessment

3.12.7.1 XII-a) Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Alternatives 1 and 2: **Significant and Unavoidable With Mitigation Incorporation.** Temporary increases in ambient noise levels would occur during construction. Project construction under both Alternative 1 and 2 would require excavation, cut and fill, rough and finish grading, trench work, forming and pouring concrete forms and foundations, pipe and metal cutting, installation and assembly of equipment, pipes, pumps, valves and mechanical equipment. Construction would also require the use of generators, air compressors and pneumatic powered tools. Construction noise would vary greatly depending on the construction activity performed, type of specific equipment, condition of equipment used, layout of the construction site and distance from sensitive receptors.

Table 3-21 shows typical exterior noise levels at various phases of commercial construction, and **Table 3-22** shows typical noise levels associated with various types of construction related machinery.

Table 3-21. Typical Construction Phase Noise Levels (City of Ridgecrest General Plan EIR, Table 3.5.1, Page 3.5-11)

Typical Construction Phase Noise Levels	
Construction Phase	**Noise Level (dBA, Leq)[1]**
Ground Clearing	84
Excavation	89
Foundations	78
Building Erection	85
Finishing	89
[1]Average noise levels 50 feet from the noisest source and 200 feet from the rest of the equipment associated with a given construction phase. Noise levels correspond to commercial projects in a typical urban ambient noise environment. Source: Bolt, Beranek and Newman, U.S. EPA, 1971. Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971	

Table 3-22. Typical Noise Levels from Construction Equipment (City of Ridgecrest General Plan EIR, Table 3.5-2, Page 3.5-11)

Typical Noise Levels from Construction Equipment	
Construction Phase	**Noise Level (dBA, Leq at 50 feet)**
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76
Pile Driver	101
Rock Drill	98
Pump	76
Pneumatic Tools	85
Backhoe	85
Source: Cunniff, 1977; Bold et al. 1971.	

NAWS China Lake Site: The nearest noise-sensitive receptors to the proposed construction area on the NAWS site include Lake Sierra Vista Recreational Park, Richmond Elementary School, and the China Lake Golf Course, all of which are located approximately 0.28 miles from the site. According to the NAWS AICUZ baseline noise figure, a small portion of the site on the NAWS, and much of the surrounding area, is located in Air Noise Zone 1 (<65 dB).

Table 3-23 shows estimated noise levels at the nearest point of the noise-sensitive receptors for each phase of construction, assuming noise levels are as described in the preceding two tables and that construction noise is reduced by 6 dB for each doubling of distance:

Table 3-23. Estimated Construction Noise Levels at Sensitive Receptors

Estimated Construction Noise Levels at Sensitive Receptors	
Construction Phase	Noise Level at Nearest Sensitive Receptor (dBA Leq)[1]
Ground Clearing	54
Excavation	59
Foundation	48
Finishing	59
[1]Leq refers to equivalent continuous sound level.	

According to the State of California Governor's Office of Planning and Research 2003 General Plan Guidelines, noise exposure in the 50 to 60 dB range is considered to be "normally acceptable" for schools golf courses and other recreation type areas. Therefore, short-term impacts to these receptors from construction noise would be less than significant.

City of Ridgecrest Site: The nearest sensitive receptors to the proposed construction areas include approximately 15 rural residences that are located south side of Upjohn Avenue and east of San Bernardino Boulevard, the closest of which is located less than 100 feet away from the proposed basins on the northeast corner of Upjohn Avenue and San Bernardino Boulevard. The following shows estimated noise levels at the nearest point of the noise-sensitive receptors for each phase of construction, assuming noise levels are as described in **Table 3-23** and **Table 3-24** and assuming construction noise is reduced by 6 dB for each doubling of distance:

Table 3-24: Estimated Construction Noise Levels at Sensitive Receptors

Estimated Construction Noise Levels at Sensitive Receptors	
Construction Phase	Noise Level at Nearest Sensitive Receptor (dBA Leq)[1]
Ground Clearing	78 – 72
Excavation	83 – 77
Foundation	72 – 66
Finishing	83 – 77
[1]Leq refers to equivalent continuous sound level.	

According to the State of California Governor's Office of Planning and Research 2003 General Plan Guidelines, noise exposure in the 70 to 85 dB range is considered to be "normally unacceptable" and "clearly unacceptable" for residential - low density single family and mobile home areas. Considering that the nearest sensitive receptors are single family residences and the eastern basin site is designated for Rural Living uses, this level of noise from short-term construction would result in a potentially significant impact. In an effort to reduce potential impacts, the proposed Project under both alternatives shall implement mitigation measures N-1 and N-2:

3.12.8 Mitigation Measures

N-1: Construction activities shall begin no earlier than 7:00 am and conclude no later than 6:00 pm, Monday through Friday. Construction activities outside of these hours and days may only occur in the event of an emergency.

N-2: All construction equipment shall be regularly maintained and equipped with the following noise reduction devices:

i. The appropriate manufacturer's noise reduction device (s) including muffler (or the equivalent) that is free of rust, holes, and exhaust leaks.

ii. Engine housing shall be kept closed and noise-insulating material shall be mounted on the engine housing to reduce noise, to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust.

iii. Portable compressors, generators, pumps, and other such devices shall be covered with noise-insulating fabric to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust, and shall further reduce noise by operating such devices at lower engine speeds during work to the maximum extent possible.

iv. Construction equipment not actively being utilized shall be turned off.

v. Vehicle idling on-site shall be limited to 5 minutes.

vi. Reduced-volume backup alarms shall be used for all construction vehicles

vii. Reduced-volume backup alarms shall be used for all construction vehicles, as allowed by OSHA.

Based on the projected noise levels, it is anticipated that temporary construction-related impacts for both Alternative 1 and 2 would remain significant after mitigation.

Potential Impacts from Construction-Related Material Haul Trips and Vehicle Trips:

1. **NAWS China Lake Site:** Construction-related material haul trips and vehicle travel to and from the site would raise the ambient noise levels along the constriction routes. Considering the average type and volume of traffic near the NAWS site that are associated with nearby military and recreational activities, construction-related material haul trips are considered to be generally consistent and would result in less than significant impacts.
2. **City of Ridgecrest Site:** Depending on the source of construction materials, it can be reasonably assumed that material haul trips and vehicle travel to and from the City Site would result in an increase in heavier vehicle traffic along Bowman Road and/or San Bernardino Boulevard. These types of vehicle trips are not considered to be generally consistent with the average type and volume of traffic near the sites, as the area is dominated by rural residences. However, heavy vehicle traffic is permitted on these roadways, as the City of Ridgecrest General Plan designates San Bernardino Boulevard as an arterial roadway and Policy C-9.1 promotes heavy vehicle traffic on Bowman Road. Noise from potential construction-related material haul trips and vehicle travel would only result in short-term increases in ambient noise levels from traveling vehicles. Therefore, any impacts under either Alternative 1 or 2 would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.12.8.1 XII-b) Would the Project result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporation.** Temporary increases in vibration levels would occur during construction of either Project Alternative. Construction at the sites would require excavation, cut and fill, rough and finish grading, trench work, forming and pouring concrete forms and foundations, pipe and metal cutting, installation and assembly of equipment, pipes, pumps, valves and mechanical equipment. Construction would also require the use of generators, air compressors and pneumatic powered tools. Construction vibration would vary greatly depending on the construction activity performed, type of specific equipment, condition of equipment used, layout of the construction site and distance from sensitive receptors.

Potential Impacts from Construction Equipment: The proposed Project Alternatives would generate steady vibration during construction activities occurring between the hours of 7:00 am to 6:00 pm., Monday through Friday. **Table 3-25** shows vibration source levels at various distances from construction equipment.

Table 3-25. Vibration Source Levels for Construction Equipment

Vibration Source Levels for Construction Equipment					
Equipment	**25 Feet**	**50 Feet**	**60 Feet**	**75 Feet**	**100 Feet**
Large Bulldozer	87	81	79	77	75
Loaded Trucks	86	80	78	76	74
Jackhammer	79	73	71	69	67
Small Bulldozer	58	52	50	48	46
Source: Federal Railroad Administration, 1998 and Christopher A. Joseph & Associates, February 2009					

1. **NAWS China Lake Site**: The nearest sensitive receptors to the proposed construction area at the NAWS site include Lake Sierra Vista Recreational Park, Richmond Elementary School, and the China Lake Golf Course, all of which are located approximately 0.28 miles away from the site. Vibrations from the proposed Project Alternatives at this distance would be not be felt and are considered to be negligible.
2. **City of Ridgecrest Site:** The nearest sensitive receptors to the proposed construction area in the City of Ridgecrest and San Bernardino County include approximately 15 rural residences that are located south of Upjohn Avenue and east of San Bernardino Boulevard, the closest of which is located less than 100 feet away from the proposed basins on the northeast corner of Upjohn Avenue and San Bernardino Boulevard. Construction activities can produce vibration that may be felt by uses in the vicinity. It is anticipated that the vibration levels caused by a large bulldozer operating on the southern edge of the eastern portion of the site would generate approximately 75 Vdb and would likely fall within the 73-80 VdB range for human annoyance for the nearest residence, resulting in a potentially significant impact. Potential impacts from other types of construction equipment on this residence are anticipated to be less than significant. Anticipated vibration levels at other residences in the area would likely be less than significant based on their distance from construction activities.

The City of Ridgecrest General Plan EIR page 3.5-18 identifies potential groundborne vibration and noise levels as a result of construction activities as having a potentially significant impact on local residents. Additionally, the EIR notes, "…the City will ensure that future CEQA documentation be prepared for individual projects (with project-specific data) that will (if technically possible) mitigate any potential vibration impacts to a less-than-significant level. However, it should be noted, the ability to mitigate this potential impact is contingent upon a variety of factors including the severity of the vibration impact, existing land use conditions and the technical feasibility of being able to implement any proposed mitigation measures. Given the uncertainty as to whether future vibration impacts could be adequately mitigated for all the individual

projects that will be implemented as part of the proposed Project Alternatives, this impact remains significant. No additional policies or feasible mitigation is currently available." Based on the location of the eastern portion of the City Site in relation to the nearest residence and the types equipment needed to construct the wastewater treatment ponds, the potential groundborne vibration impacts resulting from a large bulldozer can only be reduced by restricting the distance at which the bulldozer can operate from the residence. At a distance of 125 feet, it is anticipated that the vibration levels caused by a large bulldozer operating on the southern edge of the City Site would generate approximately 67 Vdb and would reduce impacts to less than significant levels. At this time, the exact layout of the proposed wastewater treatment ponds has not been determined. Therefore, implementation of mitigation measure N-3 would reduce potential impacts of either alternative to less than significant levels:

- **N-3:** Construction activities related to the proposed Project Alternatives' wastewater treatment ponds on the City Site shall ensure that the operation of large bulldozers does not occur within a 125 foot buffer of the nearest residence.

Potential Impacts from Construction-related Material Haul Trips and Vehicle Trips: Construction-related material haul trips and vehicle travel to and from the sites would increase groundborne vibration levels throughout the area.

1. **NAWS China Lake Site:** The nearest sensitive receptors to the proposed construction area at the NAWS site include Lake Sierra Vista Recreational Park, Richmond Elementary School, and the China Lake Golf Course, all of which are located approximately 0.28 miles away from the site. Vibrations from the proposed Project Alternatives at this distance would be not be felt and are considered to be negligible.
2. **City of Ridgecrest Site:** Depending on the source of construction materials, it can be reasonably assumed that material haul trips and vehicle travel to and from the City Site would result in an increase in heavier vehicle traffic along Bowman Road and/or San Bernardino Boulevard. These types of vehicle trips are not considered to be generally consistent with the average type and volume of traffic near the sites, as the area is dominated by rural residences. However, heavy vehicle traffic is permitted on these roadways and the City of Ridgecrest General Plan policy C-9.1 promotes heavy vehicle traffic on Bowman Road. Vibration from potential construction-related material haul trips and vehicle travel would only result in short-term increases vibration levels. Potentially significant impacts may occur if hauling trucks were to idle for long periods of time within a close proximity to existing residences. However, mitigation measure N-2 would restrict vehicle idling to 5 minutes, thereby reducing impacts to less than significant levels.

Therefore, impacts of both Alternative 1 and 2 would be less than significant after mitigation.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.12.8.2 XII-c) Would the Project result in substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Alternatives 1 and 2: **Less Than Significant.** When compared to the environmental baseline, the new facility would consist of modernized equipment and potential ambient noise impacts would likely reduce noise levels currently being generated by the outdated, existing wastewater treatment facility. The operation of the proposed wastewater treatment ponds would require small pumps in order to move effluent to the sites. These small pumps would result in minor noise emissions. Therefore, impacts would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.12.8.3 XII-d) Would the Project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Alternatives 1 and 2: **Less Than Significant.** During the construction phase of the proposed Project Alternatives ambient noise levels would slightly increase between the hours of 7:00 am to 6:00 pm, Monday through Friday, as a result of construction activities. However, this noise is consistent with other types of construction, commercial, industrial, military, and vehicle noise throughout the area. Additionally, construction noise would be temporary. Therefore, impacts are considered to be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.12.8.4 XII-e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Alternatives 1 and 2: **No Impact.** The proposed Project under both alternatives does not involve the placement of housing within two miles of an airport. Additionally, workers at the existing wastewater treatment plant would continue to be exposed to noise from nearby military operations that have already been factored into the environmental baseline. Therefore, no impact would occur for either Alternative 1 or 2.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.12.8.5 XII-f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Alternatives 1 and 2: **No Impact.** The southern-most wastewater treatment ponds proposed at the City of Ridgecrest Site are located within one mile of the Tera Skypark. The proposed Project Alternatives do not involve the construction of housing. Therefore, the Alternatives would not expose residents to excessive noise levels. Additionally, the Tera Skypark supports only small aircrafts that do not emit excessive noise over long distances. Therefore, workers at the Alternative 1 or 2 Project sites would not be exposed to excessive noise levels and no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.12.9 References

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
http://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202030.pdf
Access Date: 5/14/2015

San Bernardino County General Plan
Adopted Date: 3/13/2007
http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf
Access Date: 5/14/2015

China Lake Naval Air Weapons Station Air Installation Compatible Use Zone Study

Adopted Date: 5/30/2007
http://www.navair.navy.mil/nawcwd/nawcwd/downloads/environmental_news/aicuz_naws_china_lake/FINAL_China_Lake__AICUZ_MAY_07-3.pdf
Access Date: 6/15/2015

Federal Transit Administration Noise and Vibration Manual
Adopted Date: May 2006
www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf - 1554k - 2011-09-08
Access Date: 6/16/2015

3.13 Population and Housing

3.13.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on the NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Regional Setting: According to the California Department of Finance, the population of the City of Ridgecrest was approximately 28,419 in January 2015, with an average household size of 2.53 persons per household[131]. The City of Ridgecrest General Plan notes that population in the community is strongly linked to changes in employment at Naval Air Weapons Station NAWS China Lake (NAWS). Between 2000 and 2014, the city experienced a population increase of 4.0 percent[132]. Additionally, as the closest urban area to NAWS China Lake, Ridgecrest enjoys a symbiotic relationship with the installation. The Navy is the largest employer in the

[131] California Department of Finance, 2015. E-1 Cities, Counties, and the State Population Estimates with Annual Percent Change – January 1, 2014 and 2015. http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/documents/E-12015InternetVersion.xls. Site Accessed March, 2016.
[132] United States Census Bureau. QuickFacts: Ridgecrest City, California. http://www.census.gov/quickfacts/table/PST045215/0660704. Site accessed March 2016.

Indian Wells Valley, providing a significant economic thrust for the Valley and adding to the economic base of the City of Ridgecrest. China Lake provides direct employment for 861 military personnel and full-time employment for 3,141 civilians[133]. Additionally, the installation provides employment for 1,385 on-board contractors and 923 off-site contractors[134]. In return, the City of Ridgecrest provides housing, support services, and a range of community services to these employees.

The existing WWTP has a permitted capacity of 3.6 million gallons per day (mgd). In 1993, with an estimated population of 29,385[135], the City of Ridgecrest's wastewater flows reached 3.3 mgd, before population began to decline in the mid 1990s. With an estimated population of 28,419, current flows through the existing WWTP average approximately 2.2 mgd. The dramatic decrease in the proportional flows between the 1993 and 2015 populations are a result of more-modern water and wastewater efficiency efforts.

3.13.2 Regulatory Setting

3.13.2.1 Federal

There are no federal regulations relating to population or housing that are applicable to the proposed Project Alternatives.

3.13.2.2 State

There are no state regulations relating to population or housing that are applicable to the proposed Project Alternatives.

3.13.2.3 Local

There are no state regulations relating to population or housing that are applicable to the proposed Project Alternatives.

3.13.3 Impact Assessment

3.13.3.1 XIII-a) Would the Project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Alternatives 1 and 2: **Less than Significant Impact.** Implementation of either Alternative 1 or Alternative 2 would provide additional peak capacity within the City's wastewater treatment and disposal system, thus indirectly leading to population growth in the area. Although the headworks component of the Project Alternatives would be sized to accommodate more expansive future wastewater system, the actual capacity of the Project will be limited by the other components of the system until such time as the future expansion is considered. However, the purpose of the proposed Project is to replace the existing, failing WWTP. This will allow the system to accommodate anticipated growth within both the City and at NAWS China Lake per the City of Ridgecrest General Plan and the NAWS China Lake Comprehensive Land Use Management Plan (CLUMP). The City of Ridgecrest 2030 General Plan Update EIR assumed full buildout of the General Plan planning area by 2030, with a resulting population of 50,000 (Footnote information: City of Ridgecrest

[133] Department of Defense. Naval Air Weapons Station China Lake, California: Fast Facts. http://www.militaryinstallations.dod.mil/pls/psgprod/f?p=132:CONTENT:0::NO::P4_INST_ID,P4_INST_TYPE:625,INSTALLATION. Site accessed March 2016.
[134] Department of Defense. Naval Air Weapons Station China Lake, California: Fast Facts. http://www.militaryinstallations.dod.mil/pls/psgprod/f?p=132:CONTENT:0::NO::P4_INST_ID,P4_INST_TYPE:625,INSTALLATION. Site accessed March 2016.
[135] City of Ridgecrest, 2002. Housing Element. https://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/housing_element.pdf. Site accessed March 2016.

General Plan Update Draft Environmental Impact Report Page 2-5, 2009). While the CLUMP does not specifically address population growth within the base, it does acknowledge that off-base planning efforts and land use policies will result in development, thereby resulting in a population increase. Therefore, while population growth and related development may occur as an indirect result of Project implementation, the growth and development has previously been contemplated, and is in fact part of the impetus for the Project. Impacts would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. The existing plant would continue to operate at its current capacity. Therefore, the environmental baseline would be maintained and no impact would occur.

3.13.3.2 XIII-b) Would the Project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Alternatives 1 and 2: **No Impact.** As described in Chapter 2, both Alternatives would occupy the same physical locations, none of which currently contains housing or is planned for housing development. The NAWS Site and City Site mainly include vacant land, the exception being the 20-acre off-road vehicle area on the City Site, which is not housing-related. Upgrades to the existing 20-inch-diameter force main and installation of the new 16-inch-diameter force main parallel to it would occur within existing and proposed easements across vacant or unimproved areas of private/public lands and under City street rights-of-way. There would be no impact.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.13.3.3 XIII-c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

Alternatives 1 and 2: **No Impact.** See response to XIII-b above. None of the lands to be improved are occupied by or intended for occupation by persons. There would be no impact.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.13.4 References

California Department of Finance, 2015.
URL: http://www.dof.ca.gov/research/demographic/reports/estimates/e-1/documents/E-12015InternetVersion.xls.
Access Date: March 2016.

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
URL: http://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202030.pdf
Access Date: 5/14/2015

City of Ridgecrest Housing Element
Adopted Date: 2002.
URL:https://ridgecrest.ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/housing_element.pdf.
Access Date: March 2016.

Department of Defense.
Naval Air Weapons Station China Lake, California: Fast Facts.
URL:http://www.militaryinstallations.dod.mil/pls/psgprod/f?p=132:CONTENT:0::NO::P4_INST_ID,P4_INST_TYPE:625,INSTALLATION
Access Date: March 2016.

United States Census Bureau
QuickFacts: Ridgecrest City, California.
URL: http://www.census.gov/quickfacts/table/PST045215/0660704.
Access Date: March 2016.

3.14 Public Services

3.14.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Fire Protection: According to the City of Ridgecrest General Plan, the City does not provide its own fire services. Fire protection services for the City of Ridgecrest are provided by Kern County through an agreement developed by the two jurisdictions. Kern County Fire Stations 74 and 77 are located within the City limits. In addition to the Kern County Fire Stations, the City has a mutual aid agreement with NAWS China Lake, which operates its own fire station for the installation, in the event an emergency exceeds the capacity of local resources. The China Lake Federal Fire Department is located at 800 Inyokern Road on NAWS China Lake and is closest to the NAWS China Lake Site. Station 74 is located at 139 East Las Flores, is the closest fire department to the City of Ridgecrest, and is closest to the City of Ridgecrest Site.

Police Protection: According to the City of Ridgecrest General Plan, the City provides its own police services. In addition to the City Police Department, NAWS China Lake is served by the United States Navy Police Department. The China Lake Navy Police Department is located at 800 Inyokern Road on NAWS China Lake and is closest to the NAWS China Lake Site. The City of Ridgecrest Police Department is located at 100 West California Avenue and is closest to the City of Ridgecrest Site.

Schools: According to the City of Ridgecrest General Plan, the Sierra Sands School District serves the Ridgecrest area with elementary schools (kindergarten through sixth grade), middle schools (seventh through eighth grade) and high school (ninth through twelfth). The proposed Alternatives are located within the districts of Gateway Elementary, Richmond Elementary, Murray Middle School, Burroughs Middle School, and Mesquite Continuation High School.

Parks: The City of Ridgecrest is responsible for providing parks for the general public of Ridgecrest. The City's Parks and Recreation Department is responsible for maintain these facilities. The existing off-road vehicle park which is located on the City of Ridgecrest Site is the closest park to the City of Ridgecrest Site.

Other Public Facilities: Other public facilities found in the City of Ridgecrest include water, wastewater, drainage, transportation, etc.

3.14.1.1 Federal

There are no federal policies or regulations relating to the fire, police, schools, parks or other public facilities that are applicable to the proposed Project Alternatives.

3.14.1.2 State

There are no state policies or regulations relating to the fire, police, schools, parks or other public facilities that are applicable to the proposed Project Alternatives.

3.14.1.3 Local

City of Ridgecrest General Plan: The City of Ridgecrest General Plan establishes the following policies, objectives and guidelines that are applicable to the proposed Project Alternatives:

1. **HS-3.9 Minimum Public Protection Standards:** The City shall strive to maintain the following minimum standards for public protection within the City.
    a. Ensure that the level of sworn police officers per 1,000 population is not less than 1.5
    b. Target an average response time of five (5) minutes to calls for assistance
2. **HS-3.6 Minimum Fire Protection Standards:** The City shall strive to maintain the following minimum standards for fire protection within the City.
    a. Achieve a maximum city-wide fire alarm response time of three (3) minutes
    b. Meet fire flow standards established in the zoning ordinance, developed with the assistance of the Kern County Fire Prevention
    c. District, for all existing and new development within the City
    d. Achieve and, if possible, reduce the Insurance Services Office (ISO) rating in cooperation with the Kern County Fire Prevention District
3. **LU-10.1 Adequate Municipal Services:** The City shall only approve new development when it can be demonstrated by the applicant that adequate public service capacity in the area is or will be

available to handle increases related to the project. School capacity will be discussed in the review of each development, and the City will ensure early coordination with the school districts serving the site. School capacity will be addressed as allowed under State law.

3.14.2 Impact Assessment

3.14.2.1 XIV-a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Alternatives 1 and 2:

1. **Fire Protection:** **No Impact.** The existing 3.6 mgd WWTP is the same capacity as the proposed 3.6 mgd WWTP . Therefore, the potential growth associated with the proposed Project would not increase beyond the environmental baseline. The proposed Project Alternatives would not result in the development of any new residential, commercial or industrial units that would substantially increase the potential for incidents requiring fire services. In the event that an incident occurs at any of the proposed Project Alterative sites, the existing fire services at both the Kern County Fire Station 74 and the China Lake Federal Fire Department would be adequate. Therefore, no impact would occur.
2. **Police Protection:** **No Impact.** The existing 3.6 mgd WWTP is the same capacity as the proposed 3.6 mgd WWTP. Therefore, the potential growth associated with the proposed Project would not increase beyond the environmental baseline. The proposed Project Alternatives would not result in the development of any new residential, commercial or industrial units that would substantially increase the potential for incidents requiring police services. In the event that an incident occurs at any of the proposed Project Alternative sites, the existing police services at both the City of Ridgecrest Police Department and the United States Navy Police Department would be adequate. Therefore, no impact would occur.
3. **School:** **No Impact.** The existing 3.6 mgd WWTP is the same capacity as the proposed 3.6 mgd WWTP. Therefore, the potential growth associated with the proposed Project Alternatives would not increase beyond the environmental baseline. The proposed Project Alternatives would not result in the development of any new residential units that would substantially increase population and lead to impacts on existing schools within the Sierra Sands Unified School District. Therefore, no impact would occur.
4. **Parks:** **Potentially Significant – Potentially Significant - Less than Significant With Mitigation Incorporated.** As previously discussed under Impact Assessment X- a, under either Alternative 1 or 2 the proposed effluent disposal ponds have been planned for the area currently occupied by the 20-acre off-road vehicle park on the City site. Construction of the proposed facilities would impact the existing off-road vehicle park on the City site, therefore mitigation measure LU-1 will be implemented to either avoid construction on the park lands or replace the facility, like for like, within five years, and process a General Plan Amendment to change the land use designation of the parcel.
5. **Other Public Facilities:** Potential impacts to "other" facilities including water, wastewater, drainage, transportation, etc. are addressed in their respective sections of this Initial Study.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.14.3 References

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
URL: http://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202030.pdf
Access Date: 5/14/2015

3.15 Recreation

3.15.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 mgd capacity wastewater treatment plant located on NAWS China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on the NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.
2. **City of Ridgecrest Site:** The City site is located on either side of San Bernardino Boulevard; the western potion lies between Church Avenue and Bowman Road, and the eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County.
3. **Alternative 2 Force Main Site:** The 21,000-foot pipeline with a 16-inch diameter is planned for construction parallel to the existing force main. It is located near the eastern edge of the City boundaries and would be surrounded mainly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on NAWS China Lake, the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCD waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Regional Setting: According to the City of Ridgecrest 2030 General Plan, the City offers a variety of recreational opportunities through its Parks, Recreation, and Cultural Affairs Department. Within the City's Planning Area, the City currently operates seven parks totaling 103.5 acres of parkland. Based on a 2007 population in the City of 27,944, the City maintains/manages 3.7 acres of parkland per 1,000 residents.

Parks: Parks in the City of Ridgecrest range from as small as 0.5 acre to parks as large as 56 acres. Parkland in the City includes parks owned and operated by the City as well as a park owned by Kern County and operated by the City (Leroy Jackson Park Sports Complex).

Sport Complexes & Special Purpose Facilities: The City of Ridgecrest has a variety of sports complexes to serve youth and adult recreational sports programs and leagues. These sports complexes include about 68 acres of

baseball fields, football fields, tennis courts, and soccer fields. In addition, the City also operates two special purpose facilities including a skate park and community pool.

Community and Senior Centers: Ridgecrest has a multifunctional community center (the Kerr McGee Community Center) and a senior center (Ridgecrest Senior Center) that provide services to the residents of Ridgecrest as well as the unincorporated parts of the Indian Wells Valley.

National, State and County Parks: Several national, State, County and BLM wildernesses are located in close proximity to the Planning Area, which complement the City's recreational resources. Opportunities are extensive and include: Inyo National Forest, El Paso Mountains Wilderness, Golden Valley Wilderness, Kiavah Wilderness, Owens Peak Wilderness, Sequoia-Kings Canyon National Park and Death Valley National Park. In addition, BLM has extensive land holdings in the area, many of which are available to the public to support a range of outdoor activities.

In addition to the City, the Comprehensive Land Use Plan for NAWS China Lake identifies a variety of recreational activities have been accommodated on NAWS lands over the past 50 years. While most of these activities will continue to be supported by the Nave, others may be temporarily or permanently discontinued. The following is an active list of recreational opportunities on the NAWS: golfing, gymnasiums, camping, bird watching, hiking, equestrian, off-road vehicles, and cultural and natural resource tours.

3.15.2 Regulatory Setting

3.15.2.1 Federal

NAWS China Lake Integrated Natural Resources Management Plan (INRMP): The purpose of this Integrated Natural Resources Management Plan (INRMP) is to provide a viable framework for the management of natural resources at the Naval Air Weapons Station, China Lake.

According to Section 4.4, Outdoor Recreation, implementation of recreational programs requires careful assessment of potential effects with respect to air, noise, and water pollution; health and safety; security; and interference with military activities. Certain outdoor recreation opportunities at NAWS are, at their present level of activity, compatible with each other and NAWS missions. Section 1.6.4.7 identifies the Kerncrest Chapter of the Audubon Society and the Kern-Kaweah Chapter of the Sierra Club as interested parties for natural resources. Specifically, the Audubon Society has been active with bird surveys at NAWS/CL for many years. The Chapter conducts the annual Christmas bird count as well as other bird counts. The Chapter has 10 years of detailed data on bird use of the sewer ponds (800 surveys), a valuable long-term monitoring effort. Members are available to assist NAWS/CL with other wildlife surveys. Since the existing wastewater treatment facility ponds have are recognized for their recreational value, it is assumed that any new ponds associated with the proposed Project Alternatives would present similar opportunities. Therefore, the proposed Alternatives shall comply with the following objective and guidelines:

1. **Objective:** Continue to evaluate opportunities for recreation on NAWS.
2. **Guidelines:**
    a. Periodically review appropriateness of instituting new recreation activities.
    b. Eliminate off-road vehicle use on NAWS land and land sailing and other recreational activities on dry lake playas.
    c. Maintain recreational opportunities on NAWS which do not impact operations, such as petroglyph tours, bird watching on the wastewater treatment ponds, and other recreation not conducted on the ranges.

3.15.2.2 State

Based on the determination that there are no state parks located within the proposed Project Alternatives' sites, the Alternatives are not subject to state regulations relating to parks.

3.15.2.3 Local

The City does not currently have a parks master plan to guide future development, and the General Plan update will need to provide a policy framework to help guide future park development and recreation programs.

City of Ridgecrest General Plan: The City currently operates seven parks totaling 103.5 acres of parkland. Based on a 2007 population in the City of 27,944, the City maintains/manages 3.7 acres of parkland per 1,000 residents.

The following General Plan Policies regarding recreation are applicable to the proposed Project Alternatives:

1. **OSC-7.5 Recreational Facilities on NAWS China Lake:** The City shall work with NAWS China Lake to determine the feasibility of joint operation and maintenance of recreational facilities on the installation to minimize duplication of programs and facilities available to the community.
2. **OSC-7.18 Increase Recreational Facilities:** The City shall increase the number of recreational facilities for sports such as golf courses, skate parks, baseball, softball, football, soccer, track and field, and gymnasiums, including the feasibility of replacing the Kerr-McGee Center gym and the development of a major sports complex in the vicinity of Hellmers Park, Freedom Park, and Pinney Pool. If feasible, these facilities should be centralized in one location to provide easy access to all residents. Potential sites for such facilities include the City-owned property in the business park area.

3.15.3 Impact Assessment

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

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporated.**
The proposed Project Alternatives would not result in the development of any new residential units that would substantially increase population and leading to the increase use of existing parks or other recreational facilities such that substantial physical deterioration of recreational facilities would occur or be accelerated. Under either alternative, the existing wastewater treatment ponds at the NAWS and City sites would remain in their existing conditions and would continue to serve as recreational opportunities for bird watching. The proposed new wastewater treatment ponds at both portions of the City Site would only increase recreational opportunities for bird watching. However, there is an existing 20-acre off-road vehicle park on the City site that may be potentially impacted by the proposed new wastewater treatment ponds. As previously discussed under Impact Assessment X-a, the conceptual site plan under either Alternative 1 or 2 shows effluent disposal ponds planned for the 20-acre park location. If the proposed facilities are to impact the existing off-road vehicle park on the City site then the City shall designate new lands for parks and replace the existing off-road vehicle park, like-for-like, within 5 years, to offset impacts to existing parks. With implementation of mitigation measure **LU-1** (identified under Impact Assessment X- a), the impacts of either alternative would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

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

Alternatives 1 and 2: **Less Than Significant With Mitigation Incorporation.** As previously discussed under Impact Assessment X-a, the conceptual site plan as shown in Figures 2-3 and 2-5 for Alternatives 1 and 2 could potentially use these 20-acres designated as Park for effluent disposal ponds. Mitigation measure LU-1, discussed in Impact X-a, specifies that the City shall either avoid building on the off-road vehicle site or, if the City fails to avoid building wastewater treatment ponds in the off-road vehicle park, a new park will be constructed in its stead. Therefore, mitigation measure LU-1 shall reduce impacts to less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.15.4 References

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
URL: http://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202030.pdf
Access Date: 5/14/2015

3.16 Transportation/Traffic

3.16.1 Environmental Setting

Alternatives 1 and 2 Settings: Both alternatives involve the replacement of an existing, outdated, 3.6 mgd capacity wastewater treatment plant located on Naval Air Weapons Station (NAWS) Chine Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on the NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation. Transportation routes to this site may include: Inyokern Road and Knox Road.
2. **City of Ridgecrest site:** The City site consists of two properties located on either side of San Bernardino Boulevard. The property to the west lies between Church Avenue and Bowman Road, in the City of Ridgecrest. Transportation routes to this site may include: Ridgecrest Boulevard, China Lake Boulevard, San Bernardino Boulevard, Richmond Road, and Bowman Road. The property to the east is located between California and Upjohn Avenue, in San Bernardino County. Transportation routes to this site may include: Ridgecrest Boulevard, San Bernardino Boulevard, and Bowman Road.
3. **Alternative 2 Force Main Site:** The 16-inch diameter pipeline will be constructed running north-south parallel to the existing force main. It is located near the eastern edge of the City boundaries and will not obstruct use of existing roads.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on the NAWS site, the wastewater disposal ponds at the NAWS and City sites, and the existing four-mile effluent

force main. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCB waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

General Setting: According to the City of Ridgecrest 2030 General Plan, the City is serviced by two major highways -Highways 14 and 395 as well as the Highway 178 Scenic Corridor. Regional transit service is provided by the Inyo-Mono County bus service, which connects Ridgecrest with California City and Mojave.

1. Major corridors that impact Ridgecrest include state highways and roadways that serve inter-county and intra-county travel include:
    a. Major North-South Travel Corridors. There are eight north-south travel corridors within the Ridgecrest area: Jacks Ranch Road, Brady Street, Mahan Street, Downs Street, Norma Street, College Heights Boulevard, China Lake Boulevard and Gateway Boulevard.
    b. Major East-West Travel Corridors. There are seven major east-west travel corridors within the Ridgecrest area: Inyokern Road (Highway 178), Drummond Avenue, Ridgecrest Boulevard, Bowman Road, Ward Avenue, Las Flores, and Springer Avenue.
    c. Highway 178. The present routing of Highway 178 through the City of Ridgecrest and Inyokern is problematic. The route is on streets heavily used for local traffic. The route makes two, right angle turns in the City of Ridgecrest. Several stoplights must be negotiated along the route. The route is the main east-west thoroughfare in the area. These facets result in congestion on this corridor.
    d. Highway 395. Highway 395 begins in Hesperia, California at the junction with Interstate 15 and continues north to the Canadian border, traversing high desert land, hilly areas east of the Sierra Nevada Mountains. Plants indigenous to the area along the route have good scenic qualities when wildflowers are in bloom. Highway 395 lies outside Ridgecrest, but is important because it intersects with China Lake Boulevard and provides the primary route into and out of the City.
    e. State Route 14 (SR 14). SR 14 is a north-south state highway traversing the Mojave Desert to the west of Ridgecrest. Connecting Highway 395 in Inyokern to Interstate 5 in Santa Clarita, SR 14 provides access from the southern coastal cities in California to interior high desert areas, including Reno, Nevada.

Ridgecrest is served by approximately 25 miles of designated bike paths, lanes and routes. However, there are gaps in the bike path network that must be completed to facilitate interconnected bicycle travel. Currently, there are nearly 50 miles of additional bike paths planned throughout the Ridgecrest area. The bicycle system provides facilities to serve all types of bicycle trips including work, school, recreation, physical training and sport.

Future bicycle facilities include routes along Bowman Road, S. China Lake Blvd, Jacks Ranch Road, Brady Street and Javis Avenue. Additional bicycle facilities may be available in redevelopment areas and private developments requiring public access improvements with special consideration to service recreational areas. In addition, many bikeways may take advantage of scenic views and other visual resources.

Pedestrian travel exists in Ridgecrest primarily on main arterials and between areas with short distances. Providing sidewalks and paths becomes more relevant as the population increases. Ridgecrest provides pedestrian facilities within and between residential neighborhoods along with commercial and industrial areas. Pedestrian facilities are especially important in those parts of Ridgecrest where motorized transportation is the predominant mode of travel and where safety becomes an issue, including portions of China Lake Boulevard, Bowman Road and Ridgecrest Boulevard.

There are several airports in the region surrounding Ridgecrest. The closest airport with commercial service is Inyokern Airport, located about 10 miles west of the City. Other airports in the region include Trona Airport (20 miles), California City Municipal Airport (41 miles), Mojave Air and Space Port (60 miles), Ontario International Airport (124 miles), and Burbank Airport (143 miles).

3.16.2 Regulatory Setting

3.16.2.1 Federal

Transportation Equity Act for the 21st Century (TEA-21): On June 9, 1998, the Clinton Administration signed into law PL 105-178 authorizing highway, highway safety, transit, and other surface transportation programs for the next six years. TEA-21 builds on the initiatives established in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, which was the previous major authorizing legislation for surface transportation. Reauthorization of this bill with a focus on funding safety improvements is anticipated in fall of 2004.

Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003 (SAFETEA): The Bush Administration's SAFETEA bill offers proposals to make our highways safer. Enactment of this bill would be an important step in reducing highway fatalities and injuries, and providing greater flexibility to State and local governments to use these funds consistent with a comprehensive strategic highway safety plan. The President's proposal would provide funding for highway and safety programs and for public transportation programs from fiscal year 2004 through fiscal year 2009.

Federal Clean Air Act: The Federal Clean Air Act, coupled with TEA 21, and foreseeable legislation, requires that the RTP integrate transportation and air quality during the planning process. The 1990 California Clean Air Act (CCAA) Amendment requires the following stipulations in order to receive federal funding:

1. Establish a permitting program that achieves no net increase in stationary source emissions;
2. Develop a strategy to reduce vehicle trips, use and miles traveled;
3. Increase average vehicle ridership to 1.5 persons per vehicle during commute hours;
4. Establish Best Available Retrofit Control Technology (BARCT) requirements for all permitted sources; and
5. Development of indirect and area source programs.

- Failure to meet Federal and State requirements of the CAAA may result in the following disciplinary actions:

1. Limitations on the use of federal funds for highway construction;
2. Cut off of federal grants for construction of sewage treatment plants; and
3. Prohibition of development of new stationary sources of air pollution.

China Lake Air Installation Compatible Use Zone Study: The AICUZ Study highlights this opportunity and offers recommended strategies and planning tools that can be applied by local agencies to promote compatible land use development before encroachment becomes a serious problem at Armitage Airfield. The study examines various airfield planning parameters related to aircraft operations, noise, and safety, and provides an analysis of land use compatibility in both on- and off-Station properties.

The AICUZ Program also identifies Accident Potential Zones (APZs) as a planning tool for installation planners and local government agencies. APZs are areas where an aircraft-related mishap is most likely to occur. APZs encompass a portion of departure, arrival, and other flight routes flown by aircraft at NAWS. The proposed Alternatives are not located within APZs.

3.16.2.2 State

The proposed Project Alternatives do not front a state highway, nor would it generate significant amounts of vehicle traffic that could potentially impact state facilities. Therefore, no state regulations are applicable to the proposed Project Alternatives.

3.16.2.3 Local

City of Ridgecrest General Plan: The Circulation Element of the City of Ridgecrest General Plan identifies the goals, policies, and implementation measures needed to ensure an adequate and functional transportation and circulation system. This element addresses automobile travel (roads and highways), public transit, aviation, and trails for bicyclists and pedestrians.

Roadway Classification and Standards: Roadways serve two functions: traffic movement, or mobility, and accessibility to provide mobility and to provide property access. High and constant speeds are desirable for mobility, while low speeds are more desirable for property access, particularly in residential areas. A functional classification system provides for specialization in meeting the access and mobility requirements of the development permitted under the General Plan. Local streets emphasize property access; arterials emphasize high mobility for through-traffic; and collectors attempt to achieve a balance between both functions. The following roadway classifications are used in the City of Ridgecrest.

1. **State Highways:** State highways provide for high volume interregional travel, and include sections with limited local access via widely spaced interchanges and local access as highways pass through communities. Within the City of Ridgecrest, state highways conform to the standards of the California Department of Transportation.
2. **Arterials:** Arterials are intended to: (a) provide a high level of capacity in selected high volume corridors; (b) provide connections between the freeway system and arterials and collector streets via interchanges; and (c) provide access to major traffic generators. Arterials are moderate-speed through streets and provide for traffic at moderate speeds. Access to an arterial should be primarily accomplished through primary collector and secondary collector streets. Arterials also provide access to major traffic generators at quarter mile intervals. Arterials are generally designed with two through lanes in each direction with either on-street parking or no parking with left turn lanes. Arterials are subject to the same access standards as major arterials.

   Major arterials are typically designed to accommodate up to six through traffic lanes, a parking/transit/right turn lane, and a center median with dual left turn lanes at intersections. The right-of-way for these streets should be not less than 110 feet. A driveway spacing of at least 300 feet should be maintained wherever possible. Arterials are designated throughout Ridgecrest, generally creating a one-mile grid pattern.
3. **Secondary Streets:** Secondary streets are intended to transfer traffic from collector and minor streets to an arterial. Average daily traffic on a primary collector will usually average less than arterial streets, but more than collector streets. Secondary streets should provide direct linkages to neighborhood shopping areas.

   Secondary street intersections should be staggered to discourage their use as through access ways by-passing arterials. Direct access for low density residential, commercial, and industrial uses and

developments should be permitted consistent with adopted improvement standards. The right-of-way for these streets should be not less than 90 feet wide.

4. **Collector Streets:** Collector streets are intended to carry traffic from local streets to secondary streets and arterials. Direct access should be permitted consistent with approved standards. Secondary collector streets are not delineated on the Circulation Diagram; instead they are located through the development and subdivision approval process. Collector streets are designated throughout Ridgecrest and generally have a two-lane configuration with a right-of-way of not less than 64 feet.
5. **Local Streets:** Local streets are intended as low capacity streets primarily serving low density residential uses. Direct access to local streets is permitted consistent with adopted improvement standards. Local streets provide direct access to adjacent land. They also connect from adjacent land uses to collector streets and, in some limited instances, connect directly to arterials. Local streets should not carry traffic from one area of the community to another. Local streets should have a two-lane configuration with a right-of-way of not less than 60 feet, although narrower rights-of-way may be permitted in certain circumstances. The minimum right-of-way for local streets in areas designated for commercial and industrial is 60 feet.

Figure 3-9 and **Figure 3-10** depict the proposed circulation system for the City of Ridgecrest around the Alternative sites.

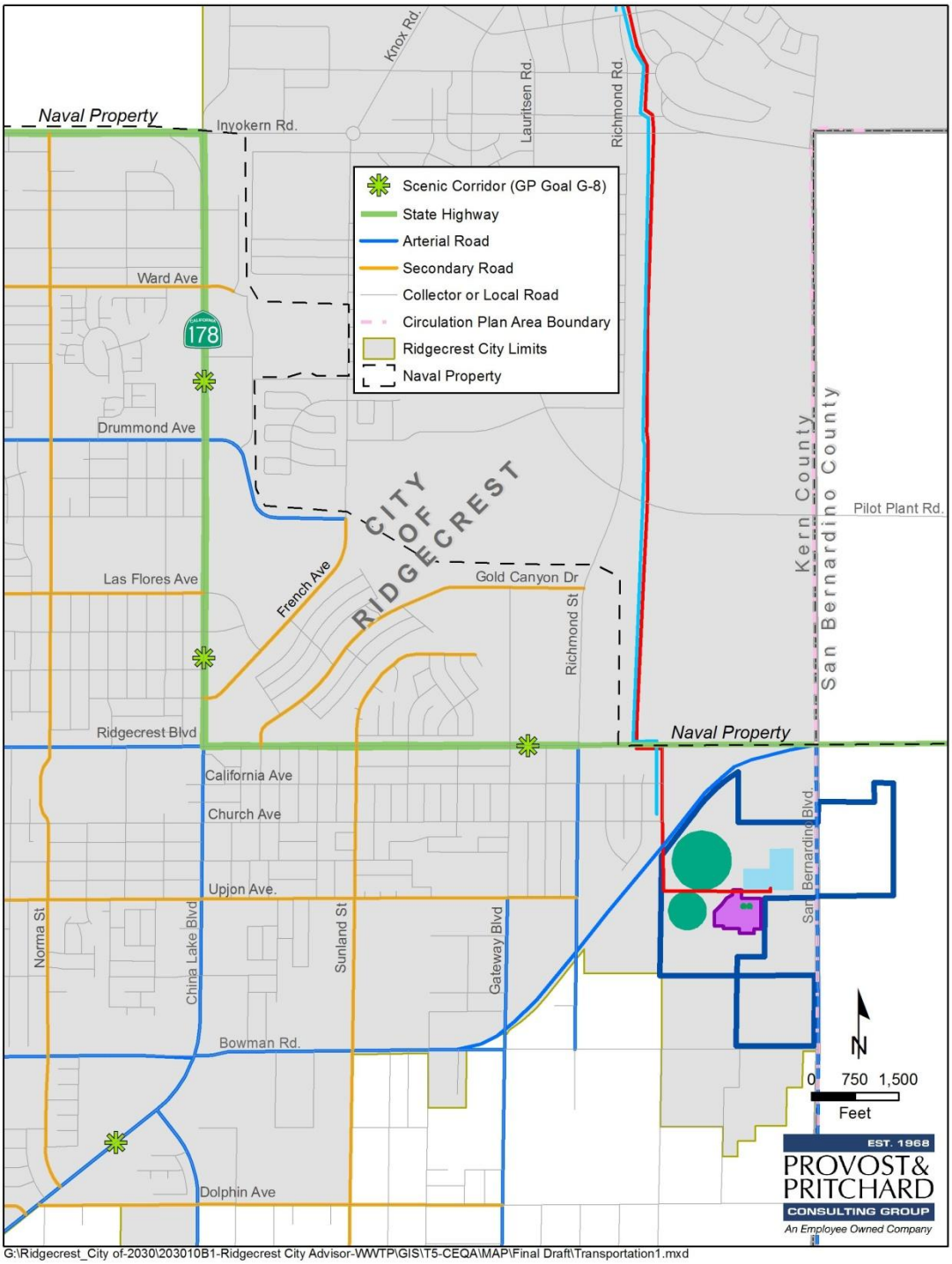


Figure 3-9. City of Ridgecrest Motorized Circulation Plan

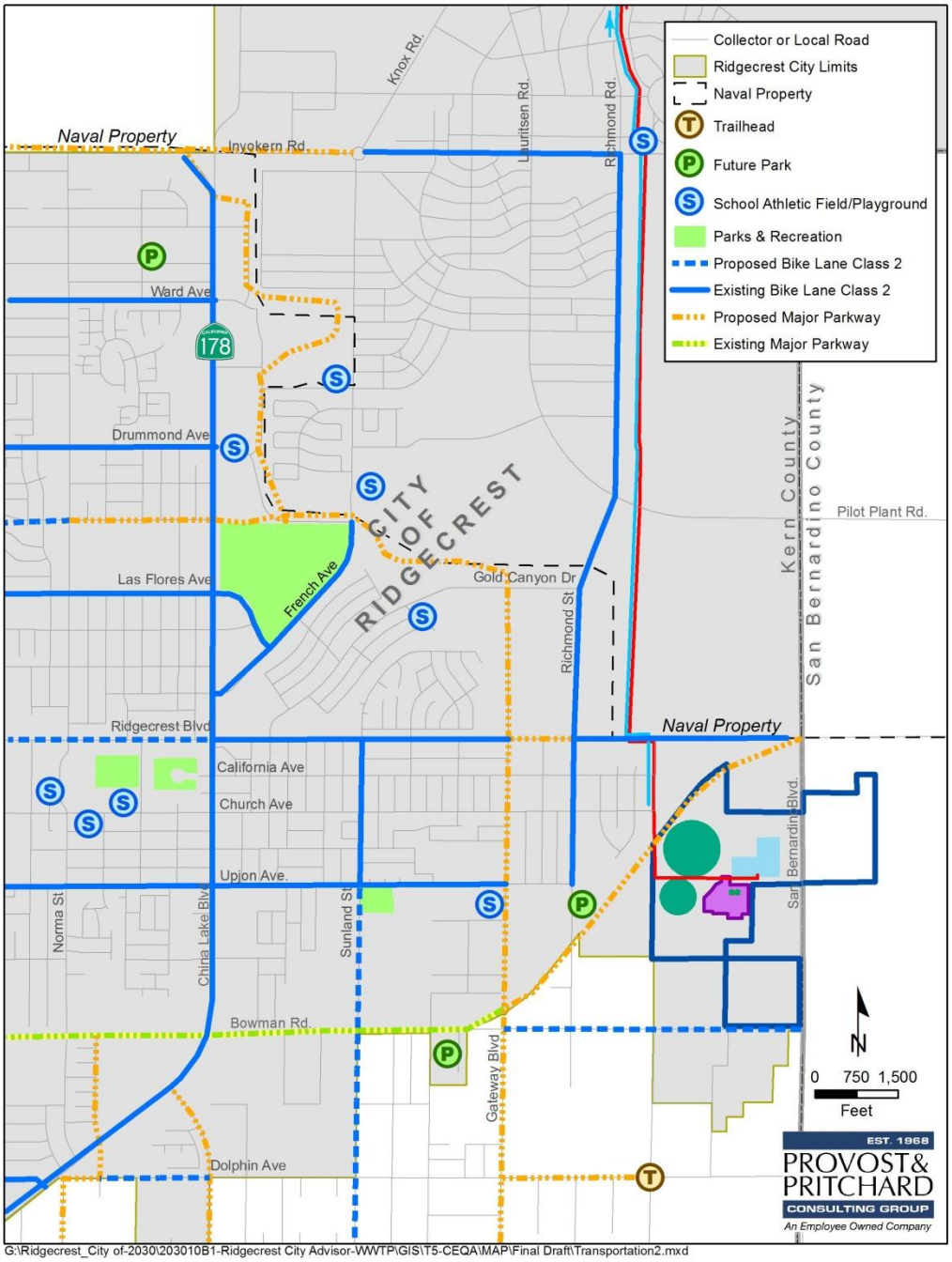


Figure 3-10. City of Ridgecrest Non-Motorized Circulation Plan

The proposed Project Alternatives would generate temporary construction traffic. The following identifies potential roadways that may be utilized and their designations:

- Inyokern Road– State Highway 395
- Knox Road – Collector & Local Road
- Ridgecrest Boulevard– Arterial (west of Highway 395) and State Highway 178 (east of Highway 395)
- China Lake Boulevard – State Highway 395
- San Bernardino Boulevard - Collector & Local Road (south of Springer Avenue) and Arterial (north of Springer Avenue)
- Richmond Road – Arterial
- Bowman Road – Arterial (west of Gateway Boulevard) and Collector & Local Road (east of Gateway Boulevard)

There are no existing or planned alternative transportation facilities within the immediate area of the proposed Project Alternatives.

Kern County ALUCP: The purpose of the ALUCP is to establish procedures and criteria by which the County of Kern and the affected incorporated cities can address compatibility issues when making planning decisions regarding airports and land uses around them. The ALUCP maps contain various zone boundaries around each public airport in Kern County based on the similar land use compatibility concerns. Six compatibility zones have been established: A, B1, B2, C, D, and E. However, none of the Alternative fall within any of these zones. The ALUC defers any development procedures and criteria relating to the NAWS China Lake AICUZ Study.

Kern Council of Governments 2014 Regional Transportation Plan: The 2014 Regional Transportation Plan (RTP) is a 26-year blueprint that establishes a set of regional transportation goals, policies, and actions intended to guide development of the planned multimodal transportation systems in Kern County.

Since 1981, KRT has provided a vital transportation link to the residents of Kern County. Through the services KRT provides—local demand response, fixed routes, and express routes—customers are able to travel to work, medical services, education, shopping, and social needs.

In early 2002, KRT joined with Inyo Mono Transit (now called Eastern Sierra Transit Authority) to provide CREST (Carson Ridgecrest Eastern Sierra Transit), from which transit users can connect in Ridgecrest to points north, including Lone Pine, Independence, Bishop, and Mammoth. Additionally, the County of Kern operates Kern Regional Transit (KRT) within the Ridgecrest area.

Indian Wells Airport District/Inyokern Airport serves Naval Air Weapons Station China Lake, the community of Inyokern, and the City of Ridgecrest with scheduled airline service to Los Angeles International. It also serves local general aviation needs for personal, business, and recreational flying. Several fixed-base operators provide services at the airport. The airport is located northwest of the small community of Inyokern.

3.16.2.4 XVI-a) Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Alternatives 1 and 2: **No Impact.** Alternatives 1 and 2 would result in construction activities at two separate sites, plus the additional pipeline site under Alternative 2:

1. **NAWS China Lake Site:** Construction at the NAWS China Lake Site would increase traffic on Inyokern Road and Knox Road as a result of construction material, equipment and worker trips. According to the City of Ridgecrest Motorized Circulation Plans, these roads are designated as follows:
    a. Inyokern Road– State Highway 395
    b. Knox Road – Collector & Local Road
2. **City of Ridgecrest Site:** Construction at the City site would increase traffic on Ridgecrest Boulevard, China Lake Boulevard, San Bernardino Boulevard, Richmond Road, and Bowman Road as a result of construction material, equipment and worker trips. According to the City of Ridgecrest Motorized Circulation Plans, these roads are designated as follows:
    a. Ridgecrest Boulevard– Arterial (west of Highway 395) and State Highway 178 (east of Highway 395)
    b. China Lake Boulevard – State Highway 395
    c. San Bernardino Boulevard - Collector & Local Road (south of Springer Avenue) and Arterial (north of Springer Avenue)
    d. Richmond Road – Arterial
    e. Bowman Road – Arterial (west of Gateway Boulevard) and Collector & Local Road (east of Gateway Boulevard)
    f. There are no existing alternative transportation facilities within the immediate area of the City Site.

Construction-related material haul trips and vehicle travel to and from the sites would periodically increase traffic along the roadways identified above. It is estimated that construction would generate approximately 3.3 trips per weekday and 2.7 trips per weekend day during the construction period. Considering the average type and volume of traffic near the NAWS and City sites that are associated with nearby military, residential, and recreational activities, construction-related material haul trips are considered to be generally consistent. Heavy vehicle traffic is permitted on roadways adjacent to the City Site, as the City of Ridgecrest General Plan designates San Bernardino Boulevard as an arterial roadway and Policy C-9.1 promotes heavy vehicle traffic on Bowman Road. Additionally, there are no existing alternative transportation facilities within the immediate area of the proposed Project Alternatives. Therefore, no conflicts with traffic circulation plans, ordinances or policies were identified.

The long-term operation of Alternatives 1 and 2 would result in an increase of approximately 10 employee trips per day and 48 haul truck trips per month. However, it can be reasonably assumed that this level of vehicle traffic would be less than significant. Therefore, existing and proposed transportations facilities would not be impacted by the long-term operation of the proposed Project Alternatives. No conflicts with traffic circulation plans, ordinances or policies were identified for either Alternative 1 or 2.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.16.2.5 XVI-b) Would the Project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Alternatives 1 and 2: **No Impact.** The City of Ridgecrest does not have level of service thresholds for construction-related traffic impacts. Due to their short-term nature, construction traffic effects for typical construction projects are considered temporary and do not require mitigation. The long-term operation of Alternative 1 or Alternative 2 would increase the existing employee vehicle trip baseline by ten trips per day and may result in additional incidental vehicle trips associated with maintenance activities at both the City and San Bernardino site. However, this level of vehicle traffic would be insignificant. Therefore, the proposed Project Alternatives would not conflict with an applicable congestion management program or other congestion-related standards.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.16.2.6 XVI-c) Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

Alternative 1: **No Impact.** According to the China Lake AICUZ, both the Alternative 1 Project sites and the Alternative 2 Project sites are not located within an Accident Potential Zone. Additionally, according to the Kern County ALUCP, the project sites are not located within an airport land use zone. Finally, the height of the proposed facilities would not present the potential to interfere with air traffic. Therefore, no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.16.2.7 XVI-d) Would the Project substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporated.** Neither alternative involves the alternation of any existing public roadway travel lanes nor do they involve the construction of any new public roadways. Therefore, the proposed Project under either alternatives would not result in a roadway hazard due to a design feature.

Both alternatives would involve minor construction activities within the Knox Road, San Bernardino Boulevard and Bowman Road rights-of-way associated with the construction of driveway approaches for onsite access roads to the proposed wastewater treatment ponds and new wastewater treatment facilities at the Project Alternatives' sites. In order to reduce the potential for conflicts between roadway traffic and construction equipment, the City shall implement mitigation measure TR-1 and TR-2 for both Alternative 1 and 2:

3.16.3 Mitigation Measures

- **TR-1:** During construction, fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.

- **TR-2:** Prior to the commencement of construction activities, the City shall finalize and pave each access approach. Additionally, the City shall finalize and all-weather surface each onsite access driveway. All access approaches and driveways shall be designed to ensure adequate access and circulation for emergency vehicles.

With implementation of TR-1 and TR-2, impacts would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.16.3.1 XVI-e) Would the Project result in inadequate emergency access?

Alternatives 1 and 2: **Less than Significant With Mitigation Incorporated.** Implementation of mitigation measure TR-2 would ensure that adequate emergency access approaches and driveways are installed at the Project Alternatives' sites. Therefore, with implementation of **TR-2**, impacts would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.16.3.2 XVI-f) Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Alternatives 1 and 2: **No Impact.** According to the City of Ridgecrest General Plan Circulation Element's Non-motorized Transportation Plan map, there are no existing or planned alternative transportation facilities within the immediate area of the proposed Project Alternatives. Therefore, no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.16.4 References

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
URL: http://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202030.pdf
Access Date: 5/14/2015

3.17 Utilities and Service Systems

3.17.1 Environmental Setting

Alternatives 1 and 2 Setting: Both alternatives involve the replacement of an existing, outdated, 3.6 MGD capacity wastewater treatment plant located on the Naval Air Weapons Station (NAWS) China Lake. Further detail of the facilities that would be constructed for either alternative is contained in Chapter 2, Project Description. Alternatives 1 and 2 both involve the two main sites described below, although Alterative 2 contains additional project components that warrant discussion.

1. **NAWS China Lake Site:** The NAWS site is located northeast of the intersection of Knox Road and Pole Line Road, on NAWS China Lake. The site is 355 acres in size and consists of 300 acres of existing wastewater ponds and approximately 55 acres of vacant land with common natural vegetation.

2. **City of Ridgecrest Site:** The City site consists of two properties located west and east of San Bernardino Boulevard. The western portion lies between Church Avenue and Bowman Road, in the City of Ridgecrest. The site is 180 acres in size and consists of 12 acres of existing wastewater ponds, 30 acres of alfalfa fields where treated effluent from the existing wastewater treatment facility is recycled and used as irrigation water, a 20-acre off-road vehicle park, and areas of common natural vegetation. The eastern portion lies between California Avenue and Upjohn Avenue, in San Bernardino County. The site is 50 acres in size and consists of common natural vegetation.
3. **Alternative 2 Force Main Site:** The pipeline will be constructed running north-south parallel to the existing force main, with the majority of the pipeline adjacent to Richmond Road on the eastern edge of the City limits. This section is surrounded predominantly by natural vegetation.

No Project Alternative Setting: The No Project Alternative would not involve any changes in the physical environment. The City would continue to operate its existing 3.6 mgd wastewater treatment facility on the NAWS China Lake and the wastewater disposal ponds which are located at the NAWS and City sites, and the existing underground four-mile effluent force main, as illustrated in **Figure 2-1**. Various improvements may be implemented to extend the life of the existing plant for another 5 to 10 years and maintain compliance with RWQCB waste discharge requirements, but it is not anticipated to be functional, nor sufficient in capacity, beyond that time. The No Project Alternative reflects the existing environmental baseline established in this EIR.

Wastewater Services/Facilities: Wastewater treatment facilities in California are regulated by Regional Water Quality Control Boards (RWQCB) through the issuance of permits entitled "Waste Discharge Requirements" (WDRs). The local RWQCB is responsible for developing and issuing WDRs to wastewater treatment facilities that discharge to land and groundwater, and National Pollutant Discharge Elimination System (NPDES) permits for facilities that discharge to surface waters. The RWQCB and the Division of Drinking Water jointly regulate projects that use recycled water, with the RWQCB being responsible for issuing recycled water permits. The RWQCB is also responsible for approving sludge disposal applications for dischargers in California. The Lahontan RWQCB, located in Victorville, regulates waste discharges from the City of Ridgecrest.

The City of Ridgecrest WWTP currently discharges all of its effluent to land through a series of percolation/evaporation ponds, golf course irrigation, and alfalfa irrigation.

The existing WWTP currently operates under Waste Discharge Requirements (WDR) Board Order No. 6-00-56. The WDR set limits on pollutants in the wastewater effluent discharged from the WWTP with the goal of protecting public health and beneficial uses of the groundwater. WDR 6-00-56 regulates only that effluent discharged to the evaporation/percolation ponds located on the NAWS site. Wastewater recycling requirements for the NAWS Golf Course are established under separate WDR Board Order No. 6-84-36, and discharge to the City of Ridgecrest irrigation site (also the City site) is regulated under separate WDR Board Order No. 6-93-85.

The existing wastewater treatment plant uses a gravity collection service. There are two main watersheds that encompass most of Ridgecrest and this allows for wastewater to be feed by gravity to the NAWS Site. The existing wastewater treatment plant can adequately service the immediate population. At a capacity of 3.6 million gallons per day (mgd), the facility currently operates at approximately 2.2 mgd.

Water: Indian Valley Water District (IVWD) is responsible for providing potable water to the City of Ridgecrest. IVWD serves a population of more than 27,000 people through approximately 11,500 service connections (Indian Wells Valley Water District, 2005).
The sole source of potable water supply in the Indian Wells Valley is groundwater, with a current annual groundwater extraction of about 34,000 acre feet. These extractions are offset by an estimated annual

recharge of between 6,000 and 11,000 acre feet (Indian Wells Valley Water District, 2005). Overall, groundwater levels are generally declining at a rate of .5 to 1.5 feet per year depending on the specific area of the groundwater basin.

The Indian Wells Valley Cooperative Groundwater Management Plan has been adopted by the Indian Wells Valley Cooperative Groundwater Management Group. This plan was developed as a way for the primary water producers and consumers in the area to jointly manage and evaluate the areas groundwater resources. The Plan includes various provisions to address water management; water conservation; and increasing the life of the aquifer through blending, water importation, and treatment. The results of an investigation by the United States Bureau of Reclamation concluded that there is sufficient water in storage to sustain continued production for over 160 years if the water resource is effectively managed. Management options include water blending, expanding pumping to new areas, and treating poorer quality water.

Solid Waste: Within the Ridgecrest area, solid waste collection service is provided by Kern County Waste Management Department, which operates the Ridgecrest-Inyokern Sanitary Landfill at 3301 Bowman Road in Ridgecrest CA. The total estimated permitted capacity of the landfill is approximately 5,992,700 (cubic yards). There is approximately 5,000,898 (cubic yards) or 83.4% of remaining capacity at the Ridgecrest-Inyokern Sanitary Landfill. The permitted maximum daily disposal is 701 tons per day. (California Integrated Waste Management Board, 2009). Waste Management Inc. provides curbside refuse, green waste, and recycling collection for The City of Ridgecrest. The surrounding unincorporated areas are serviced through Benz Sanitation located at 237 County Line Road, Ridgecrest 93560. It is then conveyed to a landfill operated by Kern County Waste Management located at 3301 West Bowman Road, Ridgecrest 93555.

Storm Water Drainage: Storm water runoff is conveyed using the city streets. The predominant flow travels in a northerly and easterly direction until it enters NAWS China Lake property. There are several detention/retention basins that are maintained by the city.

3.17.2 Regulatory Setting

3.17.2.1 Federal

Clean Water Act-Section 404: The federal Clean Water Act (CWA, 33 USC 1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's water." Important applicable sections of the Act are as follows:

1. **Sections 303 and 304** provide for water quality standards, criteria, and guidelines.
2. **Section 401** requires an applicant for any federal permit that proposes an activity which may result in a discharge to "waters of the United States" to obtain certification from the state that the discharge will comply with other provisions of the Act. The Regional Water Quality Control Board (RWQCB) provides certification.
3. **Section 402** establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. This permit program is administered by the RWQCB.
4. **Section 404** establishes a permit program for the discharge of dredge or fill material into waters of the United States. The U.S. Army Corps of Engineers (ACOE) administers this permit program.

Wetlands and other waters of the U.S. are subject to the jurisdiction of the ACOE and Environmental Protection Agency (EPA) under Section 404 of the Clean Water Act. Wet areas that are not regulated by this Act do not have a hydrologic link to other waters of the U.S., either through surface or subsurface flow. The ACOE has the authority to issue a permit for any discharge, fill, or dredge of wetlands on a case-by-case

basis, or by a general permit. General permits are handled through a Nationwide Permit (NWP) process. These permits allow specific activities that generally create minimal environmental effects. Projects that qualify under the NWP program must fulfill several general and specific conditions under each applicable NWP. If a proposed project cannot meet the conditions of each applicable, an individual permit would likely be required from the ACOE[136].

3.17.2.2 State

State Water Resources Control Board (SWRCB): Waste Discharge Requirements Program. State regulations pertaining to the treatment, storage, processing, or disposal of solid waste are found in Title 27, CCR, Section 20005 et seq. (hereafter Title 27). In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g. sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to Section 20230 of Title 27. Several programs are administered under the WDR Program, including the Sanitary Sewer Order and recycled water programs.

Department of Resources Recycling and Recovery (CalRecycle): The Department of Resources Recycling and Recovery (CalRecycle) is the State agency designated to oversee, manage, and track the 76 million tons of waste generated each year in California. CalRecycle develops laws and regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. The board works jointly with local government to implement regulations and fund programs.

The Integrated Waste Management Act of 1989 (PRC 40050 et seq. or Assembly Bill (AB 939, codified in PRC 40000), administered by CalRecycle, requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

Regional Water Quality Control Boards: The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards. The State Board sets statewide policy for the implementation of state and federal laws and regulations. The Regional Boards adopt and implement Water Quality Control Plans (Basin Plans) which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities.

- National Pollutant Discharge Elimination System (NPDES) Permit: As authorized by the Clean Water Act (CWA), the National Pollutant Discharge Elimination System (NPDES) Permit Program controls water pollution by regulating point sources that discharge pollutants into water of the United States. In California, it is the responsibility of Regional Water Quality Control Boards (RWQCB) to preserve and enhance the quality of the state's waters through the development of water quality control plans and the issuance of waste discharge requirements (WDRs). WDRs for discharges to surface waters also serve as NPDES permits[137]

[136] United States Environmental Protection Agency. Section 404 of the Clean Water Act. www.epa.gov/cwa-404/section-404-permit-program. Site accessed April 2016.
[137] California State Water Resources Control Board. National Pollutant Discharge Elimination System (NPDES). Site Available: http://www.waterboards.ca.gov/water_issues/programs/npdes/.

California Department of Water Resources: The California Department of Water Resources (DWR) is a department within the California Resources Agency. The DWR is responsible for the State of California's management and regulation of water usage.

Porter-Cologne Water Quality Control Act: The Porter-Cologne Water Quality Control Act regulates the discharge of waste into waters of the state. The Regional Water Quality Control Board (RWQCB) administers this regulation. Water Code Section 13260 requires "any person discharging, or proposing to discharge waste, within any region that could affect the waters of the state to file a report of discharge." A report of waste discharge ("RWD") is an application for waste discharge requirements ("WDRs"). WDRs contain conditions imposed on a given discharge by the appropriate RWQCBs for the purpose of protecting the beneficial uses of the waters of the state. Upon receipt of a RWD, the RWQCB may issue WDRs imposing conditions on the proposed discharge, or it may waive the requirement for WDRs.

SB 610 and SB 221: Senate Bill 610 became effective January 1, 2002, and requires cities and counties in connection with CEQA to review and consider water supply assessments when evaluating certain development projects to determine if projected water supplies can meet the project's anticipated water demand.

SB 610 also requires additional factors to be considered in the preparation of urban water management plans, water supply assessments, and for certain development projects that are otherwise subject to CEQA review. SB 221 requires similar analysis for subdivision maps that meet the threshold review criteria.

3.17.2.3 Local

City of Ridgecrest General Plan: The City of Ridgecrest General Plan establishes the following policies, objectives and guidelines that are applicable to the proposed Project Alternatives:

1. **CD-2.11 Use of Reclaimed Wastewater:** Develop a long range plan for the distribution of reclaimed waste water to be used in place of fresh water where applicable.
2. **HS-5.11 Emergency Cut Off Valves:** The City shall require that any new installation of utilities that cross active fault traces have emergency cut off valves at accessible locations.
3. **HS-2.6 Solid and Liquid Waste Disposal:** The City shall require that the method in which solid and liquid wastes are disposed is in accordance with state and federal regulations to prevent air quality degradation.
4. **HS-2.11 Dust Suppression Measures:** The City shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to, the following:
    a. Site watering or application of dust suppressants,
    b. Phasing or extension of grading operations,
    c. Covering of stockpiles,
    d. Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour), and
    e. Revegetation of graded areas.
5. **HS-5.20 Solid and Liquid Disposal:** The City shall require the disposal of solid and liquid wastes in a manner which is consistent with State and Federal regulations and that prevents soil contamination.

6. **LU-10.7 Solid Waste:** The City shall promote maximum use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes.
7. **OSC-6.1 Reduce Surface and Runoff:** The City shall require a construction plan prior to the groundbreaking that uses site design and grading techniques to reduce the amount of impervious surface and runoff for all new urban commercial or residential developments proposed projects.
8. **OSC-6.2 Solid and Liquid Waste Disposal:** The City shall require the disposition of solid and liquid wastes in a manner consistent with state and federal regulations to prevent contamination of the aquifer.
9. **OSC-6.4 Investigate Groundwater Recharge Methods:** The City shall investigate methods of expanded reuse or tertiary treatment of wastewater for groundwater recharge, industrial use and landscape irrigation, and implement effective methods where feasible.
10. **OSC-11.5 Promote Water Conservation Methods:** The City shall develop park areas utilizing xeriscape practices, wastewater reuse and other water conserving measures as a demonstration and educational opportunity for residents to learn water conservation practices.
11. **CD-2.11 Use of Reclaimed Wastewater:** Develop a long range plan for the distribution of reclaimed waste water to be used in place of fresh water where applicable.

San Bernardino County General Plan: The San Bernardino County General Plan establishes the following policies, objectives and guidelines that are applicable to the proposed Project Alternatives:

1. **CI 11.1:** Apply federal and state water quality standards for surface and groundwater and wastewater discharge requirements in the review of development proposals that relate to type, location and size of the proposed project to safeguard public health.
2. **D/CO 1.9:** Promote conservation of water by implementing the following policies/actions:
    a. Encourage the use of drip irrigation systems or systems of equivalent efficiency for all landscaping on residential lots.
    b. Encourage the use of pervious paving materials on commercial, industrial and institutional parking areas. Large parking areas should consider using landscape areas as depressions to receive and percolate runoff as an alternative.
    c. If a wastewater treatment system is developed within the region, the system which will reclaim the treated effluent and make it available for public or private landscape purposes.
3. **CI 13.2:** Promote the implementation of low impact design principles to help control the quantity and improve the quality of urban runoff. These principles include:
    a. Minimize changes in hydrology and pollutant loading; ensure that post development runoff rates and velocities from a site do not adversely impact downstream erosion, and stream habitat; minimize the quantity of stormwater directed to impermeable surfaces; and maximize percolation of stormwater into the ground where appropriate.
    b. Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels;
    c. Preserve wetlands, riparian corridors, and buffer zones; establish reasonable limits on the clearing of vegetation from the project site;
    d. Establish development guidelines for areas particularly susceptible to erosion and sediment loss;

e. Require incorporation of structural and non-stuctural BMPs to mitigate projected increases in pollutant loads and flows.

Local Agency Groundwater Management Programs: Some local agencies have specific statutory authority to manage groundwater resources in their service areas. Other local agencies may manage groundwater under authority provided by general enabling legislation, such as Water Code Section 10750 et seq. A few counties have adopted local ordinances to administer groundwater management. AB 3030 (Water Code Section 10750 et seq.) provided broad general authority for local agencies to adopt groundwater management plans and to impose assessments to finance the cost of implementing the plans. To date, about 150 local agencies have adopted AB 3030 groundwater management plans.

Lahontan Regional Water Quality Control Board (Regional Board): The City of Ridgecrest is located within the jurisdiction of the Lahontan Regional Water Quality Control Board (Regional Board), in an area identified as the South Lahontan Basin which includes the communities of Mammoth Lakes, Bishop, Mojave, Adelanto, Palmdale, Lancaster, Victorville, and Barstow. The Lahontan Region is defined in terms of drainage basins by Section 13200(h) of the Porter-Cologne Act. For planning purposes, it has historically been divided into North and South Lahontan Basins at the boundary between the Mono Lake and East Walker River watersheds. It is about 570 miles long and has a total area of 33,130 square miles. The South Lahontan Basin includes three major surface water systems (the Mono Lake, Owens River, and Mojave River watersheds) and a number of separate closed ground water basins. Very little quantitative information is available on most of the water bodies in the Region.

The Lahontan Regional Water Quality Control Board maintains water quality through control of waste water discharge types. Point source waste water in Ridgecrest includes municipal wastewater and solid waste sites and other industrial uses. Point source discharges must meet waste water discharge requirements, or obtain a waste water waiver. Nonpoint sources, include drainage and percolation from a variety of activities including storm runoff and are mitigated by state management practices.

3.17.3 Impact Assessment

3.17.3.1 XVII-a) Would the Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Alternatives 1 and 2: **Less than Significant.** The existing WWTP has a capacity of 3.6 mgd by the Lahontan Regional Water Quality Control Board (Regional Board). The existing WWTP currently operates under Waste Discharge Requirements (WDR) Board Order No. 6-00-56. The WDR set limits on pollutants in the wastewater effluent discharged from the WWTP with the goal of protecting public health and beneficial uses of the groundwater. WDR 6-00-56 regulates only that effluent discharged to the evaporation/percolation ponds located on the NAWS site. Wastewater recycling requirements for the NAWS Golf Course are established under separate WDR Board Order No. 6-84-36, and discharge to the City of Ridgecrest irrigation site (also the City site) is regulated under separate WDR Board Order No. 6-93-85.

Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. While neither alternative would exceed the permitted capacity of the existing WWTP, a new WDR Board Order would need to be issued for the new WWTP facilities, including the additional 56 wet acres of wastewater treatment ponds. Additionally, as the City continues its efforts to recycle treated wastewater, additional WDR Orders may be required to discharge water on new sites. The proposed Alternatives would be designed to meet the Lahontan Regional Water Quality Control Board waste discharge; therefore, the impacts would be less than significant.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.17.3.2 XVII-b) Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Alternatives 1 and 2: **Potentially Significant Impact- Significant and Unavoidable.** The existing WWTP has a permitted capacity of 3.6 mgd by the Lahontan Regional Water Quality Control Board (Regional Board). Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. Potential impacts relating to the construction and operation of the proposed Project under both alternatives has been discussed throughout this document. While mitigation is sufficient for many impacts, there are impacts where feasible mitigation could not be identified. Therefore, the proposed Project Alternatives would result in significant and unavoidable impacts.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.17.3.3 XVII-c) Would the Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

3.17.3.4 Alternatives 1 and 2: No Impact. Both Alternative 1 and 2 would result in minor net increases to impervious surfaces. The proposed 56 wet acres of new wastewater treatment ponds are intended to allow treated effluent water to percolate and/or evaporate. Minor interior driveways would likely be constructed to allow access to the ponds and other facilities. However, it is assumed that they will be surfaced with gravel. Therefore, the proposed Project under both alternatives would not result in the installation of significant amounts of impervious surfaces which trigger a need for the construction of new storm water drainage facilities or the expansion of existing facilities. No impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.17.3.5 XVII-d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Alternatives 1 and 2: **No Impact.** Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. The updated facilities would incorporate new technology that would increase water efficiency. Therefore, the environmental baseline would be maintained and no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.17.3.6 XVII-e) Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Alternatives 1 and 2: **No Impact.** The City of Ridgecrest is the wastewater treatment provider and is the proposed Project Alternatives' proponent. Alternatives 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant in order to increase efficiency and improve service. Therefore, the environmental baseline would be maintained and no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.17.3.7 XVII-f) Would the Project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Alternatives 1 and 2: **Less Than Significant.** Alternatives 1 and 2 would generate solid waste during the construction phase. The Ridgecrest-Inyokern Sanitary Landfill has a maximum capacity is at 5,992,700 cubic yards and a remaining capacity of 5,000,898 cubic yards. Therefore, it sufficient capacity to accommodate the Alternatives' solid waste disposal needs. Therefore, less than significant impacts would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.17.3.8 XVII-g) Would the Project comply with federal, state, and local statutes and regulations related to solid waste?

Alternatives 1 and 2: **No Impact.** The City is required to follow federal, state and local laws related to the collection and disposal of solid waste. All solid waste generated as a result of construction would be disposed of at the Ridgecrest-Inyokern Sanitary Landfill. Therefore, no impact would occur.

No Project Alternative: **No Impact.** The No Project Alternative would result in no change to the existing environment. Therefore, the environmental baseline would be maintained and no impact would occur.

3.17.4 References

City of Ridgecrest General Plan
Adopted Date: 10/15/2008
URL: http://ridgecrest-ca.gov/uploadedfiles/Departments/Public_Services/Planning_Department/General%20Plan%202030.pdf
Access Date: 5/14/2015

San Bernardino County General Plan
Adopted Date: 2007
URL: http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf
Access Date: March 2016.

4 Cumulative Impact Assessment

The California Environmental Quality Act (CEQA) defines a cumulative impact as being created when two or more projects act in combination to cause related effects which, when considered together, are considerable or which compound or increase other environmental impacts aside from those resulting from the individual project alone. Section 15130(a) of CEQA Guidelines require an environmental impact report (EIR) to identify and discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable", meaning that the project's incremental effects are considerable when viewed in combination with the effects of past, current, and probable future projects. If the lead agency determines that the incremental effect of the project is not cumulatively considerable, it shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable, and then it may conclude the effect is less than significant.

CEQA Guidelines also state that the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion does not need to provide as great detail as is provided in the analysis of effects attributable to the project alone and should be guided by the standards of practicality and reasonableness.

In addition, Section 15130(b) of CEQA Guidelines identifies that one of the following two approaches may be used to complete an adequate cumulative analysis:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the lead agency (i.e., the list approach), or
- A summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency (i.e., the plan approach).

According to CEQA 15130(b), the analyses of cumulative effects below should focus on the cumulative impact to which the identified other projects contribute, as opposed to the attributes of other projects which do not contribute to the cumulative impacts.

Past, Present, and Reasonably Foreseeable Future Projects

This analysis is based on the "list approach" described above and thus, relies on a list provided by the City of Ridgecrest of a past, present and reasonably foreseeable future projects that the City believes could result in similar impacts as the proposed Project evaluated in this EIR.. The list contained two (2) related projects,. Their descriptions are provided verbatim below and their locations are shown on Figure ~..

- Project #1: Wi-Fi Tower; 1514 North Inyo Street

This related project consists of the construction of a 120-foot tall Wi-Fi tower, located approximately 3.5 miles northwest of the City Site and 2.7 miles southwest of the NAWS Site.

- Project #2: Apartment Development; east side of Downs Street across from West Willow Avenue

This project consists of the construction of a 118-dwelling apartment development, including both one and two-story buildings of an approximate maximum height of 24-feet, located approximately 2.5 miles west of the City Site and 4.4 miles southwest of the NAWS China Lake Site.

4.1.1 Cumulative Impact Analysis

Aesthetics and Visual Resources

The study area for cumulative impacts for aesthetics and visual resources is defined as a viewshed extending one mile in all directions from the NAWS Site, the City Site, and the 21,000 foot pipeline site. This EIR determined the construction of the proposed Project could have potentially significant impacts due to the development on flat terrain in a relatively natural environment. Mitigation Measures AES-1 and AES-2 are recommended to reduce this impact to less than significant.

Due to the City's flat topography, broad seeping 360-degree scenic vistas towards the four mountain ranges that encircle the City of Ridgecrest are available from most locations within the City. Project #1 involves the construction of a 120-ft. tower, and Project #2 involves the construction of one to two story buildings, with a maximum height of 25 feet. Either project could reasonably be expected to result in changes to scenic vistas or viewsheds from or of their or the Project sites.

The Wi-Fi tower of Project #1 while quite tall would also be relatively slender in its bulk and mass and therefore, while clearly a visible landmark from some distance around the City, would not be expected to significantly obstruct or block any scenic vista or view shed. Tall wireless communication towers are also a type of landmark increasingly common and accepted in the landscape of urbanized communities and rarely considered to significantly impact aesthetics.

The Project #2 apartment development would consist of a cluster of low profile (one or two story) buildings similar to most other development throughout the City.

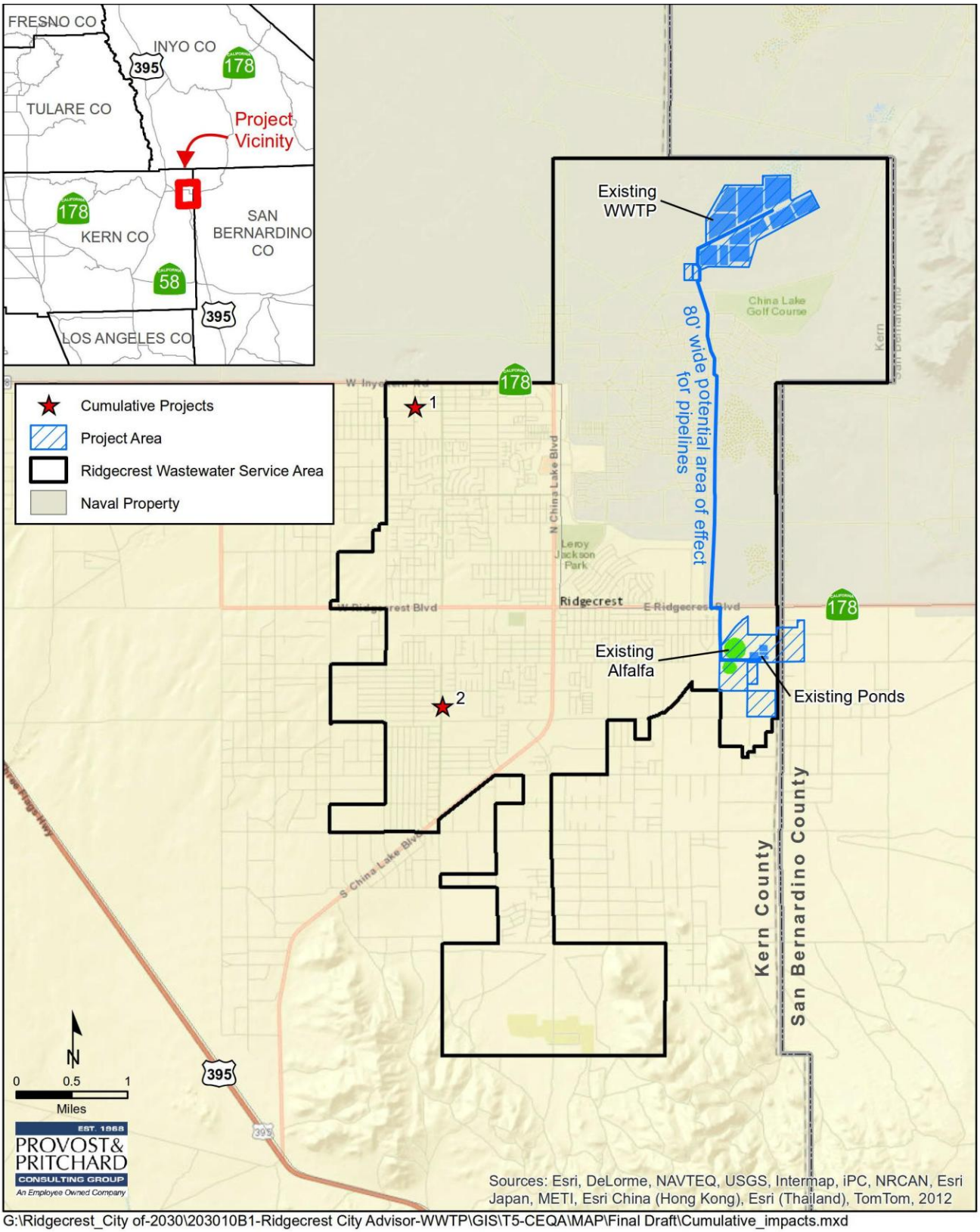


Figure 4-1. Cumulative Impacts

The apartment development will occur internal to the City and would be considered "in-fill" development surrounded by other urbanized areas of the City. Some vacant land occurs adjacent to the Project #2 site, but it is all slated for development by the City General Plan. Views in all directions from lands immediately adjacent to the apartment complex can be expected to be blocked or altered by the bulk and mass of the buildings even though they will be relatively low-profile. Some glimpses of scenic vistas may still be possible between the buildings. Such changes in the visibility of scenic vistas is often the result of, and commonly accepted with, the urbanization process.

Because each of the three developments will result in some changes to close range and distant view sheds and vistas from various locations around the City, they are sufficiently separated from one another (roughly 2.5 miles at minimum) such that "together" they do not combine to block or obstruct a shared view in a significant adverse way. The City determines that considered together the aesthetic effects of the three projects are not considerable nor do they compound or increase effects to or of City aesthetics or scenic views or veiwsheds.

Consistent with the definition of "cumulatively considerable" effects found in CEQA Guidelines Section 15065(a)(3), it is anticipated, therefore, that the effect of the above-referenced cumulative study area projects would not result in a significant cumulative impact on aesthetics and visual resources in relation to other projects that have occurred in the past, or which can reasonably be expected to occur in the foreseeable future. No further mitigation is required.

Agriculture and Forestry Resources

The study area for the cumulative impacts analysis related to agricultural and forestry resources includes the three individual project sites and lands in their immediate vicinity. None of the land involved in either Project #1 or Project #2 is zoned for agricultural or forestry uses. The pipeline component of Alternative 2 of the Project will pass through land zoned for agricultural use, however it will not result in the conversion of agricultural or forests lands to conflicting uses.

Consistent with the definition of "cumulatively considerable" effects found in CEQA Guidelines Section 15065(a)(3), it is anticipated, therefore, that the effect of the above-referenced cumulative study area projects would not result in a significant cumulative impact on agriculture and forestry resources in relation to other projects that have occurred in the past, or which can reasonably be expected to occur in the foreseeable future.

Air Quality

The study area for the cumulative impacts analysis related to air quality includes the entire MDAB. Construction of the related Projects #1 and #2, can be reasonably expected to contribute some amount of air pollutants. The apartment development in particular would involve a large amount of construction and would involve the vehicle emissions of all eventual residents, likely resulting in a significant impact. It is understood that both Project #1 and #2 will be subject to approval of a discretionary land use approval by the City, which would also trigger the preparation and adoption of a CEQA compliant environmental clearance document. It is therefore assumed that for each of the two projects, mitigation measures would be imposed on the projects that would reduce said impacts to a less than significant level. Even if the two projects are not subject to discretionary approval and CEQA clearance by the City, the EKAPCD likely has regulatory requirements applicable at the construction stage to reduce or avoid those types of temporary impacts.

This EIR has determined that the proposed Project could pose a risk of significant impacts due to the construction-related emissions related to fugitive dust as well as possibly expose sensitive receptors to odors from the wastewater treatment facility. Two mitigation measures have been proposed for the Project to reduce air quality impacts to less than significant levels, and the Project is required to comply with East Kern Air Pollution Control District (EKAPCD) standards. Given the mitigated impacts of the proposed Project together with the likely CEQA and EKAPCD compliance requirements for the other two projects to reduce

air pollution effects to less than significant levels, it is determined that the three projects together would not result in cumulatively considerable impact on air quality. No further mitigation is required.

Biological Resources

The study area for the cumulative impacts analysis related to biological resources includes the three individual project sites and lands in their immediate vicinity. Construction of the related Projects #1 and #2, could be reasonably expected to contribute some potential degree of effect to biological resources, particularly Project #2 which is adjacent to vacant/undeveloped area inside the City which could provide forage, breeding, denning, roosting, migration, habitat, or cover for endangered animals and plants. It is understood that both Project #1 and #2 will be subject to approval of a discretionary land use approvals by the City, which would also trigger the preparation and adoption of a CEQA compliant environmental clearance document. It is therefore assumed that for each of the two projects, mitigation measures consistent with policies and implementation strategies adopted by the City in its General Plan/EIR, and others as determined necessary would be imposed on the projects that would reduce said impacts to a less than significant level.

A biological survey prepared for the proposed Project found that it potentially posed a risk of significant impacts to several special status species animals that may breed and forage on the site, including Le Conte's thrasher and other migratory birds, the desert tortoise, burrowing wwls, Mohave ground squirrels, and the American badger. However, mitigation measures Bio-1 through Bio-~ have been included in Project plans to reduce all of these impacts to a less than significant level. Given that Project impacts to biological resources will be less than significant after mitigation and that related Projects will similarly be subject to environmental review and mitigation, therefore there would be no cumulatively considerable impacts on biological resources and no further mitigation is required.

Cultural Resources

The study area for cumulative impacts to historical, archaeological, and paleontological resources is defined for the proposed Project as the *City of Ridgecrest and surrounding areas*. Project #1, the Wi-Fi tower, is located in a heavily disturbed area zoned for light industrial uses. Project #2 is similarly located on a parcel zoned for multi-family residential, surrounded by lands highly disturbed by residential developments and urban human and domestic animal disturbances. Given both Projects' #1 and #2 highly developed locations, neither site is reasonably expected to reveal surface of evidence of potential significant or unique cultural, archaeological or historical resources. However, as with the proposed Project, when subterranean construction activities take place, there is always the potential for inadvertent discovery of buried resources and exposure of important paleontological information in the below grade strata.

It is understood that both Project #1 and #2 will be subject to approval of a discretionary land use approvals by the City, which would also trigger the preparation and adoption of a CEQA compliant environmental clearance document. It is therefore assumed that for each of the two projects, mitigation measures consistent with policies and implementation strategies adopted by the City in its General Plan/EIR, and others as determined necessary would be imposed on the projects that would reduce potential cultural impacts to a less than significant level. Standard conditions of approval for projects within Ridgecrest include measures that require halting construction work if any cultural resources or human remains are discovered and having a qualified archaeological professional evaluate any discovered resources and recommend appropriate mitigation as necessary.

For the proposed Project, implementation of Mitigation Measure CR-1, would reduce potential project impacts to cultural resources to a less than significant level under CEQA. Therefore, the incremental effects of the proposed Project, after mitigation, together with effects from the other two City projects, would not result in cumulatively considerable impact on cultural resources. No further mitigation is required.

Geology and Soils

The geographic scope of potential cumulative impacts related to geology and soils encompasses the three project sites and their respective immediate vicinity. Although City Projects #1 and #2 could have geologic

impacts similar to the proposed Project, geologic and soils impacts are generally site-specific and depend on highly localized geologic and soil conditions. All impacts to geology and soils from the proposed Project have been found to be, less than significant. Due to their distance of separation, neither of the two City projects are expected to contribute to or combine with the proposed Project in a way that would worsen geological effects significantly impacting any of the three sites or compound or increase other geologic, soils, or seismic impacts aside from those associated with the individual projects alone. Therefore, the incremental effects of the proposed Project, after mitigation, together with effects from the other two City projects, would not result in cumulatively considerable impact on geologic or soils resources. No further mitigation is required.

Greenhouse Gas Emissions

It is understood that both Project #1 and #2 will be subject to approval of a discretionary land use approvals by the City, which would also trigger the preparation and adoption of a CEQA compliant environmental clearance document. It is therefore assumed that for each of the two projects, mitigation measures consistent with policies and implementation strategies adopted by the City in its General Plan/EIR, and others as determined necessary would be imposed on the projects that would reduce potential greenhouse gas emission impacts to a less than significant level. Projects #1 and #2 would therefore be subject to the same regulations limiting the contribution of GHGs to the atmosphere as the proposed Project.

This EIR has determined that the proposed Project would not conflict with any of the California AB 32 Scoping Plan measures that were developed to reduce state-wide GHG emissions. Therefore, the contribution of the three projects together to global climate change would not be cumulatively considerable and would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Therefore, the incremental effects of the proposed Project, after mitigation, together with effects from the other two City projects, would not result in cumulatively considerable impacts with regard to greenhouse gas emissions. No further mitigation is required.

Hazards and Hazardous Materials

The geographic scope of potential cumulative impacts related to hazards and hazardous materials encompasses the three project sites and their general vicinity. City Projects #1 and #2 would both use similar hazardous materials during construction such as equipment and vehicle fuels, Project #2 may generate household hazardous types of waste.

It is understood that both Project #1 and #2 will be subject to approval of a discretionary land use approvals by the City, which would also trigger the preparation and adoption of a CEQA compliant environmental clearance document. It is therefore assumed that for each of the two projects, mitigation measures consistent with policies and implementation strategies adopted by the City in its General Plan/EIR, and others as determined necessary would be imposed on the projects that would reduce potential hazards and hazardous waste impacts to a less than significant level. Projects #1 and #2 would therefore be subject to the same regulations controlling hazards and transport, use, and disposal hazardous waste as the proposed Project.

With implementation of standard BMPs and implementation of Mitigation Measures HAZ-1 through HAZ-3, this EIR has determined that construction and operation of the Project is not expected to result in significant exposure to hazardous/hazardous materials. All three projects are subject to state and federal laws regulating the handling of hazardous materials and ensuring appropriate handling of any hazardous waste as well as contaminated soil or water encountered during construction. The cumulative impacts are therefore expected to be less than significant.

Therefore, the incremental effects of the proposed Project, after mitigation, together with effects from the other two City projects, would not result in cumulatively considerable impact on hazards or hazardous materials. No further mitigation is required.

Hydrology and Water Quality

The geographic scope of potential cumulative impacts related to water quality and hydrology encompasses the three project sites and their, immediate vicinity and underlying groundwater aquifer. . Of the two other City projects, Project #2 has the greatest potential for significant impact related to hydrology and water quality, given that construction shall occur over a large, currently vacant lot and erosion and runoff could occur.

It is understood that both Project #1 and #2 will be subject to approval of a discretionary land use approvals by the City, which would also trigger the preparation and adoption of a CEQA compliant environmental clearance document. It is therefore assumed that for each of the two projects, mitigation measures consistent with policies and implementation strategies adopted by the City in its General Plan/EIR, and others as determined necessary would be imposed on the projects that would reduce potential hydrology and water quality impacts to a less than significant level.

As with the proposed Project, should hydrology and water quality impacts not be mitigable to a less than significant level, then the three projects together could combine to result in cumulatively considerable impacts to hydrology and water quality. If additional reasonable and feasible mitigation measures can be identified that would further reduce impacts or reduce them to a level less than significant, they should be considered by the City for incorporation into the approvals of any of the three projects.

Land Use and Planning

The study area for the cumulative impacts analysis related to land use and planning includes the three individual project sites and lands in their immediate vicinity. . Both City projects #1 and #2 are believed to be uses consistent with General Plan land use designations and with their respective zoning districts.. Neither of the three other City projects could not approved if they were found to be inconsistent with local land use plans and zoning. . The Project has to potential to create significant land use conflicts impacts if wastewater treatment ponds are constructed in an area designated for recreational uses. However, Mitigation Measure LU-1 has been recommended to reduce this potential impact to a level less than significant. Based upon land use policy requirements and separation of the three project sites, it is determined that the three projects together would not result in cumulatively considerable impact on land use. No further mitigation is required.

Noise

The study area for the cumulative impacts analysis related to noise includes the three individual project sites and lands in their immediate vicinity.

It is understood that both Project #1 and #2 will be subject to approval of a discretionary land use approvals by the City, which would also trigger the preparation and adoption of a CEQA compliant environmental clearance document. It is therefore assumed that for each of the two projects, mitigation measures consistent with policies and implementation strategies adopted by the City in its General Plan/EIR, and others as determined necessary would be imposed on the projects that would reduce potential noise impacts to a less than significant level.

The cumulative analysis of construction noise impacts would be limited to the time when the construction activities occur and the distance between projects that are under construction

The two other projects proposed within the City of Ridgecrest are located a minimum 2.5 miles away from the Project sites. It is unknown if construction of either of the two other City projects will occur at the same time as the proposed Project. However, given their separation distance it is unlikely that their combined respective construction noise could to even be measurable at any of the other sites. Therefore, it would be unreasonable to expect that construction noise contours of the three related projects would overlap based on their distance of separation, even if all three were under construction at the same time.

The proposed Project is anticipated to have significant and unavoidable impacts to noise during construction activities even after the implementation of mitigation measures N-1 and N-2

Given that Project impacts to vibration are anticipated to be less than significant after mitigation measure N-3, and that construction noise contours or timing will not overlap with other related projects, there will not be cumulatively considerable impacts with regard to noise and vibration. No further mitigation is required.

Population and Housing

The study area for the cumulative impacts analysis for population and housing includes the City of Ridgecrest. . Each of these projects would be subject to applicable regional and local land use plans and policies. Due to planned expansions of NAWS China Lake, the projected population growth of Ridgecrest is expected to increase in future years. The proposed Project and the apartment development will help the City accommodate this growth, rather than directly causing it. The City Project #1 (wi-fi tower) is not considered to be growth inducing and would not result in any impacts to population or housing.

Therefore, the incremental effects of the proposed Project, together with effects from the other two City projects, would not result in cumulatively considerable impacts with regard to greenhouse gas emissions. No further mitigation is required.

Public Services

The study area for cumulative public services impacts consists of the areas served by the public services within the City of Ridgecrest. Of the two other related City Projects, only Project #2, the 118- dwelling apartment development, would increase the residential population and resulting incremental increase in demand for public services in the study area. These incremental increases in study area populations may or may not require the construction of new facilities to meet that added demand. However, the proposed Project does not include a residential component and its objective is to able to provide adequate wastewater treatment capacity to meet City and NAWS growth demands. Consequently, the proposed Project would not directly contribute to any significant cumulative public services impacts.

Recreation

The study area for cumulative recreation impacts includes the City of Ridgecrest. One of the two other related City projects includes a 118-dwelling apartment development which would increase the residential populations in the Project area, which, in turn, could increase use of and demand for park facilities. Neither the wi-fi tower project or the proposed WWTP project would generate demand for recreational activities or park facilities.

The proposed pond expansions at the City Site t could result in the physical deterioration of existing nearby park and recreational facilities if they are no longer considered a desirable recreational use area by the general public due to its proximity to the new ponds .

The proposed Project was also found to potentially create significant impacts to recreation facilities through the conversion of an off-road vehicle park into wastewater treatment ponds; however Mitigation Measure LU-1 is recommended to avoid this potential impact . Because the proposed Project would not directly increase the use of existing park facilities or increase the demand for additional new or expanded facilities, it would not directly contribute to any cumulative recreational facility impacts related to demand.

Therefore, the incremental effects of the proposed Project, after mitigation, together with effects from the other two City projects, would not result in cumulatively considerable impacts with regard to recreational activities or park facility demands. No further mitigation is required.

Transportation

The study area for cumulative recreation impacts includes the City of Ridgecrest. Although there are two related projects planned in the City of Ridgecrest, neither of these will involve the use of the same transportation corridors as the proposed Project or generate significant amounts of traffic at overlapping peak hour times of the day. Additionally, it is unlikely that either will be constructed concurrently with the Project.

Therefore, the incremental effects of the proposed Project, after mitigation, together with effects from the other two City projects, would not result in cumulatively considerable impacts with regard to traffic. No further mitigation is required.

Utilities and Service Systems

The study area for cumulative utilities and service system impacts includes the City of Ridgecrest. The objective of the proposed Project is to improve the WWTP services for the City and NAWS in order to avoid significant and unavoidable impacts related to looming capacity restrictions or potential failure of the plant. However the proposed Project will, in and of itself, also result in *other* significant adverse environmental effects, some of which have been characterized in the DEIR as unavoidable and irreversible, even with mitigation. Given that related City Projects #1 and #2 will also require various utilities and service systems, in particular new residential demand resulting from Project #2, the new apartment development, there is the potential for cumulatively considerable impacts to utilities and service systems.

5 Other Mandatory CEQA Sections

This section discusses additional topics statutorily required by the California Environmental Quality Act (CEQA) be discussed in an EIR. The topics discussed include significant and unavoidable environmental impacts and growth-inducing impacts.

5.1 Significant and Unavoidable Environmental Effects

CEQA Guidelines Section 15126.2(b) requires an environmental impact report (EIR) to discuss unavoidable significant environmental effects, including those that can be mitigated but not to a level less than significance.

Section 15093(a) of the CEQA Guidelines allows the decision-making agency to determine if the benefits of a proposed project outweigh the unavoidable adverse environmental impacts of implementing the project. The City can approve a project with unavoidable adverse impacts if it prepares a "Statement of Overriding Considerations" setting forth the specific reasons for making such a judgment. A list of unavoidable adverse impacts identified in this EIR is provided below.

Hydrology and Water Quality

5.1.1.1 IX-a) Would the Project violate any water quality standards or waste discharge requirements?

Alternatives 1 and 2: **Significant and Unavoidable With Mitigation.** Groundwater, source water, and influent wastewater statistics are expected to remain the same after construction of the new WWTP under either both Alternatives; however, it will differ from the existing facility in several respects. First, it will be designed from the outset for Nitrogen removal. Second, the new plant will perform more effectively in biological oxygen demand (BOD) and total suspended solids (TSS) removal. No disinfection is proposed, except as separately provided by the Navy prior to golf course irrigation, so no specific level of residual bacteria will be targeted.

Implementation of Mitigation Measures **HYD-1 through HYD-3** would reduce the impact, but would not reduce it to a less than significant level. Even with mitigation measures **HYD-1**, **HYD-2**, and **HYD-3**, impacts to Nitrogen and effluent TDS concentration, would still be considered potentially significant.

5.1.1.2 IX-f) Would the Project otherwise substantially degrade water quality?

Alternatives 1 and 2: **Significant and Unavoidable Impact.** As discussed in Impact IX-a, Provost and Pritchard conducted an Antidegradation Study and Water Quality Impact Assessment for the proposed Ridgecrest WWTP improvements (Appendix E).

Beneficial uses of the receiving water will not be impacted by any of the constituents considered, based on the water quality objectives. The poor quality of shallow groundwater means that for all the potential constituents of concern considered, except nitrogen, boron, total dissolved solids, and coliform, the quality of the effluent being percolated is higher than the quality of the groundwater and no degradation will occur. As explained in Impact IX-a, significant and unavoidable impacts will occur at the City site for Nitrogen and at the NAWS golf course for TDS. Mitigation measures **HYD-1**, **HYD-2**, and **HYD-3**, would help to reduce impacts to Nitrogen and effluent TDS concentration. However, impacts would still be considered potentially significant.

5.1.2 Noise

5.1.2.1 XII-a) Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Alternatives 1 and 2: **Potentially Significant - Significant and Unavoidable After Mitigation.** Temporary increases in ambient noise levels would occur during construction of the project. Project construction under either Alternative 1 or 2 would require excavation, cut and fill, rough and finish grading, trench work, forming and pouring concrete forms and foundations, pipe and metal cutting, installation and assembly of equipment, pipes, pumps, valves and mechanical equipment. Construction would also require the use of generators, air compressors and pneumatic powered tools. Construction noise would range from 78dBA to 89dBA.

According to the State of California Governor's Office of Planning and Research 2003 General Plan Guidelines, noise exposure in the 70 to 85 dB range is considered to be "normally unacceptable" and "clearly unacceptable" for residential - low density single family and mobile home areas. Considering that the nearest sensitive receptors are single family residences and the eastern basin site is designated for Rural Living uses, this level of noise from short-term construction would result in a potentially significant impact. Mitigation measures **N-1** and **N-2** are not anticipated to be able to mitigate noise levels to a less than significant level. Therefore, this impact remains **significant and unavoidable**.

5.1.3 Utilities and Service Systems

5.1.3.1 XVII-b) Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Alternatives 1 and 2: **Potentially Significant Impact- Significant and Unavoidable.** The existing WWTP has a permitted capacity of 3.6 mgd by the Lahontan Regional Water Quality Control Board (Regional Board). Alternative 1 or 2 would both serve as a replacement to the existing, outdated, 3.6 mgd capacity wastewater treatment plant. Potential impacts relating to the construction and operation of the proposed Project under both alternatives has been discussed throughout this document. While mitigation is sufficient for many impacts, there are impacts where feasible mitigation could not be identified. Therefore, the proposed Project Alternatives would result in **significant and unavoidable impacts.**

5.2 Growth Inducement

CEQA Guidelines Section 15126 (d), states the following regarding evaluation in the EIR of growth-inducing impact of the proposed Project.

> Growth-Inducing Impact of the Proposed Project. *Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

5.2.1 Growth Inducement Potential

The goals and objectives of the proposed City of Ridgecrest's New Wastewater Treatment Plant (WWTP) is to construct a replacement 3.6 mgd average dry weather flow (4.0 mgd maximum month flow) facility with updated facilities and technology. Fundamental portions of the existing plant process components are deteriorated, and certain conditions may be considered hazardous. Considering the condition of the existing WWTP, it cannot continue to adequately serve the City and NAWS without substantial improvements or replacements. Additionally, the existing WWTP is approaching its permitted capacity of 3.6 million gallons per day (mgd). In 1993, flows reached 3.3 mgd, before population began to decline in the mid 1990s. Current flows through the WWTP average approximately 2.2 mgd; however, growth will cause flows to approach the permitted capacity again.

Implementation of either Alternative 1 or Alternative 2 would provide additional peak capacity within the City's wastewater treatment and disposal system, thus indirectly leading to population growth in the area. Although the headworks component of the Project would be sized to accommodate more expansive future wastewater system, the actual capacity of the Project will be limited by the other components of the system until such time as the future expansion is considered. However, the purpose of the proposed Project is to replace the existing, failing WWTP. This will allow the system to accommodate anticipated growth within both the City and at NAWS China Lake per the City of Ridgecrest General Plan and the NAWS China Lake Comprehensive Land Use Management Plan. Therefore, while population growth and related development may occur as an indirect result of Project implementation, the growth and development has previously been contemplated, and is in fact part of the impetus for the Project. Impacts would be less than significant.

6 Mitigation Monitoring and Reporting Program

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings in Chapter 3 – Impact Analysis - of this Initial Study/Mitigated Negative Declaration (IS/MND) for the New Wastewater Treatment Plant, Alternatives 1 and 2. The MMRP lists mitigation measures recommended for the proposed Project Alternatives and identifies monitoring and reporting requirements and responsible parties.

Table 6-1 presents the mitigation measures identified for the proposed Project Alternative 1 and Table 4-2 presents the mitigation measures identified for proposed Project Alternative 2. Each mitigation measure is numbered with a symbol indicating the topical section to which it pertains, a hyphen, and the impact number. For example, BIO-1 would be the second mitigation measure identified in the Biological Resources analysis of the IS/MND.

The first column of the tables identifies the mitigation measure. The second column, entitled "When Monitoring is to Occur," identifies the time the mitigation measure should be initiated. The third column, "Frequency of Monitoring," identifies the frequency of which the monitoring of the mitigation measure should occur. The fourth column, "Agency Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is properly implemented. The last columns will be used by NKWSD as a check-off tool to ensure that and when individual mitigation measures have been complied with and monitored.

Table 6-1. Alternative 1 Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Aesthetics					
Mitigation Measure AES-1:					
In accordance with the City of Ridgecrest General Plan and Zoning Code, County of San Bernardino General Plan and Zoning Code and the Comprehensive Land Use Management Plan for NAWS China Lake, the proposed Project shall preserve existing natural aesthetic resources (vegetation) and re-establish natural vegetation around each site where feasible, install eco-friendly xeriscape landscaping and gateway features at main facility entrances that are visible from sensitive receptors and public rights-of-way. The City shall prepare professional landscaping and lighting plans for the facility in compliance with the aforementioned land use plans and development codes at the time of building permits.	Prior to Construction/ During Construction/ During Operation		City of Ridgecrest		
Mitigation Measure AES-2:					
Prior to construction of any proposed structures, all proposed lighting shall be indicated on site plans. The lighting plan shall incorporate lighting that directs light pools downward to prevent glare on adjacent and surrounding areas that meet minimum security and safety requirements.	Prior to Construction		City of Ridgecrest		
Air Quality					
Mitigation Measure AQ-1:					
The following measures for the control of construction-generated PM shall be implemented: a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads. b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering	During Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g. worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available. c. Reduce and/or phase the amount of the disturbed area (e.g. grading, excavation) where possible. d. All disturbed areas shall be sufficiently watered or stabilized by an EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available. e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or nearby occupied structures. f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips, g. All active and inactive disturbed surface areas shall be compacted, where feasible. h. Limit equipment and vehicle access to disturbed areas. i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-					

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
blown dust. k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust. l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering. m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114. n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways. o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-out/deposition of soil onto nearby paved roadways. p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available. q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g. portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD. r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints. s. Off-road equipment shall be maintained and properly tuned in accordance					

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
with manufacturer recommendations. t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible. u. Alternatively fueled equipment (e.g. electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available. v. All on-road and off-road equipment shall be fitted with emission control devices (e.g. diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations. w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.					
Mitigation Measure AQ-2:					
An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project Alternatives to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation an appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.	Prior to Operation		City of Ridgecrest		
Biological Resources					
Mitigation Measure BIO-1: Le Conte's Thrasher and Other Nesting Migratory Birds					

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
• **Avoidance.** In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season, or between September 1 and January 31. • **Pre-construction surveys.** If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities. • **Establish buffers.** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.	Prior to Construction		City of Ridgecrest		
Mitigation Measure BIO-2: Desert Tortoise					
• **Pre-construction Surveys.** Pre-construction surveys will be conducted in suitable desert tortoise habitats on the Project Alternative sites prior to the beginning of ground disturbance, construction activities, and/or any Project Alternative activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS Desert Tortoise Field Manual. • **Consultation and Permitting.** Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses) consultation with the USFWS and CDFW will likely result in the requirement of "take authorization" in the form of a Biological Opinion (BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the Project Alternative to lawfully proceed. • **Permit Compliance.** The project applicant will comply with all conditions of a BO and ITP issued for the Project Alternative. Conditions of these permits generally include but are not limited to compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.	Prior to Construction		City of Ridgecrest		
Mitigation Measure BIO-3: Burrowing Owls					
• **Take Avoidance Surveys.** A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction.	Prior to Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of Project Alternative impact areas, where accessible. • **Avoidance of Active Nests.** If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet should be established around all active owl nests. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below. • **Passive Relocation of Resident Owls.** During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development may be relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist. Passive relocation will be the preferred method of relocation.					
Mitigation Measure BIO-4: Mohave Ground Squirrel					
• **Pre-construction Surveys.** Protocol level surveys will be conducted in desert scrub habitats of the Project Alternative site prior to the beginning of ground disturbance, construction activities, and/or any activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's Mohave Ground Squirrel Survey Guidelines (July 2010). The surveys consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Negative results of these surveys are valid for one year. • **Consultation and Permitting.** Survey results will be submitted to the CDFW. Should surveys find Mohave ground squirrel on site, consultation with the CDFW will be required, and likely result in the requirement of "take authorization" in the form of a an Incidental Take Permit (ITP). • **Permit Compliance.** If an ITP is issued for the Project Alternative, the project applicant will comply with all conditions of the ITP. Conditions of this permit generally include but are not limited to compensatory mitigation, a Worker	Prior to Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.					
Mitigation Measure BIO-5: American Badger					
• **Preconstruction Surveys.** A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the Project Alternative sites. • **Avoidance.** Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.	Prior to and During construction		City of Ridgecrest		
Cultural Resources					
Mitigation Measure CR-1:					
If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be ceased and the County of Fresno shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System (CHRIS). The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.	During Construction		City of Ridgecrest		
Mitigation Measure CR-2:					
If human remains are uncovered, or in any other case where human remains are discovered, the Kern or San Bernardino (where applicable) County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public	During Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.					
Hazards and Hazardous Materials					
Mitigation Measure HAZ-1:					
An environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper best management practices implementation, to all field personnel associated with construction activities. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g. identification of potentially hazardous substances) and shall include a review of all site-specific plans. A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the City along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted.	Prior to Construction		City of Ridgecrest		
Mitigation Measure HAZ-2:					
Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the Project's Hazardous Substances Control and Emergency Response Plan. Operation of the pumps and pipelines associated with Alternatives 1 and 2 would not require the storage and use of hazardous materials. The proposed wastewater treatment facility, in either Alternative, would use sodium hypochlorite and alum (aluminum sulfate), both of which are classified as hazardous substances. In addition, small quantities of fuel and related materials would be used and stored as part of Project operations. Appropriate safety measures, such as controlled access and	During Construction and Operation		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
secondary containment, shall be provided. For both Alternatives 1 and 2 this shall include the preparation and implementation of the following Hazardous Materials Business Plan, as detailed in mitigation measure **HAZ-3** below.					
Mitigation Measure HAZ-3:					
During proposed Project Alternative operations, the City shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layouts, and emergency response and notification procedures for a spill or release.	During Operation		City of Ridgecrest		
Hydrology and Water Quality					
Mitigation Measure HYD-1:					
The City shall prepare and implement an irrigated land nutrient management plan for the golf course and alfalfa field irrigation site. This will help insure that nutrients (N), water and fertilizer will be applied at agronomic rates only and thus do not adversely affect groundwater.	During Operation		City of Ridgecrest		
Mitigation Measure HYD-2:					
The City shall prepare and implement a groundwater study at the City site to determine if additional groundwater monitor wells are needed for the long-term assessment of groundwater impacts from the new percolation ponds and construct new monitor wells as indicated and approved by the RWQCB.	During Operation		City of Ridgecrest		
Mitigation Measure HYD-3:					
The City shall construct best practicable treatment and control (BPTC) technology to mitigate impacts from TDS and nitrogen on the shallow groundwater. BPTC is to be determined with the submittal of the anti-degradation analysis per SWRCB Resolution 68-16 in the Report of Waste Discharge submitted for a Waste Discharge Permit.	During Operation		City of Ridgecrest		
Land Use and Planning					
Mitigation Measure LU-1:					
a. **Avoidance.** In order to avoid impacts to parks, prior to final design, the city will make a good faith effort to avoid Park designated areas as construction locates for the effluent disposal ponds. b. **Replacement.** If avoidance is not feasible, the City shall process a General Plan	Prior to Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Amendment to change the land use designation for the 20-acre off-road park to Industrial or Institutional, consistent with the proposed effluent disposal ponds planned for the site. Additionally, the City shall designate new lands for parks and replace the existing off-road vehicle park, like for like, to offset impacts to existing parks.					
Noise					
Mitigation Measure N-1:					
Construction activities shall begin no earlier than 7:00 am and conclude no later than 6:00 pm, Monday through Friday. Construction activities outside of these hours and days may occur only in the event of an emergency.	During Construction		City of Ridgecrest		
Mitigation Measure N-2:					
All construction equipment shall be regularly maintained and equipped with the following noise reduction devices: • The appropriate manufacturer's noise reduction device (s) including muffler (or the equivalent) that is free of rust, holes, and exhaust leaks. • Engine housing shall be kept closed and noise-insulating material shall be mounted on the engine housing to reduce noise, to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust. • Portable compressors, generators, pumps, and other such devices shall be covered with noise-insulating fabric to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust, and shall further reduce noise by operating such devices at lower engine speeds during work to the maximum extent possible. • Construction equipment not actively being utilized shall be turned off. • Vehicle idling on-site shall be limited to 5 minutes. • Reduced-volume backup alarms shall be used for all construction vehicles • Reduced-volume backup alarms shall be used for all construction vehicles, as allowed by OSHA.	During Construction		City of Ridgecrest		
Mitigation Measure N-3:					
Construction activities related to the Proposed Alternatives' wastewater treatment ponds on the City Site shall ensure that the operation of large bulldozers does not occur within a 125 foot buffer of the nearest residence.	During Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Transportation					
Mitigation Measure TR-1:					
During construction, fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.	Prior to and During Construction		City of Ridgecrest		
Mitigation Measure TR-2:					
Prior to the commencement of construction activities, the City shall finalize and pave each access approach. Additionally, the City shall finalize and all-weather surface each onsite access driveway. All access approaches and driveways shall be designed to ensure adequate access and circulation for emergency vehicles.	Prior to and During Construct		City of Ridgecrest		

Table 6-2 MMRP Alternative 2

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Aesthetics					
Mitigation Measure AES-1:					
In accordance with the City of Ridgecrest General Plan and Zoning Code, County of San Bernardino General Plan and Zoning Code and the Comprehensive Land Use Management Plan for NAWS China Lake, the proposed Project shall preserve existing natural aesthetic resources (vegetation) and re-establish natural vegetation around each site where feasible, install eco-friendly xeriscape landscaping and gateway features at main facility entrances that are visible from sensitive receptors and public rights-of-way. The City shall prepare professional landscaping and lighting plans for the facility in compliance with the aforementioned land use plans and development codes at the time of building permits.	Prior to Construction/ During Construction/ During Operation		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure AES-2:					
Prior to construction of any proposed structures, all proposed lighting shall be indicated on site plans. The lighting plan shall incorporate lighting that directs light pools downward to prevent glare on adjacent and surrounding areas that meet minimum security and safety requirements.	Prior to Construction		City of Ridgecrest		
Air Quality					
Mitigation Measure AQ-1:					
The following measures for the control of construction-generated PM shall be implemented: a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads. b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g. worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available. c. Reduce and/or phase the amount of the disturbed area (e.g. grading, excavation) where possible. d. All disturbed areas shall be sufficiently watered or stabilized by an EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available. e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or	During Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
nearby occupied structures. f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips, g. All active and inactive disturbed surface areas shall be compacted, where feasible. h. Limit equipment and vehicle access to disturbed areas. i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust. k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust. l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering. m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114. n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways. o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-					

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
out/deposition of soil onto nearby paved roadways. p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available. q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g. portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD. r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints. s. Off-road equipment shall be maintained and properly tuned in accordance with manufacturer recommendations. t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible. u. Alternatively fueled equipment (e.g. electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available. v. All on-road and off-road equipment shall be fitted with emission control devices (e.g. diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations. w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.					

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure AQ-2:					
An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed Project Alternatives to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation an appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.	Prior to Operation		City of Ridgecrest		
Biological Resources					
Mitigation Measure BIO-1: Le Conte's Thrasher and Other Nesting Migratory Birds					
• **Avoidance.** In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season, or between September 1 and January 31. • **Pre-construction surveys.** If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities. • **Establish buffers.** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.	Prior to Construction		City of Ridgecrest		
Mitigation Measure BIO-2: Desert Tortoise					
• **Pre-construction Surveys.** Pre-construction surveys will be conducted in suitable desert tortoise habitats on the Project Alternative sites prior to the beginning of ground disturbance, construction activities, and/or any Project Alternative activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS Desert Tortoise Field Manual. • **Consultation and Permitting.** Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses) consultation with the USFWS and CDFW will likely result in the requirement of "take authorization" in the form of a Biological Opinion (BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order	Prior to Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
for the Project Alternative to lawfully proceed. • **Permit Compliance.** The project applicant will comply with all conditions of a BO and ITP issued for the Project Alternative. Conditions of these permits generally include but are not limited to compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.					
Mitigation Measure BIO-3: Burrowing Owls					
• **Take Avoidance Surveys.** A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of Project Alternative impact areas, where accessible. • **Avoidance of Active Nests.** If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet should be established around all active owl nests. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below. • **Passive Relocation of Resident Owls.** During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development may be relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist. Passive relocation will be the preferred method of relocation.	Prior to Construction		City of Ridgecrest		
Mitigation Measure BIO-4: Mohave Ground Squirrel					
• **Pre-construction Surveys.** Protocol level surveys will be conducted in desert scrub habitats of the Project Alternative site prior to the beginning of ground disturbance, construction activities, and/or any activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in	Prior to Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
accordance with the CDFW's Mohave Ground Squirrel Survey Guidelines (July 2010). The surveys consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Negative results of these surveys are valid for one year. • **Consultation and Permitting.** Survey results will be submitted to the CDFW. Should surveys find Mohave ground squirrel on site, consultation with the CDFW will be required, and likely result in the requirement of "take authorization" in the form of a an Incidental Take Permit (ITP). • **Permit Compliance.** If an ITP is issued for the Project Alternative, the project applicant will comply with all conditions of the ITP. Conditions of this permit generally include but are not limited to compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.					
Mitigation Measure BIO-5: American Badger					
• **Preconstruction Surveys.** A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the Project Alternative sites. • **Avoidance.** Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.	Prior to and During construction		City of Ridgecrest		
Mitigation Measure BIO-6:					
Preparation of erosion control plan. Prior to the start of construction, an erosion control plan will be prepared, Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. The site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing onsite erosion and the concomitant deposition of sediment in onsite and offsite drainages. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of the erosion control plan will include the following:					

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
i. Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three. ii. Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures 1 above, but they may include any number of additional measures appropriate for this particular site and this particular Project Alternative, including grease traps in parking areas, regular site inspections					
Cultural Resources					
Mitigation Measure CR-1:					
If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within one hundred (100) feet of the find shall be ceased and the County of Fresno shall be notified immediately. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System (CHRIS). The resources shall be photo-documented and collected by the archaeologist for submittal. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding steps have been taken.	During Construction		City of Ridgecrest		
Mitigation Measure CR-2:					
If human remains are uncovered, or in any other case where human remains are discovered, the Kern or San Bernardino (where applicable) County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resources Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendent who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.	During Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Hazards and Hazardous Materials					
Mitigation Measure HAZ-1:					
An environmental training program shall be established to communicate environmental concerns and appropriate work practices, including spill prevention, emergency response measures, and proper best management practices implementation, to all field personnel associated with construction activities. The training program shall emphasize site-specific physical conditions to improve hazard prevention (e.g. identification of potentially hazardous substances) and shall include a review of all site-specific plans. A Hazardous Substance Control and Emergency Response Plan shall be prepared by the contractor. This plan shall be submitted to the City along with the grading permit application for each structure or with the encroachment permit application for the construction of pipelines. The plan shall prescribe hazardous-materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. Furthermore, the plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, shall be permitted.	Prior to Construction		City of Ridgecrest		
Mitigation Measure HAZ-2:					
Oil-absorbent material, tarps, and storage drums shall be used to contain and control any minor releases in construction areas. Emergency spill supplies and equipment shall be kept adjacent to all areas of work and in staging areas, and shall be clearly marked. Detailed information for responding to accidental spills and for handling any resulting hazardous materials shall be provided in the Project's Hazardous Substances Control and Emergency Response Plan. Operation of the pumps and pipelines associated with Alternatives 1 and 2 would not require the storage and use of hazardous materials. The proposed wastewater treatment facility, in either Alternative, would use sodium hypochlorite and alum (aluminum sulfate), both of which are classified as hazardous substances. In addition, small quantities of fuel and related materials would be used and stored as part of Project operations. Appropriate safety measures, such as controlled access and secondary containment, shall be provided. For both Alternatives 1 and 2 this shall include the preparation and implementation of the following Hazardous Materials Business Plan, as detailed in mitigation measure **HAZ-3** below.	During Construction and Operation		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure HAZ-3:					
During proposed Project Alternative operations, the City shall prepare a Hazardous Materials Business Plan for the wastewater treatment facility that would address handling and storage of all hazardous chemicals that would be used during the treatment process. The plan shall address containment, site layouts, and emergency response and notification procedures for a spill or release.	During Operation		City of Ridgecrest		
Hydrology and Water Quality					
Mitigation Measure HYD-1:					
The City shall prepare and implement an irrigated land nutrient management plan for the golf course and alfalfa field irrigation site. This will help insure that nutrients (N), water and fertilizer will be applied at agronomic rates only and thus do not adversely affect groundwater.	During Operation		City of Ridgecrest		
Mitigation Measure HYD-2:					
The City shall prepare and implement a groundwater study at the City site to determine if additional groundwater monitor wells are needed for the long-term assessment of groundwater impacts from the new percolation ponds and construct new monitor wells as indicated and approved by the RWQCB.	During Operation		City of Ridgecrest		
Mitigation Measure HYD-3:					
The City shall construct best practicable treatment and control (BPTC) technology to mitigate impacts from TDS and nitrogen on the shallow groundwater. BPTC is to be determined with the submittal of the anti-degradation analysis per SWRCB Resolution 68-16 in the Report of Waste Discharge submitted for a Waste Discharge Permit.	During Operation		City of Ridgecrest		
Land Use and Planning					
Mitigation Measure LU-1:					
c. **Avoidance.** In order to avoid impacts to parks, prior to final design, the city will make a good faith effort to avoid Park designated areas as construction locates for the effluent disposal ponds. d. **Replacement.** If avoidance is not feasible, the City shall process a General Plan Amendment to change the land use designation for the 20-acre off-road park to Industrial or Institutional, consistent with the proposed effluent disposal ponds	Prior to Construction		City of Ridgecrest		

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
planned for the site. Additionally, the City shall designate new lands for parks and replace the existing off-road vehicle park, like for like, to offset impacts to existing parks.					
Noise					
Mitigation Measure N-1:					
Construction activities shall begin no earlier than 7:00 am and conclude no later than 6:00 pm, Monday through Friday. Construction activities outside of these hours and days may occur only in the event of an emergency.	During Construction		City of Ridgecrest		
Mitigation Measure N-2:					
All construction equipment shall be regularly maintained and equipped with the following noise reduction devices: • The appropriate manufacturer's noise reduction device (s) including muffler (or the equivalent) that is free of rust, holes, and exhaust leaks. • Engine housing shall be kept closed and noise-insulating material shall be mounted on the engine housing to reduce noise, to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust. • Portable compressors, generators, pumps, and other such devices shall be covered with noise-insulating fabric to the extent practical without interfering with the manufacturer's guidelines for engine operation or exhaust, and shall further reduce noise by operating such devices at lower engine speeds during work to the maximum extent possible. • Construction equipment not actively being utilized shall be turned off. • Vehicle idling on-site shall be limited to 5 minutes. • Reduced-volume backup alarms shall be used for all construction vehicles • Reduced-volume backup alarms shall be used for all construction vehicles, as allowed by OSHA.	During Construction		City of Ridgecrest		
Mitigation Measure N-3:					
Construction activities related to the Proposed Alternatives' wastewater treatment ponds on the City Site shall ensure that the operation of large bulldozers does not occur within a 125 foot buffer of the nearest residence.	During Construction		City of Ridgecrest		
Transportation					

Mitigation Monitoring and Reporting Program					
Mitigation Measure/Condition of Approval	**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**
Mitigation Measure TR-1:					
During construction, fences, barriers, lights, flagging, guards, and signs will be installed as determined appropriate by the public agency having jurisdiction, to give adequate warning to the public of the construction and of any dangerous condition to be encountered as a result thereof.	Prior to and During Construction		City of Ridgecrest		
Mitigation Measure TR-2:					
Prior to the commencement of construction activities, the City shall finalize and pave each access approach. Additionally, the City shall finalize and all-weather surface each onsite access driveway. All access approaches and driveways shall be designed to ensure adequate access and circulation for emergency vehicles.					

Appendix A
Notice of Preparation

City of Ridgecrest
100 W. California Avenue
Ridgecrest, CA 93555

This notice is being issued by the City of Ridgecrest and meets Lead Agency noticing requirements for a Notice of Preparation/Intent.

NOTICE OF PREPARATION OF EIR

Date Issued: June 30, 2015

Action: NOP/NOI to prepare an Environmental Impact Report (EIR) for the City of Ridgecrest New Wastewater Treatment Plant

Summary: The City of Ridgecrest is preparing an Environmental Impact Report (EIR) for the City of Ridgecrest's New Wastewater Treatment Plant (WWTP) in compliance with the California Environmental Quality Act (CEQA). A Wastewater Treatment Facility Plan was prepared in 2014 to evaluate two project alternatives that could accommodate existing and future growth within the City and China Lake Naval Air Weapons Station. The EIR will fully evaluate the potential environmental impacts associated with Phase 1 of the two Project Alternatives, as well as the No Project Alternative.

Phase 1 of the New Wastewater Treatment Plant Project would involve the construction and operation of a new 3.6-million-gallon-per-day (MGD) wastewater treatment plant. Phase 2 of the New Wastewater Treatment Plant Project will require upgrades to treat up to 5.4 MGD. Because, there is no timeframe available for the construction of Phase 2, potential environmental impacts resulting from Phase 2 will be evaluated under subsequent environmental documentation.

Dates: Comments concerning the scope of the analysis must be received by July 30, 2015. The Draft EIR is expected in October 2015 and the Final EIR in January 2016.

Addresses: Please send your written comments to:

City of Ridgecrest
Attn: John Bracken, Wastewater Supervisor
100 W. California Avenue
Ridgecrest, CA 93555
or
Email: jbracken@ridgecrest-ca.gov

If applicable, responses should include the name of a contact person at your agency or organization.

For Further Information:

Provost & Pritchard Consulting Group
Attn: Dawn E. Marple, Senior Planner
1800 30th Street, Suite 280
Bakersfield, CA 93301
(661) 616-5900

SUPPLEMENTAL INFORMATION

Project Background:

The existing wastewater treatment plant (WWTP) located on the China Lake Naval Air Weapons Station (NAWS) has been in service for many years and is in need of significant repair to maintain its functionality. Fundamental portions of the plant process components are deteriorated, and certain conditions may be considered hazardous. The WWTP is adequate for water recycling. Considering the condition of the existing WWTP, the existing facility will not continue to adequately serve the City and NAWS without substantial improvements or replacements. Additionally, the existing WWTP has approached its permitted capacity of 3.6 million gallons per day (MGD). In 1993, flows reached 3.3 MGD, before population began to decline in the mid 1990s. Current flows through the WWTP average approximately 2.2 MGD; however, growth will cause flows to approach the permitted capacity again.

Proposed Project Alternatives:
The EIR will fully evaluate the potential environmental impacts associated with Phase 1 of the two Project Alternatives, as well as a No Project Alternative, in compliance with CEQA.

<u>Phase 1</u>

- Alternative 1 would involve the construction and operation of a 3.6-MGD wastewater treatment plant adjacent to the existing WWTP at the China Lake Naval Air Weapons Station (NAWS) site which is located northeast of the intersection of Pole Line Road and Knox Road. This alternative also requires the operation of existing wastewater disposal ponds at the NAWS site and City site, and the construction of additional ponds at the City and San Bernardino County sites which are located south of Church Avenue and west and east San Bernardino Boulevard.
- Alternative 2 would involve the construction and operation of a 3.6-MGD wastewater treatment plant adjacent to the existing WWTP ponds at the City site which is located approximately 1,000 feet south of Church Avenue and 1,000 feet west of San Bernardino Boulevard. This alternative also requires the operation of existing wastewater disposal ponds at the NAWS site and City site, and the construction of additional ponds at the City and San Bernardino County sites which are located south of Church Avenue and west and east San Bernardino Boulevard.
- The No Project Alternative involves the continued operation of the existing wastewater treatment plant and wastewater disposal ponds which are located at the NAWS and City sites.

The construction and operation of a 3.6-MGD wastewater treatment plant would generally involve the following facilities:

- Influent pumps and headworks and screening facilities
- Aeration basins and clarifiers

- Bio-solids handling facilities
- Bio-solids digestion
- Solids dewatering facilities
- Wastewater percolation/ evaporation ponds
- Construction of new wastewater treatment ponds for storage and percolation/evaporation
- Emergency power
- Operations buildings, maintenance building, and electrical/boiler building
- Various site improvements (including paved access roads, parking areas, security fencing, storm drains, gravel surfacing, and related improvements)

Disposal of treated effluent would potentially involve the following methods:

- Evaporation and percolation using existing and new ponds at the NAWS and City sites.
- Alfalfa irrigation with secondary effluent at the City site.
- Golf course and other landscaping irrigation using recycled water meeting Title 22 standards for unrestricted use.

Phase 2 of the New Wastewater Treatment Plant Project will require upgrades to treat up to 5.4 mgd. As there is currently no timeline for the construction of Phase 2, potential environmental impacts resulting from Phase 2 will be evaluated under subsequent environmental documentation.

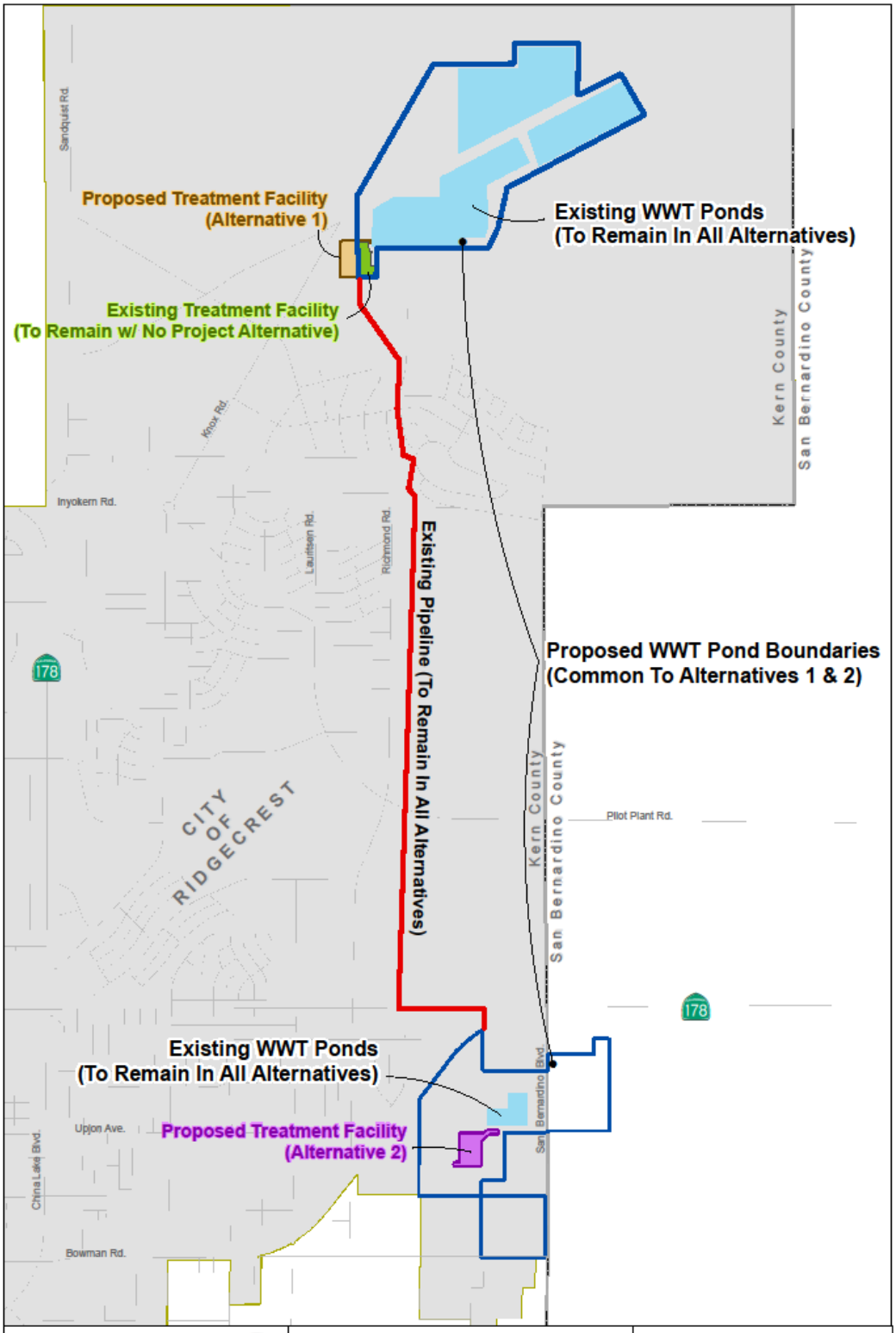
Potential Environmental Impacts:

The EIR will fully analyze potential environmental impacts associated with Phase 1 of the Proposed Project Alternatives. Specific areas of analysis will include all resource categories included in Appendix G to the California Environmental Quality Act (CEQA) Guidelines, as follows: aesthetics, agricultural resources, air quality, greenhouse gases and global climate change, biological resources, cultural resources, geology and soils, hazards, hydrology and water quality, land use, mineral resources, noise, population and housing, public services, recreation, transportation and traffic, and utilities and service systems.

If you believe that any of the Proposed Project Alternatives could result in specific significant impacts, we invite you to describe the nature of those impacts, as well as offer feasible and reasonable mitigation for such impacts that should be considered in the EIR.

Scoping Process:

This NOP initiates the scoping process, which guides the development of the EIR. It is important that reviewers provide their comments at such times and in such a manner that they are useful in the lead agency's preparation of this EIR. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and comments regarding the potential environmental impacts that may result from the Proposed Project. Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this Proposed Project. Comments submitted anonymously will also be accepted and considered.


Proposed Treatment Facility
(Alternative 1)
Existing WWT Ponds
(To Remain In All Alternatives)
Existing Treatment Facility
(To Remain w/ No Project Alternative)
Existing Pipeline (To Remain In All Alternatives)
Proposed WWT Pond Boundaries
(Common To Alternatives 1 & 2)
Existing WWT Ponds
(To Remain In All Alternatives)
Proposed Treatment Facility
(Alternative 2)
Sandquist Rd.
Knox Rd.
Inyokern Rd.
Lauritsen Rd.
Richmond Rd.
Pilot Plant Rd.
Upjon Ave.
China Lake Blvd.
San Bernardino Blvd.
Bowman Rd.
Kern County
San Bernardino County
CITY OF RIDGECREST
178
0 1,000 2,000 Feet
PROVOST& PRITCHARD
286 W. Cromwell Ave.
Fresno, CA 93711-6162
(559) 449-2700
Proposed WWT Pond Boundaries (Alts. 1 & 2)
Existing Treatment Facility (No Project Alt.)
Proposed Treatment Facility (Alt. 1)
Proposed Treatment Facility (Alt. 2)
Ridgecrest City Limits
Proposed Alternatives
WWTP Project Sites
City of Ridgecrest
June 2015
8/26/2015 : G:\Ridgecrest_City of-2030\203010B1-Ridgecrest City Advisor-WWTP\GIS\T5-CEQA\MAP\Topo_North_and_South_REVISED.mxd

Recommended Distribution List for This Notice:

- State Clearinghouse of the Governor's Office of Planning and Research
- City of Ridgecrest
    - Planning
    - Public Works
    - City Manager
    - City Attorney
    - Planning Commission
    - City Council
- U.S. Environmental Protection Agency
- China Lake Naval Air Weapons Station – United States Department of Defense (Navy)
- Kern County Planning Department
- Kern County Airport Land Use Commission
- Kern County Local Agency Formation Commission
- Kern County Council of Governments
- San Bernardino County
- San Bernardino Local Agency Formation Commission
- Regional Water Quality Control Board – Region 6, Lahontan
- State Water Resources Control Board
- East Kern Air Pollution Control District
- California Department of Fish and Wildlife
- U.S. Fish & Wildlife Service
- U.S. Army Corps of Engineers
- U.S. Bureau of Reclamation
- Native American Heritage Commission
- Kern-Kaweah Chapter of the Sierra Club
- Kerncrest Chapter of the Audubon Society

Notice of Preparation
Comments Received

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, CA 93710
(559) 243-4005
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

July 28, 2015

John Bracken
City of Ridgecrest
100 West California Avenue
Ridgecrest, California 93555

Subject: Notice of Preparation (NOP) for the New Wastewater Treatment Plant Draft Environmental Impact Report (EIR), SCH No. 2015061095

Dear Mr. Bracken:

The California Department of Fish and Wildlife (Department) has reviewed the NOP submitted by the City of Ridgecrest (City) for the above Project. The Project would involve the construction and operation of a new 3.6-millon-gallon-per-day (MGD) wastewater treatment plant (WWTP). In 2014, a Wastewater Treatment Facility Plan was prepared to evaluate two (2) Project alternatives that could accommodate existing and future growth within the City and China Lake Naval Air Weapons Station.

In Alternative 1, the new WWTP would be constructed adjacent to the existing WWTP at the China Lake Naval Air Weapons Station, which is located northeast of the intersection of Pole Line Road and Knox Road. This alternative would also require the operation of the existing City wastewater disposal ponds and those on the China Lake Naval Air Weapons Station, as well as the construction of additional ponds at the City and San Bernardino County sites. These new ponds would be located south of Church Avenue and west and east of San Bernardino Boulevard.

In Alternative 2, the new WWTP would be constructed adjacent to the existing WWTP ponds at the City site which is located approximately 1,000 feet south of Church Avenue and 1,000 feet west of San Bernardino Boulevard. This alternative would also require the operation of the existing City wastewater disposal ponds and those on the China Lake Naval Air Weapons Station, as well as the construction of additional ponds at the City and San Bernardino County sites, as described above.

The Department recognizes that the City has determined that implementation of the proposed Project could result in impacts to native vegetation and/or sensitive biological resources potentially present in the Project sites, and impacts will be further analyzed in the draft EIR prepared for the Project. This letter is intended to provide early guidance to assist the City and the Project biologists regarding Department concerns and recommended Project avoidance, minimization, and mitigation measures to be included in the draft EIR.

The Department is concerned that construction activities could result in impacts to special-status species known to occur in close proximity and/or on the proposed Project sites including, but not limited to, nesting birds; the State and federally endangered Mohave tui chub (*Siphateles bicolor mohaensis*); the State and federally threatened desert tortoise (*Gopherus agassizii*); the State threatened Mohave ground squirrel (*Xerospermophilus mohavensis*); the State Species of Special Concern burrowing owl (*Athene cunicularia*), American badger (*Taxidea taxus*), and Le Conte's thrasher (*Toxostoma lecontei*); the State protected furbearing mammal desert kit fox (*Vulpes macrotis* ssp. *macrotis*); and the California Rare Plant Rank 1B.2 Clokey's crypthantha (*Cryptantha clokeyi*).

The proposed Project sites include areas that have appropriate habitat for nesting, denning, foraging, or colonization opportunities for the above species; therefore, a reconnaissance-level assessment of the Project sites conducted by a qualified wildlife biologist and a qualified botanist is warranted. In the event that burrows, dens, and/or vegetation that could support special-status species are present within or immediately adjacent to the Project sites, focused biological surveys then need to be conducted by qualified biologists during the appropriate survey period(s) and prior to Project approval by the City to determine if these species are present and if they could be impacted by the proposed Project. Survey results can then be used to inform any mitigation, minimization, and avoidance measures to be included in the draft EIR prepared for this Project and any potential permitting needs. We recommend that our suggested avoidance and minimization measures be included in the draft EIR as enforceable mitigation measures as appropriate. Our comments follow.

Department Jurisdiction

Trustee Agency Authority: The Department is a Trustee Agency with responsibility under California Environmental Quality Act (CEQA) for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used under CEQA (Division 13 [commencing with Section 21000] of the Public Resources Code).

Responsible Agency Authority: The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or endangered, pursuant to Fish and Game Code Section 2081. If the Project could result in the take of any species listed as threatened or endangered under the California Endangered Species Act (CESA), the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a

project is likely to substantially impact threatened or endangered species (sections 21001(c), 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080. The Project has the potential to reduce the number or restrict the range of endangered, rare, or threatened species (as defined in Section 15380 of CEQA).

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15380), it should be fully considered in the environmental analysis for the Project.

Bird Protection: The Department has jurisdiction over actions that could result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs, and nests include sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Protected Furbearing Mammals: The Department has jurisdiction over furbearing mammals pursuant to Title 14, California Code of Regulations, Section 460. This Section states, "Fisher, marten, river otter, desert kit fox and red fox may not be taken at any time"; therefore, the Department cannot authorize their take.

Lake or Streambed Alteration (LSA): The Department also has regulatory authority with regard to activities occurring in streams and/or lakes that could adversely affect any fish or wildlife resource, pursuant to Fish and Game Code sections 1600 *et seq*. If a Project could substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake, notification of the lake or streambed alteration to the Department is required. If Project activities could impact any water feature, the Department recommends that Project proponents consult with the Lake and Streambed Alteration Program before ground-breaking activities and submit a Notification of Lake or Streambed Alteration to the Department, to comply with Fish and Game Code section 1602. It is important to note that the Department is required to comply with CEQA in the issuance of an LSA Agreement. Therefore, for efficiency in environmental compliance, the Department recommends that the stream disturbance be described, and mitigation for the

disturbance be developed as part of the environmental review process. This will reduce the need for the Department to require extensive additional environmental review to issue an LSA Agreement. For additional information on notification requirements, please contact staff in the Lake and Streambed Alteration Program at (559) 243-4593.

Water Pollution: Pursuant to Fish and Game Code Section 5650, it is unlawful to deposit in, permit to pass into, or place where it can pass into the "Waters of the State" any substance or material deleterious to fish, plant life, or bird life, including non-native species. The Department recommends that the draft EIR fully address potential pollutants to Waters of the State in the environmental analysis for the Project. The Regional Water Quality Control Board also has jurisdiction regarding discharge and pollution to Waters of the State including storm water runoff into surface waters.

Potential Project Impacts and Recommendations

Desert Tortoise: The proposed Project sites are within desert tortoise range and have areas that contain suitable habitat for the species. The Department recommends that surveys be performed by qualified biologists during the appropriate survey period following the protocol contained in "Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*)" (USFWS 2010). The Department advises that survey results be submitted to both the Department and the United States Fish and Wildlife Service (USFWS). Consultation with the Department and the USFWS to develop avoidance, minimization, and mitigation measures is recommended if surveys indicate the presence or potential presence of desert tortoise. If take could occur as a result of Project implementation, acquisition of a State ITP may be warranted prior to initiating ground-disturbing activities.

The Department also recommends consulting with the USFWS on potential impacts to federally listed desert tortoise. Take under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; take under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of Project implementation.

Mohave Ground Squirrel (MGS): MGS have been documented within the Alternative 1 Project site and in close proximity to the Alternative 2 Project site (CDFW 2015). In order to implement full avoidance for MGS, the Department recommends that a 50-foot no-disturbance buffer be employed around all burrows that could be used by MGS. If this is not feasible, the Department advises that a qualified permitted biologist conduct protocol surveys for MGS following the methods described in the "Mohave Ground Squirrel Survey Guidelines" (CDFG 2003) at all Project-related impact areas during the appropriate survey season prior to Project implementation. The Department recommends that the results of the MGS surveys be submitted to the

Department, and that consultation with the Department occurs to develop avoidance, minimization, and mitigation measures. If take could occur as a result of Project implementation, acquisition of a State ITP may be warranted prior to initiating ground-disturbing activities. Alternatively, the Project applicant has the option of assuming presence for this species and securing a State ITP, which would authorize incidental take of State-listed species during Project implementation.

Burrowing Owl: Burrowing owls have been documented adjacent to the Alternative 1 Project site and in close proximity to the Alternative 2 Project site (CDFW, 2015). To avoid impacts to the species, the Department recommends that focused surveys be conducted following the survey methodology developed by the California Burrowing Owl Consortium (CBOC 1993) well in advance of any ground disturbance associated with Project construction as well as a 10-day prior to disturbance pre-construction survey effort. If any ground-disturbing activities will occur during the burrowing owl nesting season (approximately February 1 through August 31), and potential burrowing owl burrows are present within the Project footprint, implementation of avoidance measures are warranted. In the event that burrowing owls are found, the Department's "Staff Report on Burrowing Owl Mitigation" (CDFG 2012) (Staff Report) recommends that impacts to occupied burrows be avoided by implementation of no-disturbance buffer zones, unless a qualified biologist approved by the Department verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

Failure to implement the recommended buffer zones could cause adult burrowing owls to abandon the nest, cause eggs or young to be directly impacted (crushed), and/or result in reproductive failure, in violation of Fish and Game Code and the Migratory Bird Treaty Act.

If the Project proponent proposes to evict burrowing owls that may be present, the Department recommends passive relocation during the non-breeding season. We recommend that the draft EIR describe all avoidance measures that would be employed in the event that owls are found on the Project sites, as well as methods that would be used to evict owls from burrows. We also recommend that the draft EIR specify how the impact of evicting owls would be mitigated to a less than significant level. The Staff Report recommends that foraging habitat be acquired and permanently protected to

offset the loss of foraging and burrow habitat. The Department also recommends replacement of occupied burrows with artificial burrows at a ratio of 1 burrow collapsed to 1 artificial burrow constructed (1:1) as mitigation for the potentially significant impact of evicting a burrowing owl if a biologist knowledgeable with the biology and natural history of the species determines that suitable burrows are a potential limiting factor for the species.

Protected Furbearing Mammals: The proposed Project sites are within desert kit fox range and have areas that provide habitat for the species; as such, the Project has the potential to impact this species. The desert kit fox is protected under Title 14, California Code of Regulations, Section 460, which prohibits take of the species at any time. The Department recommends that the avoidance measures within the USFWS "Standardized recommendations for protection of the San Joaquin kit fox prior to or during ground disturbance" (2011) be followed and that surveys be conducted accordingly and prior to commencing any Project-related ground-disturbing activities. If any active or potential dens are found on the Project sites during these surveys, consultation with the Department would be warranted for guidance on take avoidance measures for the desert kit fox.

Special-Status Plant Species: There is potential for multiple special-status plant species to occur on or adjacent to the Project sites. The Department recommends that the Project sites be surveyed for special-status plants by a qualified botanist following the "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" (CDFG 2009). This protocol, which is intended to maximize detectability, includes the identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. In the absence of protocol-level surveys being performed, additional surveys might be necessary. Further, the Department recommends that special-status plant species be avoided whenever possible by delineation and observing a no-disturbance buffer of at least 50 feet from the outer edge of the plant population(s) or specific habitat type(s) required by special-status plant species. If buffers cannot be maintained, then consultation with the Department may be warranted to determine appropriate minimization and mitigation measures for impacts to special-status plant species. If a State- or federally listed plant species is identified during botanical surveys, it is recommended that consultation with the Department and/or the USFWS be conducted to determine permitting needs.

Nesting Birds: The trees, shrubs, and grasses within and in the vicinity of the Project sites likely provide nesting habitat for songbirds and raptors. The Department encourages Project implementation to occur during the non-nesting bird season. If ground-disturbing activities must occur during the breeding season (February through mid-September), the Project applicant is responsible for ensuring that implementation of the Project does not result in any violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above. Prior to work commencing, including

staging, clearing, and grubbing, the Department recommends that surveys for active nests be conducted by a qualified wildlife biologist no more than 10 days prior to the start of the Project commencing and that the surveys be conducted in a sufficient area around the work site to identify any nests that are present and to determine their status. A sufficient area means any nest within an area that could potentially be affected by the Project. In addition to direct impacts, such as nest destruction, nests might be affected by noise, vibration, odors, and movement of workers or equipment. Identified nests should be continuously surveyed for the first 24 hours prior to any construction-related activities to establish a behavioral baseline. Once work commences, all nests should be continuously monitored to detect any behavioral changes as a result of the Project. If behavioral changes are observed, the work causing that change should cease and the Department consulted for additional avoidance and minimization measures.

The Department also recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500 foot no-disturbance buffer around the nests of non-listed raptors until the breeding season has ended, or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no-disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the Project area would be concealed from a nest site by topography. Any variance from these buffers is advised to be supported by a qualified wildlife biologist and it is recommended the Department be notified in advance of implementation of a no disturbance buffer variance.

More information on survey and monitoring protocols for sensitive species can be found at the Department's website (www.dfg.ca.gov/wildlife/nongame/survey_monitor.html). If you have any questions on these issues, please contact Reagen O'Leary, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 243-4014, extension 244, or by electronic mail at Reagen.OLeary@wildlife.ca.gov.

Sincerely,

Dean Marston
for Acting Regional Manager

cc: Ray Bransfield
United States Fish and
Wildlife Service
2493 Portola Road, Suite B
Ventura, California 93003

Literature Cited

CBOC, 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. California Burrowing Owl Consortium, April 1993.

CDFG, 2003. Mohave Ground Squirrel Survey Guidelines. California Department of Fish and Game, January 2003.

CDFG. 2009. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities. California Department of Fish and Game, November 2009.

CDFG, 2012. Staff Report on Burrowing Owl Mitigation. California Department of Fish and Game.

CDFW, 2015. California Natural Diversity Database (gov ed) [ds 45]. Retrieved March 4, 2015 from BIOS Viewer 5.16.14. http://www.dfg.ca.gov/biogeodata/bios/

USFWS, 2010. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*).

USFWS, 2011. Standard Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance. United States Fish and Wildlife Service.

California Water Boards

Edmund G. Brown Jr.
Governor

Matthew Rodriquez
Secretary for
Environmental Protection

Lahontan Regional Water Quality Control Board

July 23, 2015

File: Environmental Doc Review
Kern County, 6B150116001

John Bracken, Wastewater Supervisor
100 W. California Avenue
Ridgecrest, CA 93555
Email: jbracken@ridgecrest-ca.gov

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE CITY OF RIDGECREST NEW WASTEWATER TREATMENT FACILITY, CITY OF RIDGECREST, STATE CLEARINGHOUSE NO. 2014051091, KERN COUNTY

The California Regional Water Quality Control Board, Lahontan Region (Water Board) staff received the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the City of Ridgecrest (City) Project on July 2, 2015. The NOP was prepared by the Provost & Pritchard Consulting Group on behalf of the City and submitted in compliance with provisions of the California Environmental Quality Act (CEQA).

PROJECT DESCRIPTION

The existing City wastewater treatment / water reclamation plant is located on China Lake Naval Air Weapons Station (NAWS) and treats sewage collected from both the City and naval base. The Ridgecrest Wastewater Treatment Facility, the Ridgecrest Reclamation Irrigation site, and the Biosolids site are all currently regulated separately under the existing Board Order Nos. and WDID Nos.

WDID No.	Site Name	Board Order No.
6B150116001	Ridgecrest Wastewater Treatment Facility	R6V-2000-056
6B159101001	Biosolids Site	00-10-DWQ
6B159101002	Ridgecrest Reclamation Irrigation Site	R6V-93-0086

The Reclamation Irrigation site has recently failed to provide coliform data, and exceeded flow limitations back in 2009. Around the Ridgecrest Wastewater Treatment Facility, groundwater has currently exceeded secondary maximum contaminant level (MCLs) for Total Dissolved Solids, and the related constituents, chloride and electrical conductivity.

Outdated infrastructure and current demands have shown that the current capacity of 3.6 million gallons per day (MGD) may be insufficient to meet the City's needs. The City

plans to prepare a DEIR that will evaluate the potential environmental impacts associated with Phase 1 of the three following Project alternatives:

1. Alternative 1 - Construct and operate a 3.6 MGD wastewater treatment plant adjacent to the existing wastewater treatment plant located on the NAWS in conjunction with using the existing wastewater disposal ponds at the NAWS and constructing additional ponds near the City's agricultural field south of Church Avenue and on both sides of San Bernardino Boulevard.
2. Alternative 2 - Construct and operate a new 3.6 MGD wastewater treatment plant adjacent to the former wastewater treatment plant site south of Church Avenue and west of San Bernardino Boulevard in conjunction with the disposal ponds at NAWS and the City site.
3. Alternative 3 - No Project Alternative to continue operation of the existing wastewater treatment plant and disposal ponds.

Phase 2 of the New Wastewater Treatment Plant would upgrade and expand the plant capacity to 5.4 MGD. There is currently no timeline for Phase 2. Therefore the planned DEIR would not evaluate impacts associated with Phase 2.

Water Board staff, acting as a responsible agency, is providing these comments to specify the scope and content of the environmental information germane to our statutory responsibilities pursuant to CEQA Guidelines, California Code of Regulations (CCR), title 14, section 15096. We encourage the City to consider our comments in an effort to protect waters of the State and maintain water quality in the Lahontan Region.

WATER BOARD'S AUTHORITY

All groundwater and surface waters are considered waters of the State. Surface waters include streams, lakes, ponds, and wetlands, and may be ephemeral, intermittent, or perennial. All waters of the State are protected under California law. State law assigns responsibility for protection of water quality in the Lahontan Region to the Lahontan Water Board. Some waters of the State are also waters of the U.S. The Federal Clean Water Act (CWA) provides additional protection for those waters of the State that are also waters of the U.S. In the Indian Wells Valley, Water Board staff believes it is unlikely there are federal waters of the U.S. present.

RECYCLED WATER USES

The State Water Resources Control Board adopted the Recycled Water Policy in February 2009 (effective May 14, 2009, and amended January 22, 2013, Resolution Nos. 2009-0011 and 2013-0003, respectively). The purpose of the policy is to increase the use of recycled water from municipal wastewater sources, in a manner that implements state and federal water quality laws, as a means towards achieving sustainable local water supplies. The Recycled Water Policy establishes goals and mandates for recycled water use. The mandates are to increase the use of recycled water from the amount used over 2002 levels by one million acre-feet per year by 2020

and by two million acre-feet per year by 2030. Incentives for implementing recycled water projects include grant opportunities and priority funding.

In July 2009, the State Water Resources Control Board adopted General Waste Discharge Requirements (WDRs) for Landscape Irrigation Uses of Municipal Recycled Water WQO-2009-0006-DWQ (General Permit). For those eligible, the General Permit allows the use of recycled water for landscape irrigation. Approved uses include the following: parks, greenbelts, and playgrounds; school yards; athletic fields; golf courses; cemeteries; commercial and industrial landscaping; and freeway, highway, and street landscaping. Recycled water uses for residential landscaping are generally not allowed under this General Permit, but will be considered by the Water Board on a case-by-case basis.

There is also General WDRs for Recycled Water Use WQO-2014-0090-DWQ which regulates the use of recycled water (treated wastewater) by having either a recycled water producer or an area administrator interact/regulate with the users of recycled Water (permitees). The Order regulates the producers or administrators of recycled water.

The City is encouraged to consider the use of recycled water as an implementation strategy in their Plan. Current and future recycled water projects should be identified and evaluated in the DEIR. Division of Drinking Water criteria of CCR, title 22 apply. An approved Engineering Report by Division of Drinking Water is required and Individual or General Recycled Water Requirements issued by the Water Board.

BASIN PLAN

The *Water Quality Control Plan for the Lahontan Region* (Basin Plan) contains policies that the Water Board uses with other laws and regulations to protect the quality of waters of the State within the Lahontan Region. The Basin Plan sets forth water quality standards for surface water and groundwater of the Region, which include designated beneficial uses as well as narrative and numerical objectives which must be maintained or attained to protect those uses. The Basin Plan can be accessed via the Water Board's web site at:
http://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/references.shtml.

BENEFICIAL USES

We request that the DEIR identify and specifically list each beneficial use of surface and groundwater resources at each alternative location within the Project area. An analysis of the potential impacts to water quality with respect to those beneficial uses must be included in the DEIR, and alternatives to avoid those impacts should be considered. The environmental document should summarize the measures taken to avoid and minimize environmental impacts, both permanent and temporary, for each Project alternative evaluated.

Beneficial uses of surface waters for the China Lake Hydrologic Area (Department of Water Resources Unit No. 624.20) are listed in Chapter 2, Table 2-1, of the Basin Plan. Beneficial uses for groundwater of the Indian Wells Valley (Department of Water Resources Basin No. 6-54) are listed in Chapter 2, Table 2-2, of the Basin Plan. Note that the Water Board recently removed the municipal and domestic supply (MUN) use from selected areas of the Indian Wells Valley. See: http://www.waterboards.ca.gov/lahontan/board_decisions/adopted_orders/2015/docs/r6v_2015_0005.pdf

The Project site is near Lark Seep, an ephemeral stream, and the China Dry Lake playa within the Indian Wells Hydrologic Unit of the Lahontan Region. Project impacts to the endangered Mojave Tui Chub within Lark Seep should be evaluated in the DEIR. Specific mitigation measures must be identified that, when implemented, minimize unavoidable impacts to a less than significant level to ensure that no net loss of function and value will occur as a result of Project implementation. The DEIR should identify the water quality standards that could potentially be violated by the Project and use these standards when evaluating thresholds of significance for Project impacts.

GROUNDWATER DEGRADATION ANALYSIS

The DEIR must evaluate the resulting groundwater degradation associated with each Project alternative as prescribed by the California Water Code section 13241 and State Board Resolution 68-16, such that: "any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet WDRs which will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained."

Monitoring and analysis should be performed to establish existing background water quality and an assimilative capacity analysis should be for all identified constituents of concern. During this analysis, the City should identify "Past, present, and probable future beneficial uses of water." The analysis should factor in "Water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area."

The City/Discharger should consider how the discharge area should be monitored for degradation, and an anti-degradation analysis conducted by the Discharger should state how the present and planned discharges will prevent degradation to the groundwater to levels that would adversely affect the beneficial uses of groundwater. Degradation analysis should evaluate the effects on groundwater quality with no nitrogen removal at the wastewater treatment plant for all alternatives.

Additionally, if groundwater degradation is identified that may impair the beneficial uses, the Discharger will be required, to produce a plan to prevent impairment of the beneficial uses and/or remediate any groundwater impairment.

DREDGE/FILL IMPACTS

In areas where US Army Corps of Engineers (USACE) does not take jurisdiction, the Water Board generally delineates waters of the State based on distinct geomorphic flow indicators with or without clearly definable bed and bank features. In particular, the presence or absence of traditionally "riparian vegetation" is typically not a reliable indicator of riparian zones in arid regions of California (e.g. Lark Seep). In these areas, often times the upland and riparian zones have similar vegetative communities with only subtle differences in plant density or species distribution serving as key indicators of riparian functions.

In determining appropriate mitigation ratios for impacts to waters of the State, Water Board staff considers Basin Plan requirements (minimum 1.5:1 mitigation ratio for impacts to wetlands) and utilizes 12501-SPD Regulatory Program Standard Operating Procedure for Determination of Mitigation Ratios, published December 2012 by the USACE, South Pacific Division.

Obtaining a permit and conducting monitoring does not constitute adequate mitigation. Development and implementation of acceptable mitigation is required. The environmental document must specifically describe the best management practices and other measures used to mitigate Project impacts.

HYDROMODIFICATION

Hydromodification is the alteration of the natural flow of water through a landscape (i.e. pond constructions, lining pond lining channels, etc.). Disturbing and compacting soils, changing or removing the vegetation cover, increasing impervious surfaces, and altering drainage patterns limit the natural hydrologic cycle processes of absorption, infiltration, and evapotranspiration, and increases the volume and frequency of runoff and sediment transport.

The preferred project guidelines set forth by the City should include maintaining natural drainage paths ephemeral streams within the planning area and establishing buffers and setback requirements to protect channels and floodplain areas from encroaching development. Information regarding hydromodification can be accessed online at: http://www.swrcb.ca.gov/water_issues/programs/stormwater/hydromodification.shtml.

PERMITTING REQUIREMENTS

A number of activities associated with Plan implementation projects may have the potential to impact waters of the State and, therefore, may require permits issued by either the State Water Resources Control Board (State Water Board) or Lahontan Water Board. The required permits may include:

1. Revised (for Alternative 1), or new (For Alternative 2) WDRs issued by the Water Board. A Form 200 with supporting technical information must be submitted at least 140 days prior to discharge. http://www.swrcb.ca.gov/publications_forms/forms/docs/form200.pdf,

2. Recycled water use for landscape irrigation may require General WDRs for Landscape Irrigation Uses of Municipal Recycled Water, WQO 2009-0006-DWQ, issued by the Lahontan Water Board, and

3. Streambed alteration and/or discharge of fill material to a surface water, including water diversions, may require a CWA, section 401 water quality certification for impacts to federal waters (waters of the U.S.), or dredge and fill WDRs for impacts to non-federal waters, both issued by the Lahontan Water Board.

We request that the DEIR recognize the potential permits that may be required, as outlined above, and identify the specific activities that may trigger these permitting actions in the appropriate sections of the environmental document. Information regarding these permits, including application forms, can be downloaded from our web site at http://www.waterboards.ca.gov/lahontan/.

Thank you for the opportunity to comment on the NOP. If you have any questions regarding this letter, please contact me at (760) 241-3408 cephas.hurr@waterboards.ca.gov, or Jehiel Cass at (760) 241-2434 jehiel.cass@waterboards.ca.gov.

Cephas Hurr
Water Resources Control Engineer

cc: Michael Stoner, China Lake Navy Air Weapons Station (michael.stoner@navy.mil)
State Clearinghouse (state.clearinghouse@opr.ca.gov)
Jehiel Cass, Lahontan Water Board (jehiel.cass@waterboards.ca.gov)

R:\RB6\RB6Victorville\Shared\Units\JAY's UNIT\Cephas\Response to NOP_6B150116001 Ridgecrest WTF

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www.SBCounty.gov

SAN BERNARDINO COUNTY

Department of Public Works
Environmental & Construction • Flood Control
Operations • Solid Waste Management
Surveyor • Transportation

Gerry Newcombe
Director

July 30, 2015

File: 10(ENV)-4.01

City of Ridgecrest
Attn: John Bracken, Wastewater Supervisor
100 W. California Avenue
Ridgecrest, CA. 93555
jbracken@ridgecrest-ca.gov

RE: CEQA – NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR A NEW WASTEWATER TREATMENT PLANT FOR THE CITY OF RIDGECREST

Dear Mr. Bracken:

Thank you for giving the San Bernardino County Department of Public Works the opportunity to comment on the above-referenced project. **We received this request on June 29, 2015,** and pursuant to our review, we have no comments. When the Draft Environmental Impact Report becomes available, please send it for our review.

Sincerely,

NIDHAM ARAM ALRAYES, MSCE, PE, QSD/P
Public Works Engineer III
Environmental Management

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Registered Letters

Notice of Preparation Mailing List

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1234 E Shaw Avenue
Fresno, CA 93710

San Bernardino Public Works
825 East Third Street
San Bernardino, CA 92415

Kern County LAFCO
5300 Lennox Avenue, Suite 303
Bakersfield, CA 93309

City of Ridgecrest-Planning Commission
100 W California Avenue
Ridgecrest, CA 93555

Native American Heritage Commission
1550 Harbor Blvd. Ste 100
West Sacramento, CA 95691

US Env Protection Agency
915 Wilshire Blvd. Ste 1460
Los Angeles, CA 90017

Calif. Dept Fish & Game
3602 Inland Empire Blvd. Ste C-220
Ontario, CA 91764

San Bernardino LAFCO
215 North D Street, Ste 204
San Bernardino, CA 92415-0490

Kern County COG
1401 19th Street, Ste 300
Bakersfield, CA 93301

SRWCB
PO Box 100
Sacramento, CA 95812-0100

US Fish & Wildlife Service
2800 Cottage Way, Rm W-2606
Sacramento, CA 95825-1846

US Bureau of Reclamation
PO Box 61470
Boulder City, NV 89006-1470

Kern-Kaweah Chapter of Sierra Club
Box 3357
Bakersfield, CA 93385-3357

FEAD China Lake Bldg. 00978
STOP 4006, RM 1 NAWS
China Lake, CA 93555

Chris Uetz
324 Locust St
Ridgecrest. CA 93555

Robert & Melissa Ribley
13061 Arbor Lane
Grass Valley, CA 95949

Daniel Trygstad
1601 E Bowman Rd
Ridgecrest, CA 93555

Jacqueline and Mitchell Swan
1020 Brockton Lane
Ventura, CA 93001

Indian Wells Cemetary
216 S Norma
Ridgecrest, CA 93555

Robert & Tammy Kinnan
320 S Locust Street
Ridgecrest, CA 93555

Joe Haberman
PO Box 1090
Ridgecrest, CA 93555

Kern County Planning
Public Services Building
2700 M Street, Ste 100
Bakersfield, CA 93301-2370

Mark Bennett
1738 E Bowman
Ridgecrest, CA 93555

Frank Vanover
908 Madera St
Maricopa, CA 93252

Eugene Edwards
1800 E Radar Road
Ridgecrest, CA 93555

Ernest Ammerman
PO Box 626
Trona, CA 93562

Javier Lugo
990 S Lamb Rd
Ridgecrest, CA 93555

Sierra Auto Recycling
401 Inyokern Road
Ridgecrest, CA 93555

James Kichak
688 San Bernardino Road
Ridgecrest, CA 93555

Earl and Pauline McKinney
7217 Café Rouge Drive
Bakersfield, CA 93312

John Fox
112 Purington Str
Petaluma, CA 94953

Kern Couty ALUC
Public Services Building
2700 M Street, Ste 100
Bakersfield, CA 93301-2370

San Bernardino County
385 N Arrowhead Avenue
San Bernardino, CA 92415

Duane Burkey
1775 E California Avenue
Ridgecrest, CA 93555

Kern County Public Works
Public Services Building
2700 M Street, Ste 100
Bakersfield, CA 93301-2370

Tim Fox
429 East Bowen Road, STOP 4001
China Lake, CA 93555

Kerncrest Chapter of Audubon Society
PO Box 984
Ridgecrest, CA 93556

California State Clearinghouse
PO Box 3044
Sacramento, CA 95814

US Army Corps of Engineers
915 Wilshire Blvd, Suite 1101
Los Angeles, CA 90017

R C Kirkendoll
1819 Upjohn Avenue
Ridgecrest, CA 93555

Linda Daily
1539 China Lake Blvd. #174
Ridgecrest, CA 93555

William Valov
2339 Montera Dr.
Hacienda Heights, CA 91745

Benz Sanitation
PO Box 1750
Tehachapi, CA 93581

AMG & Associates
Gevorgian Trust
16633 Ventura Blvd.
Encino, CA 91436

Don and Joan McKernan
1543 E Bowman Road
Ridgecrest, CA 93555

Leora Fox
209 Springside St
Ridgecrest, CA 93555

State of California
Motorsport Complex
520 S Richmond
Ridgecrest, CA 93555

Ridgecrest Sanitation
237 San Bernardino Blvd
Ridgecrest, CA 93555

Immanual Southern Baptist Church
1201 N China Lake Blvd.
Ridgecrest, CA 93555

Elmar Karpe
4000 Ming Avenue
Bakersfield, CA 93309

Edward and Kathleen Frey
312 Locus St
Ridgecrest, CA 93555

M D Handeland
1421 La Loma Dr
Lake San Marcos, CA 92069

Jimmy Lane
1821 E Upjohn St
Ridgecrest, CA 93555

Billie and Shirley Raglin
1358 E Bataan
Ridgecrest, CA 93555

Joe Haberman
PO Box 1090
Ridgecrest, CA 93555

Sun Kyong & Jacob Martins
316 Locust St
Ridgecrest, CA 93555

Jackie and Gordon Steffek
PO Box 19351
Pahrump, NV 89060

Donna and James Knudsen
121 W Ridgecrest Blvd.
Ridgecrest CA 93555

Patricia Lane
1800 E Radar Avenue
Ridgecrest, CA 93555

SA Recycling
Jeff Farano
2411 N Blassel St
Orange, CA 92865

Richard Lee Carmer
222 County Line Road
Ridgecrest, CA 93555

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PO Box 1090
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B. Received by (Printed Name) JOE R. HABERMAN | C. Date of Delivery 6/30/15

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INDIAN WELLS VLY CEMETERY INC
216 S. Norma
RIDGECREST, CA 93555

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A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Krystal Toms | C. Date of Delivery 6/29/15

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FOX, JOHN
112 PURINGTON ST
Petaluma, CA 94953

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KINNAN ROBERT & TAMMY
320 S Locust St
RIDGECREST, CA 93555

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A. Signature
X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) ROBERT KINNAN | C. Date of Delivery 6/30/15

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1. Article Addressed to:

FOX LEORA V TRS
209 Springside St
RIDGECREST, CA 93555

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A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Leora Fox | C. Date of Delivery 6/29/15

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HABERMAN JOE R
PO Box 1090
RIDGECREST, CA 93555

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X Joe Haberman ☐ Agent ☐ Addressee

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RAGLIN BILLIE G & SHIRLEY A
1358 E Bataan
RIDGECREST, CA 93555

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X Billie G. Raglin ☐ Agent ☒ Addressee

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1. Article Addressed to:

BURKEY, DUANE A
1775 E CALIFORNIA AVE
RIDGECREST, CA 93555

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A. Signature
X Kathy Burkey ☐ Agent ☐ Addressee

B. Received by (Printed Name) Kathy Burkey | C. Date of Delivery 6/29/15

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1. Article Addressed to:

KIRKENDOLL, R C
1819 UPJOHN AVE
RIDGECREST, CA 93555

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A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) R C Kirkendoll | C. Date of Delivery 6/26/15

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1. Article Addressed to:

CARMER, RICHARD LEE TR 12/20/11
222 COUNTY LINE RD
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) RICHARD L. CARMER | C. Date of Delivery 30 JUNE 15

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If YES, enter delivery address below: ☐ No

USPS RIDGECREST CA 93555 JUN 30 2015

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8809 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

RIDGECREST SANITATION DISTRICT
237 San Bernadino Blvd
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) Kelly Bailey | C. Date of Delivery 6/29

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail® ☐ Priority Mail Express™
☒ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8670 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MC KERNAN DON J & JOAN E
1543 E Bowman Road
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) Don J McKernan | C. Date of Delivery 6/30/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8717

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

IMMANUEL SOUTHERN BAPTIST CHR
1201 N China Lake Blvd.
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☒ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8663

Ridgecrest - 20301081-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

S A RECYCLING LLC
FARANO JEFF SR
2411 N Blassel Street
ORANGE, CA 92865

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

JUN 30 2015

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☒ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8816

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

KYONG SUN OAH & MARTINS JACOB JR
316 Locust St
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] C. Date of Delivery 6.29.15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8748 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

FREY EDWARD R & KATHLEEN A
312 Locus St
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] C. Date of Delivery 06.29.15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No
312 Locust
Ridgecrest CA 93555

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8649 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

SIERRA AUTO RECYCLING INC
401 Inyokern Road
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) DAVID C. Date of Delivery 6.29.15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3566 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Native American Heritage Comm.
1550 Harbor Blvd., Ste 100
West Sacramento, CA 95691

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery 6/29/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3795 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

UETZ CHRIS L
324 Locust St
RIDGECREST, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Chris Uetz | C. Date of Delivery 6.29.15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail® ☒ Priority Mail Express™
☒ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8632 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

VANOVER, NEVEL FRANK JR REV TR - EST
908 MADERA ST
Maricopa, CA 93252

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) STEVEN LAWLESS | C. Date of Delivery 6-29-15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3603 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

US Bureau of Reclamation
PO Box 61470
Boulder City, NV 89006-1470

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Rossana Mena C. Date of Delivery 6/29/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3740 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

US. Army Corps of Engineers
915 Wilshire Blvd. Ste 1101
Los Angeles, CA 90017

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) JUN 29 2015 C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3665 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

US Env. Protection Agency
915 Wilshire Blvd. Suite 1460
Los Angeles, CA 90017

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) JUN 29 2015 C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3788 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

San Bernardino County
385 N Arrowhead Avenue
San Bernardino, CA 92415

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery JUN 2 9 2015

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

92415-0180

3. Service Type
☑ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3719

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

San Bernardino Public Works
825 East Third Street
San Bernardino, CA 92415

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery JUN 2 9 2015

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

92415-0835

3. Service Type
☑ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3641

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

San Bernardino County LAFCO
215 North D Street, Suite 204
San Bernardino, CA 92415-0490

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery JUN 2 9 2015

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

OK

3. Service Type
☑ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 4464

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

City of Ridgecrest – Planning Commission
100 W California Avenue
Ridgecrest, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) F LEWIS | C. Date of Delivery 6-30-15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3801

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

US Fish & Wildlife Service
2800 Cottage Way, Rm. W-2606
Sacramento, CA 95825-1846

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) | C. Date of Delivery 6/29

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3733

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Tim Fox
429 East Bowen Road, STOP 4001
China Lake, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☒ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] | C. Date of Delivery 6/29/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RIDGECREST CA JUN 29 2015

3. Service Type
☐ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☒ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3696

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

FEAD China Lake Bldg. 00978
Stop 4006, RM 1 NAWS
China Lake, CA 93555

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] C. Date of Delivery 6/28/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3764 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

California State Clearinghouse
PO Box 3044
Sacramento, CA 95814

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3672 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

California Dept. of Fish & Wildlife
3602 Inland Empire Blvd. Suite C-220
Ontario, CA 91764

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) K Corbett C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 4471 Forecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

California Dept of Fish & Wildlife
1234 E. Shaw Avenue
Fresno, CA 93710

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name): Terrie Torres
C. Date of Delivery: 6/29/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3658

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

SWRCB
PO Box 100
Sacramento, CA 95812-0100

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

CALEPA HQ
1001 I Street, Sacramento, CA 95814
JUN 29 2015
CALEPA MAILROOM

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7015 0640 0005 0369 3726

Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

BENZ SANITATION INC
PO Box 1750
TEHACHAPI, CA 93581

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Karla Rogers ☐ Agent ☐ Addressee

B. Received by (Printed Name) Karla Rogers C. Date of Delivery 7/2/15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

7014 3490 0002 1198 8762 Ridgecrest - 203010B1-T5

PS Form 3811, July 2013 Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Kern-Kaweah Chapter of the Sierra Club
Box 3357
Bakersfield, CA 93385-3357

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

JUL - 2 2015 BAKERSFIELD

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

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1401 19th Street, Suite 300
Bakersfield, CA 93301

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X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery 7/2/15

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1. Article Addressed to:

LUGO, JAVIER
~~920~~ 934 S LAMB RD
RIDGECREST, CA 93555
924

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X [signature] ☐ Agent ☒ Addressee

B. Received by (Printed Name) Javier Lugo C. Date of Delivery 07/01/15

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Kerncrest Chapter of the Audubon Society
PO Box 984
Ridgecrest, CA 93556

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[signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) S Brubaker C. Date of Delivery 7-1-15

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B. Received by (Printed Name) SONIA MARTINEZ C. Date of Delivery 7/2/15

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1. Article Addressed to:

Kern County ALUC
Public Services Building
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Bakersfield. CA 93301-2370

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A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Sonia Alvarez C. Date of Delivery 6/29

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1. Article Addressed to:

BENNETT, MARK G
1738 E BOWMAN
RIDGECREST, CA 93555

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A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Mark Bennett C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
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SWAN JACQUELINE R & MITCHELL
JOSEPHINE R
1020 Brockton Lane
VENTURA, CA 93001

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A. Signature
X Jacqueline R Swan ☐ Agent ☒ Addressee

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1. Article Addressed to:

TRYGSTAD DANIEL A
1601 E Bowman Road
RIDGECREST, CA 93555

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X Daniel Trygstad ☐ Agent ☒ Addressee

B. Received by (Printed Name) DANIEL TRYGSTAD | C. Date of Delivery 07/13/15

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LANE, PATRICIA S
1800 E RADER AVE
RIDGECREST, CA 93555

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X [signature] ☐ Agent ☐ Addressee

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RIBLEY ROBERT & MELISSA
13061 Arbor Lane
GRASS VALLEY, CA 95949

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X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [Melissa Ribley] C. Date of Delivery

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State of California
Motorsport Compl
520 S Richmond
Ridgecrest, CA 93

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unknown

Linda Daily
1539 China Lak
Ridgecrest, CA

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1421 La Lom
Lake San Ma

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93711@6162
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93711

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Elmar Karpe
4000 Ming Avenu
Bakersfield, CA 9

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Jimmy Lane
1821 E Upjoh
Ridgecrest, C

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MAILED FROM ZIP CODE 93711

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Fresno, CA 93711

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Jackie and Gordon Steffek
PO Box 19351
Pahrump, NV 89

NIXIE 891 SE 1009 08/07/15

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Donna and James Knudsen
121 W Ridgecrest Blvd.
Ridgecrest CA 93555

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Bakersfield, CA 93309

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- Attach this card to or on the front if sp

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02 1P $ 006.735
0000829926 JUN 26 2015
MAILED FROM ZIP CODE 93711

NL 6/29

07/25
07/30/15

UNCLAIMED

Eugene Edwards
1800 E Radar Road
Ridgecrest, CA 9[illegible]

[illegible] 917 7E 1009 0006/09/15

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93711[illegible]

Appendix B
Air Quality / Greenhouse Gases

AIR QUALITY & GREENHOUSE GAS IMPACT ASSESSMENT

FOR

RIDGECREST WASTEWATER TREATMENT PLANT PROJECT

CITY OF RIDGECREST, CA

MARCH 2016

PREPARED FOR:

EST. 1968
PROVOST & PRITCHARD
CONSULTING GROUP
An Employee Owned Company
130 N GARDEN STREET
VISALIA, CA 93291

PREPARED BY:

AMBIENT
AIR QUALITY & NOISE CONSULTING
612 12TH STREET, SUITE 201
PASO ROBLES, CA 93446

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Appendices

Appendix A: Federal Air Quality General Conformity Determination
Appendix B: Emissions Modeling

List of Common Terms & Acronyms

AAM	Annual Arithmetic Mean
AHERA	Asbestos Hazard Emergency Response Act
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
CAAQS	California Ambient Air Quality Standards
CBSC	California Building Standards Code
CCAA	California Clean Air Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DPM	Diesel-Exhaust Particulate Matter or Diesel-Exhaust PM
DRRP	Diesel Risk Reduction Plan
EKAPCD	Eastern Kern Air Pollution Control District
FCAA	Federal Clean Air Act
GHG	Greenhouse Gases
HAP	Hazardous Air Pollutant
EKAPCD	East Kern Air Pollution Control District
MDAB	Mojave Desert Air Basin
NAWS	Naval Air Weapons Station
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NO_x	Oxides of Nitrogen
O_3	Ozone
Pb	Lead
PM	Particulate Matter
PM_{10}	Particulate Matter (less than 10 µm)
$PM_{2.5}$	Particulate Matter (less than 2.5 µm)
ppb	Parts per Billion
ppm	Parts per Million
ROG	Reactive Organic Gases
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
sq.ft.	Square Feet
TAC	Toxic Air Contaminant
TBACT	Toxic Best Available Control Technology
TOG	Total Organic Gases
µg/m^3	Micrograms per cubic meter
UNFCCC	United Nations Framework Convention on Climate Change
U.S. EPA	United State Environmental Protection Agency
VOC	Volatile Organic Gases
WWTP	Wastewater Treatment Plant

INTRODUCTION

This report describes the existing environment in the project vicinity and identifies potential air quality and greenhouse gas (GHG) impacts associated with the proposed project, including the analysis of two build alternatives. Air quality and GHG impacts were evaluated based on project-specific construction and operational information. The analysis was prepared in accordance with Eastern Kern Air Pollution Control District (EKAPCD)-recommended guidance. Mitigation measures were included for potentially significant impacts. No significant and unavoidable air quality or GHG impacts were identified.

PROPOSED PROJECT OVERVIEW

Project Location

The City of Ridgecrest (City) is located in the northeast corner of Kern County, in the southern portion of the Indian Wells Valley. This area is situated within the upper Mojave Desert, approximately 110 miles east of Bakersfield and 115 miles northeast of Los Angeles. The area is loosely bounded by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south. The proposed project location is depicted in Figure 1.

Project Build Alternatives

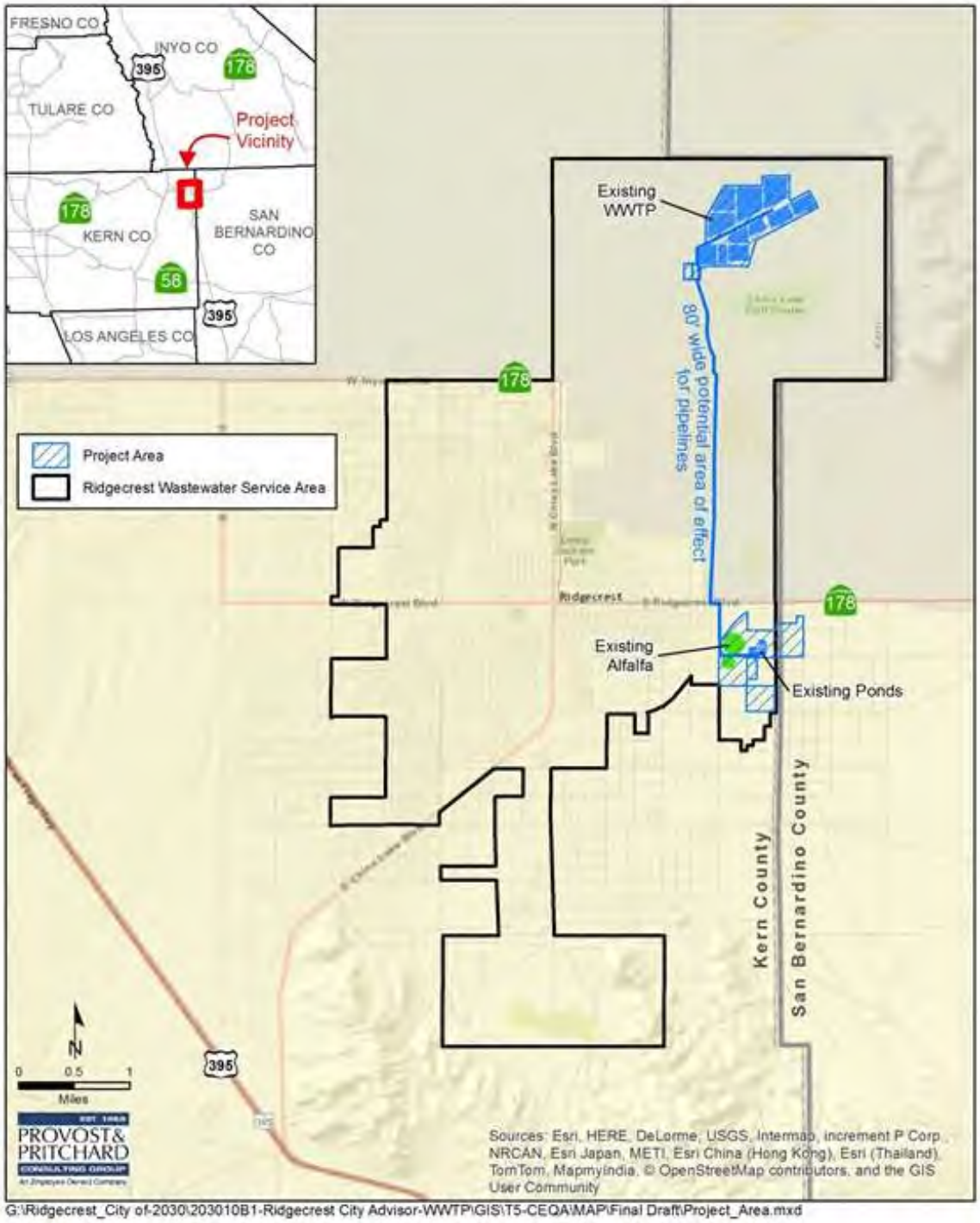
Build Alternatives 1 and 2 have numerous components in common, including sites to be utilized, facilities to be constructed and operated (although locations of those facilities may vary) and treatment capacity. Build Alternatives 1 and 2 are depicted in Figure 2 and Figure 3, respectively.

Build Alternatives 1 and 2 occupy largely the same physical sites and will contain the same type, size, and intensity of treatment facilities. The primary differences between these two alternatives relate to the physical location of the wastewater treatment plant (WWTP), the presence or absence of a new raw wastewater lift station at the Naval Air Weapons Station (NAWS) site, construction of a small segment of 24-inch sewer main, and a force main from the new lift station to the City site. Under Alternative 1, the WWTP would be constructed on approximately 7.4 acres at the NAWS site, adjacent and to the west of the existing WWTP. Under Build Alternative 2, the WWTP would be constructed on approximately 10 acres at the City site, adjacent and to the southwest of the existing wastewater ponds. As noted above, both of the build alternatives require the continued operation and potential upgrades to the existing four-mile underground effluent pipeline, continued operation of the wastewater disposal ponds at the NAWS site and City site, and the construction of an additional 90 acres of ponds at the City site. If the City implements the disinfected tertiary recycled water component of the project, a recycled purple water pipe distribution system will be constructed from the selected WWTP site to the China Lake NAWS Site, the NAWS golf course, schools, parks, and landscaped areas. The pipeline is expected to be constructed within the existing rights-of-way of Richmond Road, the Drummond Road alignment south of Burroughs High School, French Avenue past Leroy Johnson Park, Balsam Street to Ridgecrest Blvd, then on South Warner Street to Freedom Park. All pipelines for the distribution of the recycled water will be analyzed under a subsequent CEQA document. Under the No-Project Alternative, the City would continue to operate and maintain its existing WWTP at the China Lake NAWS, the wastewater disposal ponds located at the NAWS and City sites, and the existing four-mile effluent force main.

NEARBY LAND USES & SENSITIVE RECEPTORS

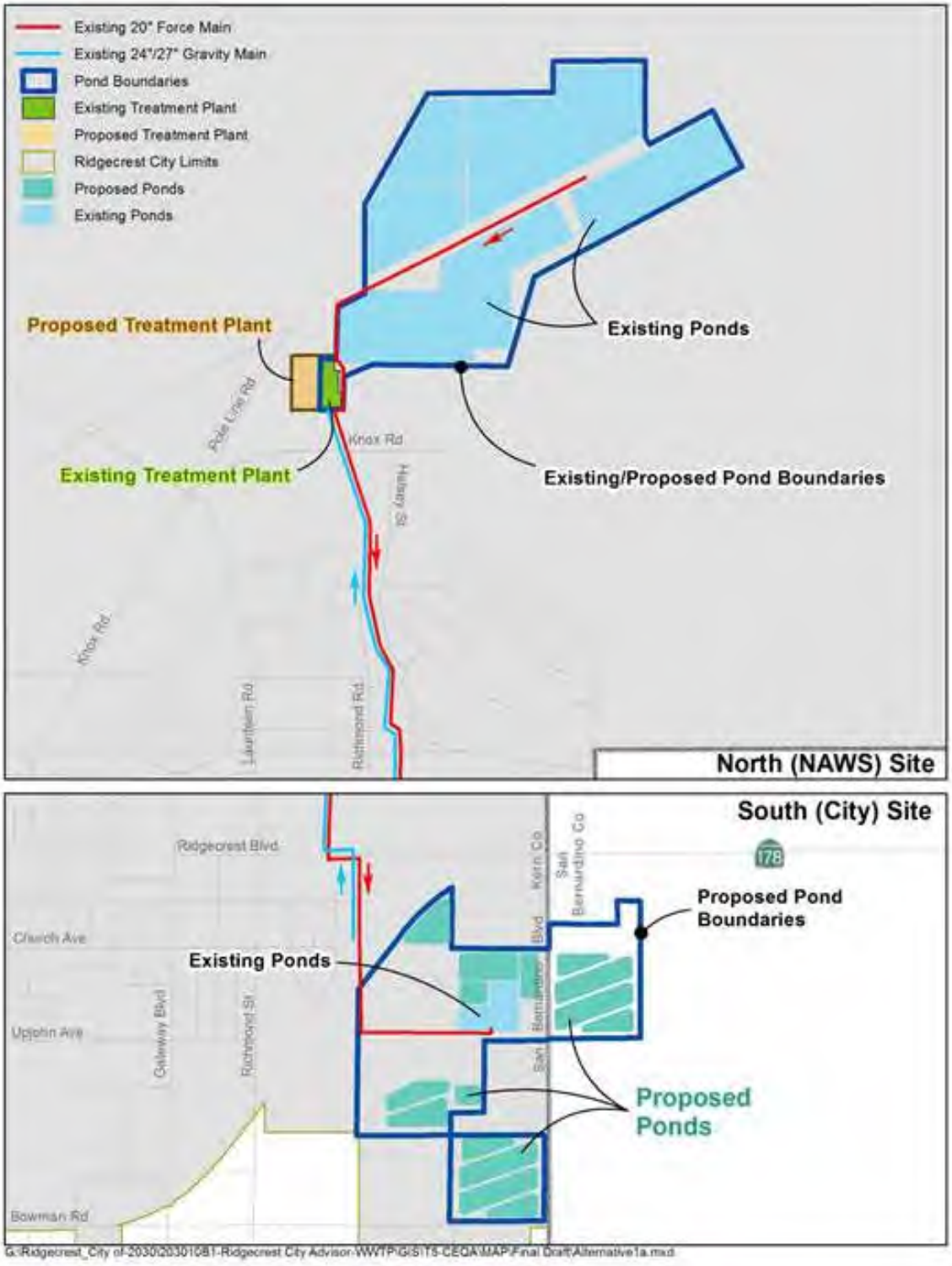
One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." The term sensitive receptors refer to specific population groups, as well as the land uses where individuals would reside for long periods. Commonly identified sensitive population groups are children, the elderly, the acutely ill, and the chronically ill. Commonly identified sensitive land uses would include facilities that house or attract children, the elderly, people with illnesses, or others who are especially

Figure 1
Project Location



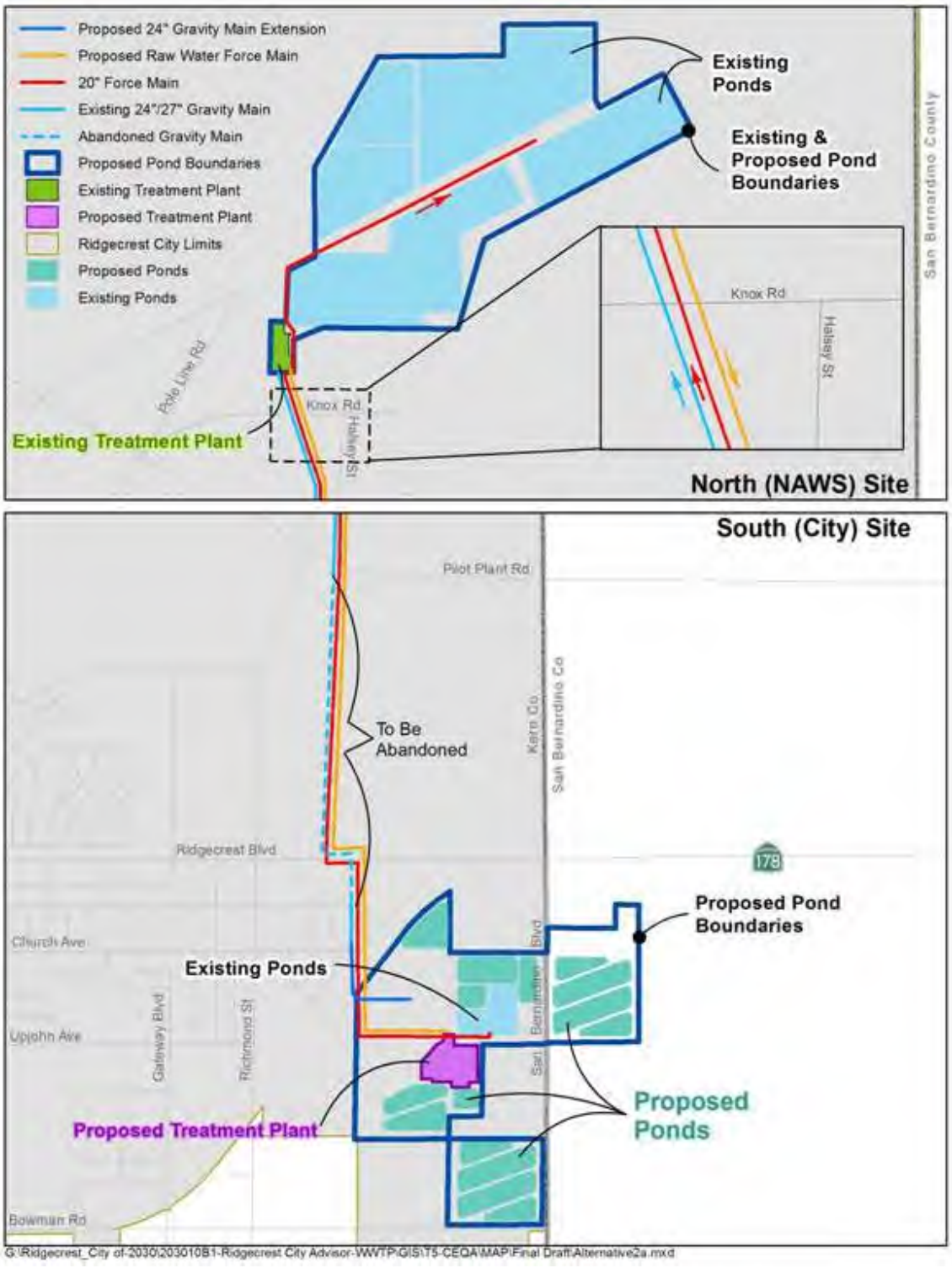
Source: Provost & Pritchard 2016

Figure 2
Build Alternative 1



Source: Provost & Pritchard 2016

Figure 3
Build Alternative 2



Source: Provost & Pritchard 2016

sensitive to the effects of air pollutants. Residential dwellings, schools, parks, playgrounds, childcare centers, convalescent homes, and hospitals are examples of sensitive land uses.

The nearest sensitive receptors consist predominantly of residential dwellings. The nearest residences are generally located approximately 1,575 feet to the southeast of the existing WWTP. Residential land uses are also generally located to the east of the existing ponds located to the south of Ridgecrest Boulevard, adjacent to and east of San Bernardino Boulevard, and approximately 1,500 feet to the west of the ponds.

AIR QUALITY

EXISTING SETTING

The project is located within the Mojave Desert Air Basin (MDAB). The MDAB consists of the eastern half of Kern County, the northern desert potion of Los Angeles County, eastern Riverside County, and a majority of San Bernardino County. Eastern Kern County is within the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD).

The MDAB covers a large part of the California's high desert. The MDAB includes the eastern half of Kern County, the northern part of Los Angeles County, most of San Bernardino County except for the southwest corner, and the eastern edge of Riverside County. It is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. It is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada (ARB 2001).

Although the eastern part of the MDAB is sparsely populated, the area just north of the San Gabriel and San Bernardino Mountains supports a large population, including the communities of Lancaster, Palmdale, Victorville, Hesperia, Apple Valley, and Barstow. Emissions from these areas, as well as military bases, highways railroad facilities, cement manufacturing, and mineral processing activities within the MDAB contribute to the region's ozone precursor emissions (ARB 2001).

The MDAB is also impacted by emissions from the San Joaquin Valley and the South Coast, although local emissions also contribute to poor air quality. The portion of the Mojave Desert immediately to the north of the San Gabriel and San Bernardino Mountains is heavily impacted by transport from the South Coast. Air monitoring stations at Hesperia and Phelan show the impact of surface transport through the Cajon Pass. In addition, transport aloft carries pollutants over the mountains to impact a broad area including Twentynine Palms and Lancaster-Palmdale areas. The air basin receives pollutants from the San Joaquin Valley as well. The area immediately downwind of Tehachapi Pass receives pollutants from the southern San Joaquin Valley. Violations in the town of Mojave in the eastern portion of Kern County are attributed entirely to this transport. The influence of pollutants from the San Joaquin Valley extends as far as Lancaster (ARB 2001).

CRITERIA AIR POLLUTANTS

For the protection of public health and welfare, the Federal Clean Air Act (FCAA) required that the United States Environmental Protection Agency (U.S. EPA) establish National Ambient Air Quality Standards (NAAQS) for various pollutants. These pollutants are referred to as "criteria" pollutants because the U.S. EPA publishes criteria documents to justify the choice of standards. These standards define the maximum amount of an air pollutant that can be present in ambient air. An ambient air quality standard is generally specified as a concentration averaged over a specific time period, such as one hour, eight hours, 24 hours, or one year. The different averaging times and concentrations are meant to protect against different exposure effects. Standards established for the protection of human health are referred to as primary standards; whereas, standards established for the prevention of environmental and property damage are called secondary standards. The FCAA allows states to adopt additional or more health-protective standards. The air quality regulatory framework and ambient air quality standards are discussed in greater detail later in this report.

The following provides a summary discussion of the primary and secondary criteria air pollutants of primary concern. In general, primary pollutants are directly emitted into the atmosphere, and secondary pollutants are formed by chemical reactions in the atmosphere.

Ozone (O_3) is a reactive gas consisting of three atoms of oxygen. In the troposphere, it is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when NO_X and volatile organic compounds (VOC), also referred to as reactive organic gases (ROG) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields 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 some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gas (ROG) is a reactive chemical gas, composed of hydrocarbon compounds that may contribute to the formation of smog by their involvement in atmospheric chemical reactions. No separate health standards exist for ROG as a group. Because some compounds that make up ROG are also toxic, like the carcinogen benzene, they are often evaluated as part of a toxic risk assessment. Total Organic Gases (TOGs) includes all of the ROGs, in addition to low reactivity organic compounds like methane and acetone. ROGs and VOC are subsets of TOG.

Volatile Organic Compounds (VOC) are hydrocarbon compounds that exist in the ambient air. VOCs contribute to the formation of smog and may also be toxic. VOC emissions are a major precursor to the formation of ozone. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints.

Oxides of Nitrogen (NO_X) are a family of gaseous nitrogen compounds and is a precursor to the formation of ozone and particulate matter. The major component of NO_X, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NO_X results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Particulate Matter (PM), also known as particle pollution, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. U.S. EPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles ($PM_{2.5}$- PM_{10})," such as those found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. $PM_{2.5-10}$ is deposited in the thoracic region of the lungs.
- "Fine particles ($PM_{2.5}$)," such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very small particles less than 0.1 micrometers in diameter largely resulting from the combustion of fossils fuels, meat, wood and other hydrocarbons. While UFP mass is a small portion of $PM_{2.5}$, its high surface area, deep lung penetration, and transfer into the bloodstream can result in disproportionate health impacts relative to their mass.

PM_{10}, $PM_{2.5}$, and UFP include primary pollutants (emitted directly to the atmosphere) as well as secondary pollutants (formed in the atmosphere by chemical reactions among precursors). Generally speaking, $PM_{2.5}$ and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM_{10} sources include these same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust.

Numerous scientific studies have linked both long- and short-term particle pollution exposure to a variety of health problems. Long-term exposures, such as those experienced by people living for many years in areas with high particle levels, have been associated with problems such as reduced lung function and the development of chronic bronchitis and even premature death. Short-term exposures to particles (hours or days) can aggravate lung disease, causing asthma attacks and also acute (short-term) bronchitis, and may also increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short term exposures, although they may experience temporary minor irritation when particle levels are elevated.

Carbon Monoxide (CO) is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). The main source of CO is on-road motor vehicles. Other CO sources include other mobile sources, miscellaneous processes, and fuel combustion from stationary sources. Because of the local nature of CO problems, California Air Resources Board (ARB) and U.S. EPA designate urban areas as CO nonattainment areas instead of the entire basin as with ozone and PM_{10}. Motor vehicles are by far the largest source of CO emissions. Emissions from motor vehicles have been declining since 1985, despite increases in vehicle miles traveled, with the introduction of new automotive emission controls and fleet turnover.

Sulfur Dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. However, like airborne NO_X, suspended SO_X particles contribute to the poor visibility. These SO_X particles can also combine with other pollutants to form $PM_{2.5}$. The prevalence of low-sulfur fuel use has minimized problems from this pollutant.

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage. Lead can also cause lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically.

Hydrogen Sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations; especially in enclosed spaces (800 ppm can cause death). OSHA regulates workplace exposure to H_2S.

Other Pollutants

The State of California has established air quality standards for some pollutants not addressed by Federal standards. The ARB has established State standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility reducing particles. The following section summarizes these pollutants and provides a description of the pollutants' physical properties, health and other effects, sources, and the extent of the problems.

Sulfates (SO_4^{2-}) are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur 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 takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The ARB sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilator function, aggravation of asthmatic symptoms, and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

Visibility Reducing Particles: Are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Vinyl Chloride (C_2H_3Cl or **VCM)** is a colorless gas that does not occur naturally. It is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloro-ethylene are broken down. Vinyl chloride is used to make polyvinyl chloride which is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

ODORS

Typically, odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from the psychological (i.e. irritation, anger, or anxiety) to the physiological, including circulatory and respiratory effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor and in fact an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word strong to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Odors from domestic wastewater are typically a result of anaerobic biological activity in the sewer collection and wastewater treatment systems. Odors are most prevalent during warm weather conditions, which favor a more rapid multiplication of the anaerobic bacteria. In addition, sewage containing industrial wastes may have odor problems compounded by organic gases from waste chemicals added to the sewer system. The anaerobic decomposition of compounds containing nitrogen and sulfur results in a number of gases, including hydrogen sulfide, ammonia, carbon dioxide, methane, nitrogen, oxygen and hydrogen. Although many different combinations of gases can occur at any given time, the most offensive odors associated with domestic wastewater are typically the result of emissions of hydrogen sulfide gas.

Neither the state nor the federal governments have adopted rules or regulations for the control of odor sources. The EKAPCD does not have an individual rule or regulation that specifically addresses odors; however, odors would be subject to EKAPCD's *Rule 419, Nuisance*. Any actions related to odors would be based on citizen complaints to local governments and the EKAPCD.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are air pollutants that may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air, but due to their high toxicity, they may pose a threat to public health even at very low concentrations. Because there is no threshold level below which adverse health impacts are not expected to occur, TACs differ from criteria pollutants for which acceptable levels of exposure can be determined and for which state and federal governments have set ambient air quality standards. TACs, therefore, are not considered "criteria pollutants" under either the FCAA or the California Clean Air Act (CCAA), and are thus not subject to National or California ambient air quality standards (NAAQS and CAAQS, respectively). Instead, the U.S. EPA and the ARB regulate Hazardous Air Pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions. In conjunction with EKAPCD rules, these federal and state statutes and regulations establish the regulatory framework for TACs. At the national levels, the U.S. EPA has established National Emission Standards for HAPs (NESHAPs), in accordance with the requirements of the FCAA and subsequent amendments. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

Within California, TACs are regulated primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. The following provides a summary of the primary TACs of concern within the State of California and related health effects:

Diesel Exhaust Particulate Matter (Diesel Exhaust PM or DPM) was identified as a TAC by the ARB in August 1998. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources, contributing about 3 percent of emissions, include shipyards, warehouses, heavy equipment repair yards, and oil and gas production operations. Emissions from these sources are from diesel-fueled internal combustion engines. Stationary sources that report DPM emissions also include heavy construction, manufacturers of asphalt paving materials and blocks, and diesel-fueled electrical generation facilities (ARB 2013).

In October 2000, the ARB issued a report entitled: "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles", which is commonly referred to as the Diesel Risk Reduction Plan (DRRP). The DRRP provides a mechanism for combating the DPM problem. The goal of the DRRP is to reduce concentrations of DPM by 85 percent by the year 2020, in comparison to year 2000 baseline emissions. The key elements of the DRRP are to clean up existing engines through engine retrofit emission control devices, to adopt stringent standards for new diesel engines, and to lower the sulfur content of diesel fuel to protect new, and very effective, advanced technology emission control devices on diesel engines. When fully implemented, the DRPP will significantly reduce emissions from both old and new diesel fueled motor vehicles and from stationary sources that burn diesel fuel. In addition to these strategies, the ARB continues to promote the use of alternative fuels and electrification. As a result of these actions, DPM concentrations and associated health risks in future years are projected to decline (ARB 2013).

Exposure to DPM can have immediate health effects. DPM can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, Exposure to DPM also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, DPM has been identified as a carcinogen.

Acetaldehyde is a federal hazardous air pollutant. The ARB identified acetaldehyde as a TAC in April 1993. Acetaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Sources of acetaldehyde include emissions from combustion processes such as exhaust from mobile sources and fuel combustion from stationary internal combustion engines, boilers, and process heaters. A majority of the statewide acetaldehyde emissions can be attributed to mobile sources, including on-road motor vehicles, construction and mining equipment, aircraft, recreational boats, and agricultural equipment. Area sources of emissions include the burning of wood in residential fireplaces and wood stoves. The primary stationary sources of acetaldehyde are from fuel combustion from the petroleum industry (ARB 2013).

Acute exposure to acetaldehyde results in effects including irritation of the eyes, skin, and respiratory tract. Symptoms of chronic intoxication of acetaldehyde resemble those of alcoholism. The U.S. EPA has classified acetaldehyde as a probable human carcinogen. In California, acetaldehyde was classified on April 1, 1988, as a chemical known to the state to cause cancer (U.S. EPA 2014; ARB 2013).

Benzene is highly carcinogenic and occurs throughout California. The ARB identified benzene as a TAC in January 1985. A majority of benzene emitted in California (roughly 88 percent) comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. These sources include on-road motor vehicles, recreational boats, off-road recreational vehicles, and lawn and garden equipment. Benzene is also formed as a partial combustion product of larger aromatic fuel components. To a lesser extent, industry-related stationary sources are also sources of benzene emissions. The primary stationary sources of reported benzene emissions are crude petroleum and natural gas mining, petroleum refining, and electric generation that involves the use of petroleum products. The primary area sources include residential combustion of various types such as cooking and water heating (ARB 2013).

Acute inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidences of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. The U.S. EPA has classified benzene as known human carcinogen for all routes of exposure (U.S. EPA 2014).

1,3-butadiene was identified by the ARB as a TAC in 1992. Most of the emissions of 1,3-butadiene are from incomplete combustion of gasoline and diesel fuels. Mobile sources account for a majority of the total statewide emissions. Additional sources include agricultural waste burning, open burning associated with forest management, petroleum refining, manufacturing of synthetics and man-made materials, and oil and gas extraction. The primary natural sources of 1,3-butadiene emissions are wildfires (ARB 2013).

Acute exposure to 1,3-butadiene by inhalation in humans results in irritation of the eyes, nasal passages, throat, and lungs. Epidemiological studies have reported a possible association between 1,3-butadiene exposure and cardiovascular diseases. Epidemiological studies of workers in rubber plants have shown an association between 1,3-butadiene exposure and increased incidence of leukemia. Animal studies have reported tumors at various sites from 1,3-butadiene exposure. In California, 1,3-butadiene has been identified as a carcinogen.

Carbon Tetrachloride was identified by the ARB as a TAC in 1987 under California's TAC program (ARB 2013). The primary stationary sources reporting emissions of carbon tetrachloride include chemical and allied product manufacturers and petroleum refineries. In the past, carbon tetrachloride was used for dry cleaning and as a grain-fumigant. Usage for these purposes is no longer allowed in the United States. Carbon tetrachloride has not been registered for pesticidal use in California since 1987. Also, the use of carbon tetrachloride in products to be used indoors has been discontinued in the United States. The statewide emissions of carbon tetrachloride are small (about 1.96 tons per year), and background concentrations account for most of the health risk (ARB 2013).

The primary effects of carbon tetrachloride in humans are on the liver, kidneys, and central nervous system. Human symptoms of acute inhalation and oral exposures to carbon tetrachloride include headache, weakness, lethargy, nausea, and vomiting. Acute exposures to higher levels and chronic (long-term) inhalation or oral exposure to carbon tetrachloride produces liver and kidney damage in humans. Human data on the carcinogenic effects of carbon tetrachloride are limited. Studies in animals have shown that ingestion of carbon tetrachloride increases the risk of liver cancer. In California, carbon tetrachloride has been identified as a carcinogen.

Hexavalent chromium was identified as a TAC in 1986. Sources of Hexavalent chromium include industrial metal finishing processes, such as chrome plating and chromic acid anodizing, and firebrick lining of glass furnaces. Other sources include mobile sources, including gasoline motor vehicles, trains, and ships (ARB 2013).

The respiratory tract is the major target organ for hexavalent chromium toxicity, for acute and chronic inhalation exposures. Shortness of breath, coughing, and wheezing were reported from a case of acute exposure to hexavalent chromium, while perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, and other respiratory effects have been noted from chronic exposure. Human studies have clearly established that inhaled hexavalent chromium is a human carcinogen, resulting in an increased risk of lung cancer. In California, hexavalent chromium has been identified as a carcinogen.

Para-Dichlorobenzene was identified by the ARB as a TAC in April 1993. The primary area-wide sources that have reported emissions of para-dichlorobenzene include consumer products such as non-aerosol insect repellants and solid/gel air fresheners. These sources contribute nearly all of the statewide para-dichlorobenzene emissions (ARB 2013).

Acute exposure to paradichlorobenzene via inhalation results in irritation to the eyes, skin, and throat in humans. In addition, long-term inhalation exposure may affect the liver, skin, and central nervous system in humans. The U.S. EPA has classified para-dichlorobenzene as a possible human carcinogen.

Formaldehyde was identified by the ARB as a TAC in 1992. Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Photochemical oxidation is the largest source of formaldehyde concentrations in California ambient air. Directly emitted formaldehyde is a product of incomplete combustion. One of the primary sources of directly-emitted formaldehyde is vehicular exhaust. Formaldehyde is also used in resins, can be found in many consumer products as an antimicrobial agent, and is also used in fumigants and soil disinfectants. The primary area sources of formaldehyde emissions include wood burning in residential fireplaces and wood stoves (ARB 2013).

Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute and chronic inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. Formaldehyde is classified as a probable human carcinogen.

Methylene Chloride was identified by the ARB as a TAC in 1987. Methylene chloride is used as a solvent, a blowing and cleaning agent in the manufacture of polyurethane foam and plastic fabrication, and as a solvent in paint stripping operations. Paint removers account for the largest use of methylene chloride in California, where methylene chloride is the main ingredient in many paint stripping formulations. Plastic product manufacturers, manufacturers of synthetics, and aircraft and parts manufacturers are stationary sources reporting emissions of methylene chloride (ARB 2013).

The acute effects of methylene chloride inhalation in humans consist mainly of nervous system effects including decreased visual, auditory, and motor functions, but these effects are reversible once exposure ceases. The effects of chronic exposure to methylene chloride suggest that the central nervous system is a

potential target in humans and animals. Human data are inconclusive regarding methylene chloride and cancer. Animal studies have shown increases in liver and lung cancer and benign mammary gland tumors following the inhalation of methylene chloride. In California, methylene chloride has been identified as a carcinogen.

Perchloroethylene was identified by the ARB as a TAC in 1991. Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos, and laboratory solvents. In California, the stationary sources that have reported emissions of perchloroethylene are dry cleaning plants, aircraft part and equipment manufacturers, and fabricated metal product manufacturers. The primary area sources include consumer products such as automotive brake cleaners and tire sealants and inflators (ARB 2013).

Acute inhalation exposure to perchloroethylene vapors can result in irritation of the upper respiratory tract and eyes, kidney dysfunction, and at lower concentrations, neurological effects, such as reversible mood and behavioral changes, impairment of coordination, dizziness, headaches sleepiness, and unconsciousness. Chronic inhalation exposure can result in neurological effects, including sensory symptoms such as headaches, impairments in cognitive and motor neurobehavioral functioning, and color vision decrements. Cardiac arrhythmia, liver damage, and possible kidney damage may also occur. In California, perchloroethylene has been identified as a carcinogen.

ASBESTOS

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. Serpentine rock often contains chrysotile asbestos. Serpentine rock, and its parent material, ultramafic rock, is abundant in the Sierra foothills, the Klamath Mountains, and Coast Ranges. The project site, however, is not located in an area of known ultramafic rock.

Additional sources of asbestos include building materials and other manmade materials. The most common sources are heat-resistant insulators, cement, furnace or pipe coverings, inert filler material, fireproof gloves and clothing, and brake linings. Asbestos has been used in the United States since the early 1900's; however, asbestos is no longer allowed as a constituent in most home products and materials. Many older buildings, schools, and homes still have asbestos containing products. Various other laws have also been adopted, including laws related to the control of asbestos-containing materials during the renovation and demolition of buildings.

All types of asbestos are hazardous and may cause lung disease and cancer. Health risks to people are dependent upon their exposure to asbestos. The longer a person is exposed to asbestos and the greater the intensity of the exposure, the greater the chances for a health problem. Asbestos-related disease, such as lung cancer, may not occur for decades after breathing asbestos fibers. Cigarette smoking increases the risk of lung cancer from asbestos exposure.

VALLEY FEVER

Valley fever is an infection caused by the fungus Coccidioides. The scientific name for valley fever is "coccidioidomycosis," and it's also sometimes called "desert rheumatism." The term "valley fever" usually refers to Coccidioides infection in the lungs, but the infection can spread to other parts of the body in severe cases.

Coccidioides spores circulate in the air after contaminated soil and dust are disturbed by humans, animals, or the weather. The spores are too small to see without a microscope. When people breathe in the spores, they are at risk for developing valley fever. After the spores enter the lungs, the person's body temperature allows the spores to change shape and grow into spherules. When the spherules get large enough, they break open and release smaller pieces (called endospores) which can then potentially spread within the

lungs or to other organs and grow into new spherules. In extremely rare cases, the fungal spores can enter the skin through a cut, wound, or splinter and cause a skin infection.

Symptoms of valley fever may appear between 1 and 3 weeks after exposure. Symptoms commonly include: fatigue, coughing, fever, shortness of breath, headaches, night sweats, muscle aches and joint pain, and rashes on the upper body or legs.

Approximately 5 to 10 percent of people who get valley fever will develop serious or long-term problems in their lungs. In an even smaller percent of people (about 1 percent), the infection spreads from the lungs to other parts of the body, such as the central nervous system (brain and spinal cord), skin, or bones and joints. Certain groups of people may be at higher risk for developing the severe forms of valley fever, such as people who have weakened immune systems. The fungus that causes valley fever, Coccidioides, can't spread from the lungs between people or between people and animals. However, in extremely rare instances, a wound infection with Coccidioides can spread valley fever to someone else, or the infection can be spread through an organ transplant with an infected organ.

For many people, the symptoms of valley fever will go away within a few months without any treatment. Healthcare providers choose to prescribe antifungal medication for some people to try to reduce the severity of symptoms or prevent the infection from getting worse. Antifungal medication is typically given to people who are at higher risk for developing severe valley fever. The treatment typically occurs over a period of roughly 3 to 6 months. In some instances, longer treatment may be required. If valley fever develops into meningitis life-long antifungal treatment is typically necessary.

Between the years 1998 to 2012, nearly 130,000 valley fever cases were reported to the Centers for Disease Control (CDC). In states where valley fever is endemic and reportable (Arizona, California, Nevada, New Mexico, and Utah), overall incidence in 2011 was 42.6 cases per 100,000 population and was highest among persons aged 60-79 years. In Kern County, there are approximately 500 cases of Valley Fever reported in a typical year. However, during epidemic years, the number of reported cases can increase to 1,500, or more. The number of reported cases within Kern County during the last four years has ranged from a low of 1,724 in 2013 to a high of 2,745 in 2011. During epidemic years, deaths due to valley fever increase to more than 12 people per year (KCPHS 2015).

Scientists continue to study how weather and climate patterns affect the habitat of the fungus that causes valley fever. Coccidioides is thought to grow best in soil after heavy rainfall and then disperse into the air most effectively during hot, dry conditions. For example, hot and dry weather conditions have been shown to correlate with an increase in the number of valley fever cases in Arizona and in California. The ways in which climate change may be affecting the number of valley fever infections, as well as the geographic range of Coccidioides, isn't known yet, but is a subject for further research (CDC 2014). Refer to Appendix A for additional information on valley fever.

AMBIENT AIR QUALITY

Air pollutant concentrations are measured at several monitoring stations in the MDAB. The Ridgecrest-100 West California Avenue and Mohave-923 Poole Street monitoring stations are the closest representative monitoring stations to the proposed project site with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. The Ridgecrest-100 West California Avenue monitoring station monitors ambient concentrations of PM_{10} and $PM_{2.5}$. Ambient concentrations of ozone were obtained from the Mohave-923 Poole Street monitoring station. Ambient monitoring data were obtained for the last three years of available measurement data (i.e., 2012 through 2014) and are summarized in Table 1. As depicted, the state and federal ozone and PM standards were exceeded on numerous occasions during the past 3 years.

Table 1
Summary of Ambient Air Quality Monitoring Data

Pollutant	Monitoring Year		
	2012	2013	2014
Ozone[1]			
Maximum concentration (1-hour/8-hour average)	0.096/0.086	0.094/0.086	0.104/0.095
Number of days state/national 1-hour standard exceeded	1/0	0/0	9/0
Number of days state/national 8-hour standard exceeded	55/29	29/9	95/57
Suspended Particulate Matter ($PM_{2.5}$)[2]			
Maximum concentration (state/national)	11.2/11.2	15.3/15.3	10.5/10.5
Annual Average (state/national)	NA/NA	NA/5.4	4.7/4.6
Suspended Particulate Matter (PM_{10})[2]			
Maximum concentration (state/national)	41.5/43.3	51.4/56.4	47.6/51.8
Number of days state standard exceeded (measured/calculated)[3]	0/0	1/NA	0/0
Number of days national standard exceeded (measured/calculated)[3]	0/0	0/0	0/0

ppm = parts per million by volume, µg/m^3 = micrograms per cubic meter, NA=Not Available

1. *Based on ambient concentrations obtained from the Mohave-923 Poole Street Monitoring Station.*
2. *Based on ambient concentrations obtained from the Ridgecrest-100 West California Avenue Monitoring Station*
3. *Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.*

Source: ARB 2016a

REGULATORY FRAMEWORK

Air quality within the NCCAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the EKAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

FEDERAL

U.S. Environmental Protection Agency

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. The U.S. EPA's air quality mandates are drawn primarily from the FCAA, which was signed into law in 1970. Congress substantially amended the FCAA in 1977 and again in 1990.

Federal Clean Air Act

The FCAA required the U.S. EPA to establish NAAQS, and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. NAAQS are summarized in Table 2.

The FCAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to

be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

Table 2
Summary of Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards*	National Standards* (Primary)
Ozone (O_3)	1-hour	0.09 ppm	–
	8-hour	0.070 ppm	0.075 ppm
Particulate Matter (PM_{10})	AAM	20 µg/m^3	–
	24-hour	50 µg/m^3	150 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	AAM	12 µg/m^3	12 µg/m^3
	24-hour	No Standard	35 µg/m^3
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9 ppm	9 ppm
	8-hour (Lake Tahoe)	6 ppm	–
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppb
Sulfur Dioxide (SO_2)	AAM	–	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	3-hour	–	0.5 ppm (1300 µg/m^3)**
	1-hour	0.25 ppm	75 ppb
Lead	30-day Average	1.5 µg/m^3	–
	Calendar Quarter	–	1.5 µg/m^3
	Rolling 3-Month Average	–	0.15 µg/m^3
Sulfates	24-hour	25 µg/m^3	No Federal Standards
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient: 0.23/kilometer-visibility of 10 miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent.	

** For more information on standards visit :http//ww.arb.ca.gov.research/aaqs/aaqs2.pdf*
***Secondary Standard*
Source: ARB 2016b

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the U.S. EPA established the National Emission Standards for Hazardous Air Pollutants. These are technology-based source-specific regulations that limit allowable emissions of HAPs.

STATE

California Air Resources Board

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS), which in many cases are more stringent than the NAAQS, and setting emissions standards for new motor vehicles. The CAAQS are summarized in Table 2. The emission standards established for motor vehicles differ depending on various factors including the model year, and the type of vehicle, fuel and engine used.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources, and the act provides districts with authority to regulate indirect sources. Each district plan is required to either (1) achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each non-attainment pollutant or its precursors, or (2) to provide for implementation of all feasible measures to reduce emissions. Any planning effort for air quality attainment would thus need to consider both state and federal planning requirements.

Assembly Bills 1807 & 2588 - Toxic Air Contaminants

Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

Portable Equipment Registration Program

Owners or operators of portable engines and certain other types of equipment can register their units under the ARB's Statewide Portable Equipment Registration Program (PERP). PERP allows registered equipment to be operated throughout California without having to obtain individual permits from local air districts. To qualify, equipment must meet eligibility requirements, including applicable emissions standards.

REGULATORY ATTAINMENT DESIGNATIONS

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment

designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO_2 as "does not meet the primary standards," "cannot be classified," or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified," or "better than national standards." However, the ARB terminology of attainment, nonattainment, and unclassified is more frequently used. The U.S. EPA uses the same sub-categories for nonattainment status: serious, severe, and extreme. In 1991, U.S. EPA assigned new nonattainment designations to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

EKAPCD is currently designated as a nonattainment area with respect to the state ozone, and PM_{10} standards, as well as the national 8-hour ozone standard (EKAPCD 2016). The FCAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The FCAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The U.S. EPA has responsibility to review all state SIPs to determine conformance with the mandates of the FCAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures.

EAST KERN AIR POLLUTION CONTROL DISTRICT

The EKAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained. Responsibilities of the EKAPCD include, but are not limited to, preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The EKAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, the following:

- **Rule 201, Permits Required**. Rule 201 establishes permitting requirements for existing, modified and new stationary sources of emissions.
- **Rule 210.9, Construction or Reconstruction of Major Stationary Sources of Hazardous Air Pollutants**. Rule 210.9 requires all new and reconstructed major sources of hazardous air pollutants (HAPs) to utilize Best Available Control Technology for air toxics (TBACT).
- **Rule 402, Fugitive Dust.** Rule 402 addresses significant man-made dust sources from specified outdoor fugitive dust producing activities, which include: handling, storage, and transport of bulk storage piles, construction, demolition, excavation, extraction, and other earthmoving activities.
- **Rule 419, Nuisance**. Rule 419 states that a person shall not discharge, from any source, quantities of contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.
- **Rule 422, New Source Performance Standards**. Rule 422 establishes standards, criteria and requirements that are applicable to new emission sources. Rule 422 incorporates the provisions of CFR Title 40, Chapter I, Parts 60. This regulation includes various requirements specific to new stationary sources of emissions including spark ignition internal combustion engines.

Kern County APCD California Clean Air Act Ozone Air Quality Attainment Plan

Kern County APCD's California Clean Air Act Ozone Air Quality Attainment Plan was approved by the ARB on February 18, 1993. The AQAP identifies measures to reduce emissions from stationary sources located within the EKAPCD. As a moderate ozone nonattainment area, EKAPCD is required to adopt retrofit Reasonably Available Control Technology rules and regulations for all sources of ozone precursor emissions. Transportation control measures are no longer included in the AQAP. The latest ozone attainment report, released in 2005, identified significant reductions in ozone emissions due, in part, to implementation of stationary source rules and regulations, as well as, reduction in pollutant transport from upwind locations (EKAPCD 2005).

CITY OF RIDGECREST

City of Ridgecrest General Plan

The City of Ridgecrest General Plan Health & Safety Element includes policies to reduce the generation of air pollutants, to promote alternative methods of transportation, and to maximize the quality of life of City residents. Applicable policies and implementation measures are summarized below (City of Ridgecrest 2009).

- **Policy HS-2.7 Construction Methods.** The City shall require developments to be located, designed and constructed in a manner that would minimize the production of air pollutants and avoid land use conflicts.
- **Policy HS-2.9 Air Pollution Control Technology**. The City shall utilize the Best Available Control Measures (BACM) and Reasonably Available Control Measures (RACM) as adopted by the City to maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.
- **Policy HS-2.10 Cumulative Air Quality Impacts**. The City shall require developments to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts. Developers shall be required to present alternatives that reduce air emissions and enhance, rather than harm, the environment.
- **Policy HS-2.11 Dust Suppression Measures**. The City shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities. Techniques may include, but are not limited to, the following:
    - Site watering or application of dust suppressants,
    - Phasing or extension of grading operations,
    - Covering of stockpiles,
    - Suspension of grading activities during high wind periods (typically winds greater than 25 miles per hour),
    - Revegetation of graded areas.
- **Policy HS-2.12 Indirect Source Review**. The City shall require major development projects, as defined by the EKAPCD, to mitigate air quality impacts associated with the project. As feasible the City shall work with EKAPCD to determine mitigations that may include, but are not limited to the following:
    - Providing bicycle access and parking facilities,
    - Increasing density,
    - Encouraging mixed use developments,
    - Providing walkable and pedestrian-oriented neighborhoods,
    - Providing increased access to public transportation,

- Providing preferential parking for high-occupancy vehicles, car pools, or alternative fuels vehicles,
- Establishing telecommuting programs or satellite work centers.

- **Policy HS-2.13 Paving or Treatment of Roadways for Reduced Air Emissions**. The City shall require that all new roads be paved or treated to reduce dust generation where feasible. For new projects with unpaved roads, funding for roadway maintenance shall be addressed and secured prior to development approval.

PROJECT IMPACTS

THRESHOLDS OF SIGNIFICANCE

The EKAPCD's *Guidelines for Implementation of the California Environmental Quality Act (CEQA) of 1970 (as amended* 1999) identifies the criteria to be used for the evaluation of air quality impacts. The guidelines include recommended thresholds of significance to be used for the evaluation of short-term construction, long-term operational, odor, toxic air contaminant, and cumulative air quality impacts. Projects that exceed these recommended thresholds would be considered to have a potentially significant impact to human health and welfare. The thresholds of significance are summarized, as follows:

- Conflicts with or obstructs implementation of the applicable air quality plan;
- Violates any air quality standard or contributes substantially to an existing or projected air quality violation;
- Results in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). Specifically, if implementation of the project would exceed any of the following EKAPCD-recommended thresholds:

  Operational and Construction Emission Sources:
  - 25 tons per year for ROG
  - 25 tons per year for NO_x
  - 27 tons per year for SO_x (as SO_2)
  - 15 tons per year for PM_{10}

  Operational – Indirect Sources (motor vehicles):
  - 137 lbs per day of ROG
  - 137 lbs per day of NO_x
- Exposes sensitive receptors to substantial pollutant concentrations.
- Creates objectionable odors affecting a substantial number of people.

METHODOLOGY

Short-term construction emissions of were quantified using the California Emissions Estimator Model (CalEEMod), version 2013.2.2, based on estimated construction schedules, vehicle use, and off-road equipment anticipated to be required for construction. Emissions were calculated for both daily and annual conditions. Maximum daily and annual emissions were quantified based on the preliminary construction schedule anticipated to be required, including overlapping activities. Construction information would be similar for both build alternatives. Refer to Appendix A for emissions modeling assumptions and results.

Long-term operational emissions associated with energy use and motor vehicle use were quantified using the CalEEMod computer program based on project-specific information. Evaporative emissions associated with primary emission-source processes were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions from Publicly Owned Treatment Works (POTWs)*(1994). These emission factors were developed in a cooperative effort of POTWs and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP),

the Joint Emissions Inventory Program (JEIP) submitted to the SCAQMD per Rule 1179, and toxics inventories from individual California POTWs. Evaporative VOC emissions were calculated based on average-daily flow rates of 2.6 million gallons per day (mgd) for existing/no-build conditions and 3.6 mgd for proposed build conditions.

Long-term increases of toxic air contaminants were quantified based on emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions from Publicly Operated Treatment Works* for primary TAC emission sources. Potential short-term exposure to TACs and associated health risks were assessed based on a screening-level health risk assessments prepared for onsite evaporative emissions of TACs and the proposed emergency generator. To ensure a conservative analysis, the generator was assumed to be diesel fueled. The generator was assumed to operate 200 hours per year, in accordance with EKAPCD's permitting limitations.

Localized concentrations of CO were qualitatively assessed utilizing commonly applied screening methodologies identified in Caltran's Transportation Project-Level Carbon Monoxide Protocol (CO Protocol, 1996). Mobile-source emissions of CO are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. For this reason, modeling of mobile-source CO concentrations is typically recommended for sensitive land uses located near signalized roadway intersections that are projected to operate at unacceptable levels of service (i.e., LOS E or F). Localized CO concentrations associated with the proposed project would be considered less-than-significant impact if: (1) traffic generated by the proposed project would not result in deterioration of a signalized intersection to a level of service (LOS) of E or F; or (2) the project would not contribute additional traffic to a signalized intersection that already operates at LOS of E or F. In instances where the project exceeds these screening criteria, detailed dispersion modeling is recommended to further evaluate potential impacts in comparison to applicable ambient air quality standards (Caltrans 1996).

Potential exposure of nearby sensitive receptors to odorous emissions was qualitatively assessed, based on a review of project-generated emissions, proposed treatment processes, the location of nearby sensitive receptors, and odor-complaint information obtained from the EKAPCD.

PROJECT IMPACTS

Impact AQ-1: Would the project conflict with or obstruct implementation of any applicable air quality plan?

Projects that would result in a significant increase in emissions, in excess of EKAPCD significance thresholds, would also be considered to potentially conflict with or obstruct implementation of applicable air quality attainment plans. As noted in Impact AQ-3, the proposed project alternatives would not result in significant short-term or long-term increases of criteria air pollutants that would exceed applicable thresholds. As a result, implementation of the proposed project is not anticipated to result in a substantial increase in either direct or indirect emissions that would conflict with or obstruct implementation of applicable air quality plans. This impact is considered *less than significant*. (Refer to Impacts AQ-3 for a more detailed discussion of air quality impacts.)

Impact AQ-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

As discussed in Impacts AQ-3, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a *potentially significant* impact. This impact is

considered *potentially significant*. With implementation of Mitigation Measure AQ-1, this impact would be considered *less than significant*. (Refer to Impacts AQ-3 and AQ-4 for additional discussion of air quality impacts.)

Impact AQ-3: ***Would the project 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?***

Short-term Construction

Construction of improvements for both build alternatives would be similar, including the construction of treatment basins, clarifiers, lift stations, oxidation ditches, solids handling facilities, disinfection, and associated appurtenances. Most of the area within either the City site or the NAWS site will be disturbed and the resulting improvements will consist of basins, buildings, and paved or gravel areas. Construction of the proposed improvements for both alternatives would occur over an estimated 24-month period, beginning in 2017. The project's construction schedule would depend on a number of factors including regulatory approvals, funding commitments, and contractor availability and scheduling.

Short-term increases in emissions would occur during the construction process. Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the proposed project would result in the temporary generation of emissions associated with various activities, including site preparation, grading, excavation, concrete work, installation of piping and electrical, and building construction. Emissions would be largely associated with off-road equipment use. Estimated construction-generated emissions are summarized in Table 3.

During the initial year of construction, the proposed project would generate maximum uncontrolled annual emissions of approximately 0.4 tons/year of ROG, 4.7 tons/year of NO_x, 3.2 tons/year of CO, 0.7 tons/year of PM_{10}, and 0.4 tons/year of $PM_{2.5}$. During the second year of construction, the proposed project would generate maximum uncontrolled annual emissions of approximately 0.2 tons/year of ROG, 1.7 tons/year of NO_x, 1.3 tons/year of CO, 0.1 tons/year of PM_{10} and $PM_{2.5}$. Daily indirect construction-generated emissions of ROG and NO_X would be less than one pound per day. Construction-generated emissions would not exceed applicable EKAPCD significance thresholds. However, construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses. As a result, short-term construction-generated emissions of fugitive dust would be considered to have a *potentially significant* impact.

Table 3
Uncontrolled Construction-Generated Emissions of Criteria Air Pollutants
Project Alternatives 1 & 2

Construction Activity	Annual Emissions (Tons/Year)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction Year 1						
Mobilization	0.0	0.02	0.06	0.00	0.01	0.00
Grading & Site Work	0.13	1.48	0.99	0	0.20	0.13
Excavation	0.23	2.69	1.76	0.0	0.43	0.26
Concrete Work	0.02	0.21	0.16	0.00	0.02	0.01
Equipment Installation	0.02	0.23	0.12	0.00	0.01	0.01
Site Piping & Electrical	0.01	0.08	0.08	0.00	0.01	0.01
Total:	0.42	4.70	3.17	0.00	0.68	0.42
Significance Thresholds:	*25*	*25*	--	*27*	*15*	--
Exceed Thresholds?	*No*	*No*	*N/A*	*No*	*No*	*N/A*
Construction Year 2						
Concrete Work	0.03	0.28	0.24	0.00	0.02	0.02
Equipment Installation	0.07	0.69	0.35	0.00	0.04	0.04
Building Construction	0.02	0.10	0.13	0.00	0.02	0.01
Site Piping & Electrical	0.01	0.12	0.13	0.00	0.02	0.01
Final Grading & Paving	0.05	0.46	0.37	0.00	0.03	0.03
Startup	0.00	0.01	0.04	0.00	0.01	0.00
Total:	0.18	1.66	1.25	0.00	0.14	0.10
Significance Thresholds:	*25*	*25*	--	*27*	*15*	--
Exceed Thresholds?	*No*	*No*	*N/A*	*No*	*No*	*N/A*
Construction Activity	**Daily Indirect Emissions (lbs/day)[1]**					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Worker & Haul Truck Trips	*0.3*	1.1	4.6	0.0	1.1	0.3
Significance Thresholds[2]:	*137*	*137*	--	--	--	--
Exceed Thresholds?	*No*	*No*	*N/A*	*N/A*	*N/A*	*N/A*

Emissions were quantified using CalEEMod, version 2013.2.2. Totals may not sum due to rounding.

1. *EKAPCD daily emissions threshold applies to indirect on-road mobile-sources only. These thresholds typically apply to operational emissions, but have been included to ensure a conservative analysis of construction-generated emissions.*

-- No applicable threshold.

Refer to Appendix B for modeling results and assumptions.

Mitigation Measures

AQ-1: The following measures for the control of construction-generated PM shall be implemented:

a. Vehicle speed for all on-site construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.

b. All onsite unpaved roads and offsite unpaved project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. If water is used, watering shall occur a minimum of three times daily, sufficient to keep soil moist along actively used roadways. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered immediately prior to periods of high use (e.g., worker commute periods, truck convoys, etc.) Reclaimed (non-potable) water shall be used to the extent available.

c. Reduce and/or phase the amount of the disturbed area (e.g., grading, excavation) where possible.

d. All disturbed areas shall be sufficiently watered or stabilized by an EKAPCD-approved methods to prevent excessive dust. On dry days, watering shall occur a minimum of three times daily on actively disturbed areas. Watering frequency shall be increased whenever wind speeds exceed 15 mph or, as necessary, to prevent wind-blown dust exceeding 20% opacity at nearby residences or public roads. Reclaimed (non-potable) water shall be used to the extent available.

e. All clearing, grading, earth moving, and excavation activities will cease during periods when dust plumes of 20% or greater opacity affect public roads or nearby occupied structures.

f. All disturbed areas anticipated to be inactive for periods of 30 days, or more, shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips,

g. All active and inactive disturbed surface areas shall be compacted, where feasible.

h. Limit equipment and vehicle access to disturbed areas.

i. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities

j. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust emissions to a limit of 20% opacity. If necessary and where feasible, 3-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust.

k. Water shall be applied prior to and during the demolition of onsite structures sufficient to minimize wind-blown dust.

l. Where acceptable to the fire department, weed control will be accomplished by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering.

m. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code Section 23114.

n. Gravel pads, grizzly strips, or other material track-out control methods approved for use by the EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.

o. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or use rocks/grates at the project entry points, when necessary, to remove soil deposits and to minimize the track-out/deposition of soil onto nearby paved roadways.

p. Paved road surfaces located adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.

q. Portable equipment, 50 horsepower (hp) or greater, used during construction activities (e.g., portable generators) shall be registered with California statewide portable equipment registration (issued by the California Air Resources Board) or permitted by EKAPCD.

r. The designated construction monitor will document and immediately notify EKAPCD of any air quality complaints received. If necessary, the applicant and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.

s. Off-road equipment shall be maintained and properly tuned in accordance with manufacturer recommendations.

t. The owner/operator shall require that off-road diesel engines be shut off when not in use for more than five minutes to reduce emissions from idling, to the extent possible.

u. Alternatively fueled equipment (e.g., electric, propane, etc.), in lieu of diesel- or gasoline-fueled equipment, shall be used whenever possible and to the extent available.

v. All on-road and off-road equipment shall be fitted with emission control devices (e.g., diesel particulate filters, oxidation catalysts, etc.), per manufacturer recommendations.

w. The on-site idling of on-road diesel fueled trucks shall be restricted to no more than 5 minutes, per ARB engine idling limitations, excluding vehicles that need to idle as part of their operation, such as concrete mixer trucks.

Level of Significance after Mitigation

Implementation of the proposed mitigation measures would reduce fugitive dust emissions by approximately 50 to 61 percent. Additional measures have also been included that would reduce emissions of diesel PM from on-road vehicles and off-road equipment. Implementation of the proposed mitigation measures would also ensure compliance with applicable EKAPCD rules and regulations, including Rule 402, which imposes limitations on visible dust emissions at offsite locations and Rule 419 for nuisance-related impacts. With mitigation, this impact would be considered *less than significant*.

Long-term Operation

As noted earlier in this report, emissions of ozone-precursor pollutants (i.e., VOCs and NO_X) are the regional pollutants of primary concern within the basin. Primary emission sources associated with the operation of the WWTP include evaporative emissions of VOCs that occur during the treatment process, mobile-source emissions associated with the vehicle trips to and from the facility, as well as occasional emissions from onsite stationary combustion sources. Operational emissions associated with the plant's primary emission sources are discussed separately, as follows:

Wastewater Treatment Evaporative Emissions

Evaporative emissions of VOCs are typically associated with water treatment facilities that contain high levels of VOCs in the wastewater influent, such as water treatment facilities at industrial and agricultural uses. Wastewater influent at municipal WWTPs typically includes influent generated by residential, institutional, and commercial land uses, which typically contain only trace levels of VOCs. The City of Ridgecrest's sewer service area is primarily comprised of residential, retail, and light commercial/industrial uses. As a result, the waste sources and evaporative emissions of VOCs associated with existing and proposed WWTP operations are anticipated to be minor.

For municipal WWTPs, a majority of the VOCs commonly found in wastewater influent are often associated with the use of paint solvents, cleaning solutions, degreasing solutions, gasoline, and pesticides. However, the amount and types of industrial operations with waste discharges into municipal sewer systems are typically considered negligible, in part, due to existing regulatory discharge requirements. For instance, the U.S. EPA has established pretreatment standards for the discharge of industrial pollutants to publicly owned wastewater treatment facilities as part of the National Pretreatment Program. In California, the Regional Water Quality Control Board (RWQCB) implements this program and determines whether industrial discharges within a sewer service area warrant the permittee being subject to the pretreatment regulations. Source control measures are often considered the most effective method of reducing concentrations of VOCs in wastewater influent from industrial facilities. With incorporation of industrial source control measures, evaporative emissions of VOCs from municipal WWTPs are typically minor and, as a result, municipal WWTPs are typically not considered major sources of VOCs.

Sources of VOCs at municipal WWTPs are primarily associated with processes that result in the surface volatilization of emissions, particularly during the activated sludge process and secondary clarification, as well as surface volatilization during the thickening, dewatering, and handling of biosolids. Evaporative emissions associated with primary emission-source processes were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions form POTWs* (1994). These emission factors were developed in a cooperative effort of publicly-owned treatment works (POTWs) and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP), the Joint Emissions Inventory Program (JEIP) submitted to the SCAQMD per Rule 1179, and toxics inventories from individual California POTWs. These emissions factors are flow-based, specific to the individual treatment processes, and are considered to provide a conservative estimation of emissions.

Evaporative emissions were quantified for existing/no-build and proposed project alternatives, based on an existing average-daily flow rate of 2.6 mgd and a proposed project average-daily flow rate of 3.6 mgd. Because the treatment processes for proposed project alternatives would be similar, evaporative emissions associated with the proposed project alternatives would be similar. Evaporative VOC emissions for existing conditions/no-build alternative and proposed project alternatives are summarized in Table 4.

Additional sources of criteria air pollutants would include minor emissions associated with motor vehicle use, energy use, area sources (e.g., use of cleaning products, architectural coatings, etc.) In comparison to existing operations, the proposed project alternatives would result in an increase of approximately 10 employee trips/day and roughly 48 haul truck trips/month. In addition, the proposed project alternatives would also include the installation of an emergency standby power generator for use during power outages. The generator will be sized to operate all essential pumps, process equipment, and control systems. Based on preliminary estimates, an approximate 750 kW generator would be required. The existing generator would be required to comply with EKAPCD's permitting requirements and operational limitations. Accordingly, the emergency standby power generator would only be operated for maintenance, testing, required regulatory purposes, and during emergency situations.

Operational emissions associated with existing and proposed project conditions, including evaporative VOC emissions and emissions from mobile, stationary, and area sources, are summarized in Table 5. In comparison to existing conditions, the proposed project alternatives would result in overall net increases of approximately 0.4 lbs/day of ROG, 0.5 lbs/day of NO_X, and 0.8 lbs/day of CO. Operational emissions of SO_X and PM would be negligible, approximately 0.04, or less. The proposed project alternatives would not result in increased emissions of criteria air pollutants that would exceed applicable significance thresholds. This impact is considered *less than significant*. No mitigation is required.

Table 4
Wastewater Treatment Plant Process VOC Emissions

Process	VOC Emissions (lbs/year) [1]
Existing Conditions/No-Build Alternative	
Headworks	0.3
Grit Removal	1.6
Primary Sedimentation	104.0
Flow Equalization	278.1
Activated Sludge	78.0
Secondary Clarifiers	31.2
Effluent Evaporation Ponds	1,361.3
Sludge Digestion	0.1
Sludge Drying Beds	33.8
Total Emissions (lbs/year):	1,966.3
Total Emissions (tons/year):	1.0
Proposed Build Alternatives	
Headworks	310.9
Grit Removal	2.2
Activated Sludge	108.0
Secondary Clarifiers	43.2
Effluent Filtration	1.1
Chlorination	1.6
Effluent Evaporation Ponds	1,884.8
Sludge Digestion	36.9
Sludge Dewatering	216.0
Sludge Cake Storage	22.0
Sludge Cake Truck Loading	6.3
Sludge Drying Beds	46.8
Total Emissions (lbs/year):	2,679.7
Total Emissions (tons/year):	1.3

Emissions were calculated using emission factors derived from Tri-TAC Guidance Document on Control Technology for VOC Air Emissions from POTWs (1994) based on an average flow rate of 2.6 mgd for existing/no-project conditions and 3.6 mgd for proposed project build alternatives 1 and 2.

Table 5
Summary of Operational Emissions of Criteria Air Pollutants
Direct & Indirect Sources

Construction Activity	Annual Emissions (Tons/Year) [1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Existing Conditions/No-Build Alternative						
WWTP Process Emissions	1.0					
Area Sources	0.01	0.00	0.00	0.00	0.00	0.00
Motor Vehicle Use [2]	0.00	0.02	0.05	0.00	0.01	0.00
Total:	*1.01*	*0.02*	*0.05*	*0.00*	*0.01*	*0.00*
Proposed Build Alternatives						
WWTP Process Emissions	1.3					
Area Sources	0.04	0.00	0.00	0.00	0.00	0.00
Emergency Generator [3]	0.02	0.14	0.08	0.00	0.00	0.00
Motor Vehicle Use [4]	0.05	0.36	0.72	0.00	0.05	0.02
Total:	*1.41*	*0.50*	*0.80*	*0*	*0.05*	*0.02*
Net Increase Compared to Existing:	*0.40*	*0.48*	*0.75*	*0*	*0.04*	*0.02*
Significance Thresholds:	*25*	*25*	*--*	*27*	*15*	*--*
Exceed Thresholds?	*No*	*No*	*N/A*	*No*	*No*	*N/A*

1. Emissions were quantified using CalEEMod, version 2013.2.2. Emissions associated with energy use and waste generation are negligible. Daily indirect source emissions of ROG, NO_X, SO_X, and PM_{10} for no-build and proposed build alternatives would be approximately 0.1 lbs/day, or less, and would not exceed EKAPCD's significance thresholds of 137 lbs/day.
2. Assumes two employees daily; 16 septage haul truck trips monthly.
3. Assumes a maximum of 200 hours annually, In accordance with EKAPCD permitting requirements.
4. Assumes 12 employees daily; 24 septage and 30 biosolids removal haul truck trips monthly.
-- No applicable threshold.
Refer to Appendix B for modeling results and assumptions.

Impact AQ-4: Would the project expose sensitive receptors to substantial pollutant concentrations?

Short-term Exposure

Implementation of the proposed project would result in short-term emissions of fugitive PM associated with project construction. Localized pollutants of primary concern typically associated with construction projects are commonly associated with increased emissions of PM generated by ground disturbance, including site preparation and grading. However, as previously noted, the proposed project would not require the demolition of existing structures, nor would the proposed project result in emissions that would exceed EKAPCD significance thresholds. Compliance with applicable EKAPCD rules and regulations, including but not limited to Rule 402, would minimize potential nuisance impacts to occupants of nearby land uses and would also minimize potential exposure of nearby sensitive receptors to Coccidioides spores which may become airborne during soil disturbance activities (e.g., grading, excavation, etc.). As previously discussed, exposure to Coccidioides spores could result in increased occurrences of Valley Fever.

The project would also generate short-term emissions of diesel-exhaust PM. For sensitive land uses, the calculation of cancer risk associated with exposure of TACs is typically calculated based on a 70-year period of exposure. The use of diesel-powered construction equipment, however, would be temporary and episodic and would occur over a relatively short period (e.g., 24 months). For this reason, diesel-exhaust PM generated by project construction, in and of itself, would not be expected to create conditions where the probability of contracting cancer is greater than 10 in 1 million for nearby receptors.

Predicted increases in cancer risks associated with short-term exposure to diesel-exhaust emissions would be considered *less than significant*. However, because construction activities could result in increased concentrations of fugitive dust that could cause a nuisance to nearby land uses and potential increases in occurrences of Valley Fever, this impact is considered *potentially significant*. With implementation of Mitigation Measure AQ-1 this impact would be considered *less than significant*. (Refer to Impacts AQ-3 for additional discussion of short-term air quality impacts.)

Long-term Exposure

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas formed when carbon in fuel is not burned completely; a component of combustion emissions. CO reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system, and impairs vision, causes dizziness, and can also lead to unconsciousness or death. Carbon monoxide transport is extremely limited and disperses rapidly with distance from the source under normal meteorological conditions. Under certain meteorological conditions, however, CO concentrations close to emission sources, such as congested roadways or intersections, may reach unhealthy levels. Localized concentrations of CO can adversely affect nearby sensitive receptors (residents, school children, hospital patients, the elderly, etc.). As a result, CO emissions are typically evaluated at a local rather than regional level.

In comparison to existing conditions, the proposed build alternatives would result in an increase of approximately ten employee trips/day and roughly 38 haul truck trips/month. The proposed build alternatives would not result in a substantial increase in vehicle trips that would affect nearby intersection operations. As a result, implementation of the proposed project would not result in a significant contribution to nearby roadway intersections. Based on this information and given the relatively low background CO concentrations in the project area, this impact would be considered *less than significant*. No mitigation is required.

Toxic Air Contaminants

Increases of TACs associated with the proposed project alternatives would be primarily associated with the operation of the proposed onsite emergency generator (if diesel powered), as well as, evaporative emissions of TACs from onsite treatment processes. TAC emissions and associated health risks associated with the proposed project alternatives are discussed, as follows:

Emergency Generator (Alternatives 1 & 2)

As previously noted, the proposed project alternatives would include the installation of an emergency standby power generator for use during power outages. The specifications for the generator, including size and fuel source, have not yet been identified. However, based on preliminary estimates, an approximate 750 kW generator would be required. The existing generator would be required to comply with EKAPCD's permitting requirements and operational limitations. Accordingly, the emergency standby power generator would only be operated for maintenance, testing, required regulatory purposes, and during emergency situations. The emergency generator would be located at the proposed WWTP. Under Alternative 1, the nearest sensitive receptors include residential dwellings located approximately 1,750 feet to the southeast of the proposed plant. Under Alternative 2, nearest residences are located approximately 960 feet to the east of the proposed plant.

A screening-level health risk assessment was conducted for the proposed emergency generator. To ensure a conservative analysis, the generator was assumed to be diesel fueled. The generator was assumed to operate 200 hours per year, in accordance with EKAPCD's permitting limitations. As noted earlier in this report, diesel-exhaust PM has been identified as a TAC. For Alternative 1, the proposed generator would result in increased cancer risks of approximately 0.2 in a million and a chronic/acute hazard index of 0.02, or less, at the nearest receptor. For Alternative 2, the proposed generator would result in increased cancer risks of approximately 0.8 in a million and a chronic/acute hazard index of 0.06, or less, at the nearest receptor. Emissions modeling assumptions and results are included in Appendix B.

Wastewater Treatment Process Emissions

As with emissions of VOCs/ROGs discussed earlier in this report, evaporative TACs emitted by WWTPs are typically considered minor. Because most emissions of TACs occur during the treatment process in which dissolved volatile organic compounds are volatilized, emissions of TACs are generally considered to be roughly proportional to the wastewater influent flow rates associated with the individual treatment processes. Evaporative emissions were quantified based on an existing flow rate of 2.6 mgd and a projected project flow rate of 3.6 mgd. A screening-level health risk assessment was prepared to analyze cancer, chronic non-cancer, and acute non-cancer health risks. The annual emissions of TACs and associated health risks are summarized in Table 6 and discussed below. Emissions modeling assumptions and results are included in Appendix B. As depicted, the proposed build alternatives would result in predicted cancer risks of less than one in ten million and the predicted hazard index for non-cancer acute and chronic risks would be less than one at the nearest sensitive receptor.

For the assessment of potential health-related impacts associated with TACs, the EKAPCD has established stationary source cancer-risk thresholds of 10 in one million and a non-cancer risk hazard index of one. Stationary emission sources that exceed these thresholds would be considered to have a potentially significant impact. Based on the screening-level health risk assessments conducted, combined health risks associated with the operation of the proposed emergency generator and evaporative TAC emissions with treatment processes would result in a predicted cancer risk at the nearest receptor of 0.24 in one million for Build Alternative 1 and 0.84 in one million for Build Alternative 2. The hazard index for both acute and chronic non-cancer inhalation risk at the nearest receptors would be 0.02, or less, for Build Alternative 1 and 0.06, or less, for Build Alternative 2. Predicted cancer and non-cancer health risks would not exceed EKAPCD's significance thresholds.

It is also important to note that the proposed emergency generator would be required to comply with EKAPCD permitting requirements. In particular, EKAPCD Rule 201 establishes permitting requirements for stationary sources. In the event that the emergency generator is diesel fueled, implementation of TBACT may also be required, in accordance with Rule 210.9. Compliance with EKAPCD rules and regulations would ensure that health risks to nearby receptors would not exceed applicable standards. For these reasons, this impact would be considered ***less than significant***. No mitigation is required.

Table 6
Operational TACs & Health Risks Associated with Water Treatment Processes

TACs	Emissions (lbs/year)		
	No-Build Alternative[1]	Proposed Project Alternative 1[2]	Proposed Project Alternative 2[3]
Benzene	0.1	9.0	9.0
Ethyl-Benzene	0.1	11.9	11.9
Toluene	0.5	72.1	72.1
Xylenes	0.0	22.8	22.8
Chloroform	10.4	14.3	14.3
Methylene Chloride	19.4	26.7	26.7
Tetrachloroethylene	13.2	18.2	18.2
1,1,1-Trichloroethane	7.7	10.6	10.6
Acetone	81.4	60.5	60.5
Methyl Ethyl Ketone (MEK)	16.3	12.1	12.1
Methyl Isobutyl Ketone (MIBK)	14.7	11.0	11.0
Distance to Nearest Sensitive Land Use (feet):	1,575	1,750	960
Carcinogenic Risk:	0.003	0.01	0.1
Significance Threshold[4]:	10	10	10
Exceeds Cancer Risk Threshold?	No	No	No
Non-Carcinogenic Acute Risk:	0.001	0.001	0.01
Non-Carcinogenic Chronic Risk:	0.000	0.001	0.00
Significance Threshold[4]:	1	1	1
Exceeds Non-Cancer Risk Thresholds?	No	No	No

1. *Based on distance of 1,575 feet to the nearest receptor to the existing WWTP boundary.*
2. *Based on distance of 1,750 feet to the nearest receptor to the proposed WWTP boundary.*
3. *Based on distance of 960 feet to the nearest receptor to the proposed WWTP boundary.*
4. *The significance threshold for increased cancer risk is ten in one million. Non-cancer acute and chronic significance thresholds are based on a hazard index of one.*

Refer to Appendix B for modeling results and assumptions.

Impact AQ-5: Would the project create objectionable odors affecting a substantial number of people?

The project would increase the treatment capacity of the plant from an existing average-daily flow of approximately 2.6 mgd to approximately 3.6 mgd. However, an increase in odor potential (e.g. treatment of higher volumes of wastewater) does not necessarily result in a greater odor impact to the surrounding community. The location, size, and type of the treatment facilities, the sensitivity of nearby receptors, and the direction and speed of prevailing winds are all factors in determining whether odors from the treatment plant are likely to have a significant effect on the surrounding community. Processes having the greatest potential for odor generation at WWTPs are typically associated with sludge handling and drying practices. Potential increases in odors may be offset by improvements in design and/or operational procedures, including the use of chemicals and incorporation of additional treatment technologies. Design

technologies considered to be the most effective in controlling onsite odors most often include the enclosure of process facilities and the treatment of air emitted from odor-generating equipment.

No odor complaints have been filed during the last five years for the City of Ridgecrest wastewater treatment facility (EKAPCD 2016). In comparison to the existing facility, the proposed project would result in additional treatment processes that would help to reduce the odor-generation potential of the facility, including effluent filtration, chlorination, and aerobic sludge digestion. Sludge handling activities, however, could result in an increase in the facilities odor-generation potential.

WWTPs located within approximately one mile of sensitive land uses are generally considered to have a potentially significant impact with regard to nuisance odors. Under Alternative 1, the nearest residences would be located approximately 1,750 feet from the proposed treatment facility. Under Build Alternative 2, the nearest residences would be located approximately 960 feet from the treatment facility. Given that residential land uses are located within one mile of the proposed treatment plants and the proposed project alternatives would result in a potential increase in odor-generating potential, this impact is considered *potentially significant*.

Mitigation Measure

AQ-2: An Odor Control Mitigation Plan (OCMP) shall be prepared for the proposed project to ensure consistency with EKAPCD Rule 419 for the control of nuisance impacts to nearby sensitive land uses. The OCMP shall identify processes that would have a high potential for odor generation and appropriate operational controls and procedures for the control and reduction of odorous emissions. The OCMP shall be submitted to and approved by the City of Ridgecrest Planning Department prior to operation.

Level of Significance after Mitigation

Mitigation Measure AQ-2 would require the preparation of an odor control plan. Implementation of the OCMP would help to minimize and control odorous emissions from the facility. In addition, the OCMP would also help to ensure compliance with applicable EKAPCD Rule 419 for the control of nuisance impacts. With mitigation, this impact would be considered ***less than significant***.

GREENHOUSE GASES AND CLIMATE CHANGE

EXISTING SETTING

To fully understand global climate change, it is important to recognize the naturally occurring "greenhouse effect" and to define the greenhouse gases (GHGs) that contribute to this phenomenon. Various gases in the earth's atmosphere, classified as atmospheric GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Primary GHGs attributed to global climate change, are discussed, as follows:

- **Carbon Dioxide**. Carbon dioxide (CO_2) is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can

also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere (U.S. EPA 2008).

- **Methane**. Methane (CH_4) is a colorless, odorless gas that is not flammable under most circumstances. CH_4 is the major component of natural gas, about 87percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (enteric fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of methane to the atmosphere. Natural sources of methane include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. Methane's atmospheric lifetime is about 12 years (U.S. EPA 2015a).

- **Nitrous Oxide**. Nitrous oxide (N_2O) is a clear, colorless gas with a slightly sweet odor. N_2O is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years (U.S. EPA 2015b).

- **Hydrofluorocarbons.** Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products. The only significant emissions of HFCs before 1990 were of the chemical HFC-23, which is generated as a byproduct of the production of HCFC-22 (or Freon 22, used in air conditioning applications). The atmospheric lifetime for HFCs varies from just over a year for HFC-152a to 260 years for HFC-23. Most of the commercially used HFCs have atmospheric lifetimes of less than 15 years (e.g., HFC-134a, which is used in automobile air conditioning and refrigeration, has an atmospheric life of 14 years) (U.S. EPA 2015c).

- **Perfluorocarbons.** Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F1_4). Natural geological emissions have been responsible for the PFCs that have accumulated in the atmosphere in the past; however, the largest current source is aluminum production, which releases CF_4 and C_2F_6 as byproducts. The estimated atmospheric lifetimes for CF_4 and C_2F_6 are 50,000 and 10,000 years, respectively (U.S. EPA 2015a).

- **Nitrogen Trifluoride**. Nitrogen trifluoride (NF_3) is an inorganic, colorless, odorless, toxic, nonflammable gas used as an etchant in microelectronics. Nitrogen trifluoride is predominantly employed in the cleaning of the plasma-enhanced chemical vapor deposition chambers in the production of liquid crystal displays and silicon-based thin film solar cells. It has a global warming potential of 17,200 carbon dioxide equivalents (CO_2e). While NF_3 may have a lower global warming potential than other chemical etchants, it is still a potent GHG. In 2009, NF_3 was listed by California as a high global warming potential GHG to be listed and regulated under Assembly Bill (AB) 32 (Section 38505 Health and Safety Code).

- **Sulfur Hexafluoride**. Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80percent of all SF_6 produced worldwide. Leaks of SF_6 occur from aging equipment and during equipment maintenance and servicing. SF_6 has an atmospheric life of 3,200 years (U.S. EPA 2015e).

- **Black Carbon**. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Black carbon contributes to climate change both directly by absorbing sunlight and indirectly by depositing on snow and by

interacting with clouds and affecting cloud formation. Black carbon is considered a short-lived species, which can vary spatially and, consequently, it is very difficult to quantify associated global-warming potentials. The main sources of black carbon in California are wildfires, off-road vehicles (locomotives, marine vessels, tractors, excavators, dozers, etc.), on-road vehicles (cars, trucks, and buses), fireplaces, agricultural waste burning, and prescribed burning (planned burns of forest or wildlands). California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (ARB 2014).

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential (GWP). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. Table 7 shows the GWP for the GHG emissions of typical concern with regard to community development projects, based on a 100-year time horizon. As indicated, Methane traps over 25 times more heat per molecule than CO_2, and N_2O absorbs roughly 298 times more heat per molecule than CO_2. Additional GHG with high GWP include Nitrogen trifluoride, Sulfur hexafluoride, Perfluorocarbons, and black carbon.

Table 7
Global Warming Potential for Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100-year)
Carbon Dioxide (CO_2)	1
Methane (CH_4)	25
Nitrous Dioxide (N_2O)	298
**Based on IPCC GWP values for 100-year time horizon*	

SOURCES OF GHG EMISSIONS

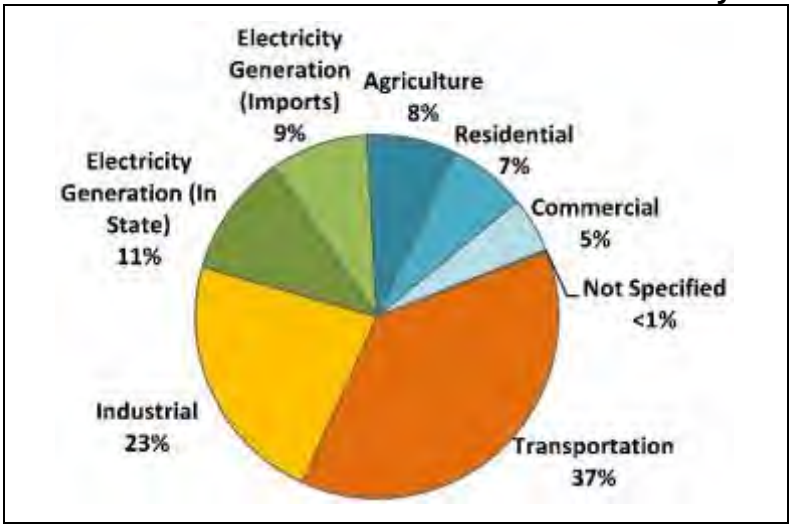
On a global scale, GHG emissions are predominantly associated with activities related to energy production; changes in land use, such as deforestation and land clearing; industrial sources; agricultural activities; transportation; waste and wastewater generation; and commercial and residential land uses. World-wide, energy production including the burning of coal, natural gas, and oil for electricity and heat is the largest single source of global GHG emissions (U.S. EPA 2015d).

In 2013, GHG emissions within California totaled 459 million metric tons (MMT) of CO_2e. GHG emissions, by sector, are summarized in Figure 4. Within California, the transportation sector is the largest contributor, accounting for approximately 37 percent of the total state-wide GHG emissions. Emissions associated with industrial uses are the second largest contributor, totaling roughly 23 percent. Electricity generation totaled roughly 20 percent (ARB 2014).

EFFECTS OF GLOBAL CLIMATE CHANGE

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems, increased strength and frequency of storms, extreme heat events, increased air pollution episodes, and the consequence of these effects on the economy.

Figure 4
California Greenhouse Gas Emissions Inventory



Source: ARB 2014a.

Within California, climate changes would likely alter the ecological characteristics of many ecosystems throughout the state. Such alterations would likely include increases in surface temperatures and changes in the form, timing, and intensity of precipitation. For instance, historical records are depicting an increasing trend toward earlier snowmelt in the Sierra Nevada. This snow pack is a principal supply of water for the state, providing roughly 50 percent of state's annual runoff. If this trend continues, some areas of the state may experience an increased danger of floods during the winter months and possible exhaustion of the snowpack during spring and summer months. An earlier snowmelt would also impact the State's energy resources. Currently, approximately 20 percent of California's electricity comes from hydropower. An early exhaustion of the Sierra snowpack, may force electricity producers to switch to more costly or non-renewable forms of electricity generation during spring and summer months. A changing climate may also impact agricultural crop yields, coastal structures, and biodiversity. As a result, resultant changes in climate will likely have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry (ARB 2015).

REGULATORY FRAMEWORK

FEDERAL

INTERNATIONAL REGULATION AND THE KYOTO PROTOCOL

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the United States announced a strategy to reduce the greenhouse gas intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012.

As part of the commitments to the UNFCCC, the U.S. EPA has developed an inventory of anthropogenic emissions by sources and removals by sinks of all GHGs. This inventory is periodically updated, with the latest update in 2010. The U.S. EPA reports that total US emissions rose by 14 percent from 1990 to 2007, while the US gross domestic product increased by 59 percent over the same period. A 2.9 percent decrease in emissions was noted from 2007 to 2008, which is reported to be attributable to climate conditions, reduced use of petroleum products for transportation, and increased use of natural gas over other fuel sources. The inventory notes that the transportation sector emits about 32 percent of CO_2 emissions, with 53 percent of

those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 21 percent of CO_2 emissions (U.S. EPA 2015a).

As a part of the U.S. EPA's responsibility to develop and update an inventory of U.S. GHG emissions and sinks, the U.S. EPA compared trends of other various US data. Over the period between 1990 and 2008, GHG emissions grew at an average rate of about 0.7 percent per year. Population growth was slightly higher at 1.1 percent, while energy and fossil fuel consumption grew at 0.9 and 0.8 percent, respectively. Gross domestic product and energy generation grew at much higher rates.

Executive Order 13514

Executive Order 13514 is focused on reducing GHGs internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

On April 2, 2007, in Massachusetts v. U.S. EPA, 549 U.S. 497 (2007), the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator found that the current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles (Caltrans 2015).

STATE

Assembly Bill 1493

AB 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the ARB to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from federal clean air regulations, as the State is authorized to do under the Clean Air Act, to allow the State to require reduced tailpipe emissions of CO_2. In late 2007, the U.S. EPA denied California's waiver request and declined to promulgate adequate federal regulations limiting GHG emissions. In early 2008, the State brought suit against the U.S. EPA related to this denial.

In January 2009, President Obama instructed the U.S. EPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the U.S. EPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order No. S-3-05

Executive Order S-3-05 (State of California) proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, to the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the secretary of the California Environmental Protection Agency to coordinate a multi-agency effort to reduce greenhouse gas emissions to the target levels. The secretary will also submit biannual reports to the governor and state legislature describing (1) progress made toward reaching the emission targets, (2) impacts of global warming on California's resources, and (3) mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the secretary of CalEPA created a Climate Action Team made up of members from various state agencies and commissions. The Climate Action Team released its first report in March 2006 and continues to release periodic reports on progress. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Executive Order S-6-06

Executive Order S-6-06 (State of California), signed on April 25, 2006, established two primary goals related to the use of biofuels within California, including: (1) by 2010, 20 percent of its biofuels need to be produced within California; increasing to 40 percent by 2020 and 75 percent by 2050; and (2) by 2010, 20 percent of the renewable electricity should be generated from biomass resources within the state, maintaining this level through 2020.

Executive Order No. S-01-07

Executive Order S-1-07, the Low Carbon Fuel Standard (LCFS) was issued on January 18, 2007 and called for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. This order instructed the CalEPA to coordinate activities between the University of California, the California Energy Commission (CEC) and other state agencies to develop and propose a draft compliance schedule to meet the 2020 target. Furthermore, it directed ARB to consider initiating a regulatory proceedings to establish and implement the LCFS. In response, ARB adopted the LCFS regulation in 2010.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32 (ARB 2014b).

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of roughly 169 million metric tons of CO_2e, or approximately 29 percent from the state's projected 2020 emissions level in comparison to business-as-usual (BAU) 2002–2004 conditions. The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 $MMTCO_2e$), implementation of the Low Carbon Fuel Standard (15.0 $MMTCO_2e$) program, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 $MMTCO_2e$), and a renewable portfolio standard for electricity production (21.3 $MMTCO_2e$). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

Key components of the Scoping Plan focus on energy efficiency, conservation, and use of renewable energy. For instance, the Renewable Portfolio Standard, which is intended to increase the percentage of renewables in California's electricity mix to 33 percent by year 2020, would result in a reduction of 21.3 $MMTCO_2e$. Sources of renewable energy include, but are not limited to, biomass, wind, solar, geothermal, hydroelectric, and anaerobic digestion. Increasing the use of renewables will decrease California's reliance on fossil fuels, thus reducing GHG emissions. The Scoping Plan also recognizes that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions.

The Scoping Plan was first approved by the Board in 2008 and must be updated every five years. The first update of the Scoping Plan was approved by ARB on May 22, 2014, which looked past 2020 to set mid-term goals to reach post 2020 emission-reduction targets.

Executive Order B-30-15

On April 29, 2015, the Governor issued Executive Order B-30-15 establishing a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. All state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. ARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to achieve continue reductions in GHG emissions.

Senate Bill 1368

Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a greenhouse gas emissions performance standard for baseload generation from investor-owned utilities by February 1, 2007. The bill also required the CEC to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a baseload combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and the CEC.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. Executive Order S-14-08 was later superseded by Executive Order S-21-09 on September 15, 2009. Executive Order S-21-09 directed ARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. This Executive Order was superseded by statute SB X1-2 in 2011, which obligates all California electricity providers, including investor-owned utilities and publicly owned utilities, to obtain at least 33 percent of their energy from renewable electrical generation facilities by 2020, with interim targets of 20 percent by 2013 and 25 percent by 2016.

ARB is required by current law, AB 32 of 2006, to regulate sources of GHGs to meet a state goal of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The CEC and CPUC serve in advisory roles to help ARB develop the regulations to administer the 33 percent by 2020 requirement. ARB is also authorized to increase the target and accelerate and expand the time frame.

Mandatory Reporting of Greenhouse Gas Emissions

Reporting of GHGs by major sources is required by the California Global Warming Solutions Act (AB 32, 2006). Revisions to the existing ARB mandatory GHG reporting regulation were considered at the board hearing on December 16, 2010. The revised regulation was approved by the California Office of Administrative Law and became effective on January 1, 2012. The revised regulation affects industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, and carbon dioxide, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation

The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial

plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass around 360 businesses throughout California and nearly 85 percent of the state's total greenhouse gas emissions.

Under the cap-and-trade regulation, companies must hold enough emission allowances to cover their emissions, and are free to buy and sell allowances on the open market. California held its first auction of greenhouse gas allowances on November 14, 2012. California's GHG cap-and-trade system will reduce GHG emissions from regulated entities by approximately 16 percent, or more, by 2020.

California Building Code

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvement to real property. The California Building Code is adopted every three years by the Building Standards Commission (BSC). In the interim, the BSC also adopts annual updates to make necessary mid-term corrections. The CBC standards apply statewide; however, a local jurisdiction may amend a CBC standard if it makes a finding that the amendment is reasonably necessary due to local climatic, geological, or topographical conditions.

Green Building Standards

In essence, green buildings standards are indistinguishable from any other building standards. Both are contained in the California Building Code and regulate the construction of new buildings and improvements. The only practical distinction between the two is that whereas the focus of traditional building standards has been protecting public health and safety, the focus of green building standards is to improve environmental performance.

AB 32, which mandates the reduction in greenhouse gas emissions in California to 1990 levels by 2020, increased the urgency around the adoption of green building standards. In its scoping plan for the implementation of AB 32, ARB identified energy use as the second largest contributor to California's GHG emissions, constituting roughly 25 percent of all such emissions. In recommending a green building strategy as one element of the scoping plan, ARB estimated that green building standards would reduce GHG emissions by approximately 26 $MMTCO_2e$ by 2020.

The green buildings standards, commonly referred to as CalGreen standards, were most recently updated in 2013. The 2013 building energy efficiency standards are 25 percent more efficient than previous standards for residential construction and 30 percent more efficient for non-residential construction (CEC 2015).

Eastern Kern Air Pollution Control District

The EKAPCD has not yet adopted recommended significance thresholds for the evaluation of development projects subject to CEQA review. However, on March 8, 2012, the EKAPCD adopted an internal policy for the evaluation of GHG emission impacts associated with stationary source projects. The EKAPCD's policy applies to stationary source projects for which the EKAPCD serves as the lead CEQA agency. In accordance with this policy, stationary source emissions of GHGs would be considered to have a less-than-significant impact if project-specific GHG emissions would be less than 25,000 tons per year (EKAPACD 2012).

PROJECT IMPACTS

THRESHOLDS OF SIGNIFICANCE

In accordance with CEQA Guidelines, a project would be considered to have a significant impact to climate change if it would:

a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or,

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

The EKAPCD has not yet adopted recommended significance thresholds for the evaluation of development projects subject to CEQA review. In addition, the City of Ridgecrest has not yet adopted a GHG-reduction plan. The proposed wastewater treatment facility would be subject to EKAPCD permitting requirements for stationary sources. As a result, in the absence of a recommended significance threshold and applicable GHG-reduction plan, this analysis relies on EKAPCD's GHG policy for the analysis of stationary source GHG emissions. Accordingly, project-generated emissions that would exceed 25,000 $MTCO_2e$/year would be considered to have a potentially significant impact on the environment that could interfere with AB-32 GHG-reduction goals.

METHODOLOGY

GHG emissions were quantified using the CalEEMod computer program, based on project-specific construction and operational information. Evaporative emissions of methane associated with WWTP processes were calculated based on methodologies derived from the *Local Government Operations Protocol for the Quantification and Reporting of GHG Emissions Inventories* (2010). Construction-generated emissions were amortized based on a 25-year project life. To be conservative, amortized construction-generated emissions of GHGs were included in the estimated operational GHG emissions assessment. Total operational emissions, including amortized construction GHG emissions were compared to EKAPCD's GHG significance threshold for determination of impact significance.

PROJECT IMPACTS

Impact GHG-1: ***Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? and***

Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Implementation of the proposed project would result in short-term construction and long-term operational emissions of GHGs. Short-term construction and long-term operational emissions of GHGs are discussed, as follows:

Short-term Construction

Construction of the proposed facilities would occur over an approximate 24 month period. Estimated increases in GHG emissions associated with construction of the proposed project are summarized in Table 8. As depicted, project construction would generate approximately 424 $MTCO_2e$ during the first year of construction and approximately 199 $MTCO_2e$ during the second year of construction. In total, project construction would generate approximately 623 $MTCO_2e$. Amortized GHG emissions, when averaged over an assumed 25-year project life, would total approximately 25 $MTCO_2e$/year. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative. Construction-generated emissions would be similar for both build alternatives.

Table 8
Construction-Generated Emissions of GHG Emissions
Proposed Build Alternatives

Construction Year	Annual Emissions ($MTCO_2e$/Year)[1]
Year 1	424
Year 2	199
Total Emissions all Project Components:	623
Amortized Net Change in Construction Emissions[2]:	24.9

1. Assumes all construction components would occur within a single year.
2. Amortized emissions are quantified based on an estimated 25-year project life.

Long-term Operations

Operational emissions would be primarily associated with energy use, as well as, increases in motor vehicle use. Waste generation would also result in slight increases in GHG emissions. Operational emissions are summarized in Table 9. With the inclusion of amortized construction emissions the project would result in a net increase of approximately 511 $MTCO_2e$/year. Operational emissions would be similar for both build alternatives. Annual GHG emissions would not exceed the threshold of 25,000 $MTCO_2e$. The proposed project would not result in GHG emissions that would have a significant impact on the environment, nor would the proposed project conflict with applicable GHG-reduction plans, policies or regulations. This impact would be considered *less than significant*. No mitigation is required.

Table 9
Operational GHG Emissions
Proposed Build Alternatives

Source	Annual Emissions ($MTCO_2e$/year)[1]
Existing Conditions/No-Build Alternative	
WWTP Process Emissions[7]	37
Energy Use[1]	1,122.0
Motor Vehicle Use[2]	10.4
Waste Generation[3]	0.9
Total:	1,170.3
Proposed Build Alternatives	
WWTP Process Emissions[7]	Negligible
Energy Use[4]	1,568.5
Motor Vehicle Use[5]	134.8
Waste Generation[3]	3.2
Total:	1,706.5
Net Increase Compared to No-Build Alternative:	536.2
Net Increase + Amortized Construction[6]:	511.3
Significance Threshold:	25,000
Exceeds Threshold?:	No

1. Energy use assumes wastewater treatment of 2.6 mgd/day, 1,500 square feet of existing structures.
2. Assumes two employees daily; 16 septage haul truck trips monthly.
3. Based on model defaults for Kern County.
4. Energy use assumes wastewater treatment of 3.6 mgd, 5,575 square feet of proposed building area.
5. Assumes 12 employees/day; 24 septage and 30 biosolids removal haul truck trips monthly.
6. Based on an assumed 25-year project life. Refer to Table 8.
7. Process emissions for existing conditions/no-build alternative are based on emissions of methane for older facilities that do not incorporate aerobic treatment. The U.S. EPA considers methane emissions from modern WWTPs with aerobic treatment to be negligible.
Refer to Appendix B for emissions modeling assumptions and results.

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APPENDIX A

Federal Air Quality General Conformity

Federal Code of Regulations

Title 40 of the Code of Federal Regulations, Part 93, requires that the federal government not engage, support, or provide financial assistance for licensing, permitting, or approving any activity not conforming to an approved CAA implementation plan. Title I, section 176(c)(1), of the CAA defines conformity as the upholding of "an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving attainment of such standards." Accordingly, proposed Federal actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of any NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

The General Conformity regulations take into account air pollutant emissions associated with actions that are federally funded, licensed, permitted, or approved. These regulations ensure that emissions associated with federal actions do not contribute to air quality degradation, thus preventing the achievement of state and federal air quality goals. In short, General Conformity refers to the process of evaluating plans, programs, and projects to determine and demonstrate that they meet the requirements of the CAA and applicable SIP. In general, the General Conformity regulations divide the air conformity process into two distinct areas: (1) Applicability Analysis, and (2) Conformity Determination. Federal agencies must initially assess if an action is subject to the Conformity Rule (Applicability Analysis) and then, if applicable, whether the action conforms to an applicable implementation plan (Conformity Determination).

On March 24, 2010, the U.S. EPA revised the General Conformity regulations. These most recent revisions improve the process federal entities use to demonstrate that their actions will not contribute to a NAAQS violation, provides tools to encourage better communication and air quality planning between states and federal agencies, and encourages both the federal agencies and the states to take early actions to ensure projects will conform to the appropriate state, tribal, or federal implementation plans for attaining or maintaining the NAAQS. The following is a summary of the revisions recently made to the Conformity regulations[1]:

- Allows federal facilities expecting future expansion or modifications to negotiate a facility-wide emission budget with applicable state air quality agencies. Actions taken that do not exceed these budgets would be deemed to conform to the SIP and would not need a conformity determination.
- Incorporates an early emission reduction credit program for all agencies that follow the Airport Early Emission Reduction guidance developed jointly by EPA and the Federal Aviation Administration. This program encourages emission reduction actions on federal installations by providing emission reduction credits that can be used to demonstrate conformity for subsequent actions on the facility.
- Allows emissions of one precursor pollutant to be offset by the reduction of emissions of another precursor pollutant. For example both oxides of nitrogen and volatile organic compounds are ozone precursors – they are emitted and then react in the atmosphere to form ground-level ozone. In an area that does not meet EPA's ground-level ozone standard, reductions in nitrogen oxide emissions could be offset by reductions of volatile organic compounds.

[1] United States Environmental Protection Agency (U.S. EPA). Accessed: February 24, 2016. General Conformity, Regulatory Actions, Final revisions to the General Conformity Regulations. Fact Sheet. Available at: url: https://www3.epa.gov/airquality/genconform/documents/20080108_NPRM_fs.pdf.

- Allows alternative schedules for mitigating emission increases where state air quality agencies can accommodate temporary emission increases in exchange for long-term or permanent emission reductions.
- Removes requirements for federal agencies to conduct conformity determinations for "regionally significant" actions. Such actions have emissions greater than 10 percent of the emissions inventory for a nonattainment area. These analyses have been conducted for 16 years and have never shown an action to interfere with attainment or maintenance of a NAAQS.
- Lists categories of actions that federal agencies can presume to conform. The final rule also allows states to establish "presumed to conform" lists for actions in their state.

General Conformity Emission Levels

When assessing the applicability of a proposed Federal action to General Conformity requirements, General Conformity requirements would be deemed to apply to a Proposed Federal action when the total of direct and indirect emissions caused by the Federal action would equal or exceed the *de minimis* emission levels of criteria pollutants within corresponding nonattainment or maintenance areas. General Conformity *de minimis* emission levels, expressed in tons per year (tons/yr), are summarized in Table A-1.

If the federal action will cause emissions that equal or exceed the *de minimis* emission levels in any nonattainment or maintenance area and the action is not otherwise exempt, "presumed to conform," or included in the existing emissions budget of the applicable implementation plan for attaining or maintaining the NAAQS, the agency must conduct a conformity determination before implementation of the proposed Federal action (U.S. EPA 2010).

Exemptions from General Conformity Requirements

In accordance with General Conformity regulations, the following actions are exempt:

- Actions where the total of direct and indirect emissions are below the specified emissions levels
- Actions which would result in no emissions increase or an increase in emissions that is clearly de minimis
- Actions where the emissions are not reasonably foreseeable, such as the following:
    - Initial Outer Continental Shelf lease sales which are made on a broad scale and are followed by exploration and development plans on a project level
    - Electric power marketing activities that involve the acquisition, sale and transmission of electric energy
- Actions which implement a decision to conduct or carry out a conforming program such as prescribed burning actions which are consistent with a conforming land management plan.
- Actions which include major or minor new or modified stationary sources requiring a permit under the New Source Review program or the prevention of significant deterioration program.
- Actions in response to emergencies or natural disasters such as hurricanes, earthquakes, etc., which are commenced on the order of hours or days after the emergency or disaster and, if applicable, which meet the requirements for Federal actions which are part of a continuing response
- Actions which include research, investigations, studies, demonstrations, or training (unless otherwise exempted) where no environmental detriment is incurred and/or, the particular action furthers air quality research, as determined by the State agency primarily responsible for the applicable SIP
- Actions which include alteration and additions of existing structures as specifically required by new or existing applicable environmental legislation or environmental regulations (e.g., hush houses for aircraft engines and scrubbers for air emissions)

- Actions which include direct emissions from remedial and removal actions carried out under CERCLA (and associated regulations to the extent such emissions either comply with the substantive requirements of the PSD/NSR permitting program or are exempted from other environmental regulation under the provisions of CERCLA and applicable regulations issued under CERCLA.)

Table A-1
General Conformity Emission Levels

Pollutant	Emission Levels (tons per year)
Nonattainment Areas	
Ozone (VOC's or NO_X)	
Serious NAA's	50
Severe NAA's	25
Extreme NAA's	10
Other Ozone NAA's outside an ozone transport region	**100**
Other Ozone NAA's inside an ozone transport region	
VOC	50
NO_X	100
Carbon Monoxide: All NAA's	100
SO_2 and NO_2: All NAA's	100
PM_{10}	
Moderate NAA's	100
Serious NAA's	70
$PM_{2.5}$	
Direct Emissions	100
SO_2	100
NO_X (Unless determined not be significant precursors)	100
VOC or Ammonia (if determined to be significant precursors)	100
Pb: All NAA's	25
Maintenance Areas	
Ozone (NO_X), SO_2 or NO_2: All MA's	100
Ozone (VOC's):	
Maintenance areas inside an ozone transport region	50
Maintenance areas outside an ozone transport region	100
Carbon Monoxide: All MA's	100
PM_{10} (All MA's):	100
Pb (All MA's):	25
*Applicable General Conformity de minimis emissions levels depicted in **bold** font.* *Source: U.S.EPA 2010*	

Applicability Analysis

As stated previously, the first step in a general conformity evaluation is an analysis of whether the General Conformity requirements apply to a Federal action proposed to be taken in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a Federal action requires a general conformity determination for each pollutant where the total of direct and indirect emissions caused by the Federal action would equal or exceed an annual *de minimis* emission levels for criteria air pollutants identified within corresponding nonattainment or maintenance areas. The following provides an analysis of General Conformity requirements applicable to the proposed project.

Attainment Status

The Proposed Action is located in an area designated nonattainment for the ozone NAAQS. As noted in Table A-1, the applicable *de minimis* emission level for areas designated *Moderate Nonattainment* for ozone is 100 tons per year (tons/yr) of ozone-precursor pollutants (VOCs or NO_X).

The EPA has designated the EKAPCD as a moderate nonattainment area for the 1997 8-hour ozone standard and as a marginal nonattainment area for the 2008 8-hour ozone standard. The project area is not located in an ozone transport region. Based on the federal nonattainment designation, the federal *de minimis* level is 100 tons/year.

Proposed Action Emissions

Construction Emissions

Emissions of VOCs and NO_X associated with the construction of the Proposed Action were calculated based on estimated construction information (i.e., equipment usage requirements, schedules, haul truck and employee trips) associated with the construction of the proposed improvements. Sources included in the analysis included on-road and off-road motorized equipment and vehicles, fugitive dust generated by onsite construction, road dust associated with vehicle travel on roadways, as well as, construction worker and haul truck trips. Emissions associated with off-road equipment and on-road vehicle trips were calculated utilizing the CalEEMod (version 2011.1.1) computer program.

The emissions associated with the Proposed Action are summarized in Table A-2. Based on the modeling conducted, construction of the Proposed Action would generate maximum uncontrolled emissions of approximately 0.4 tons/yr of VOCs and 4.7 tons/yr of NO_X. These estimated emissions apply to both proposed build alternatives. Total annual emissions from construction activities would not exceed the corresponding General Conformity *de minimis* emission levels of 100 tons/yr.

Operational Emissions

Implementation of the Proposed Action would result in increased emissions from stationary and mobile sources. Estimated operational emissions were quantified using the CalEEMod computer program based on project-specific operational information. Evaporative emissions of VOCs were quantified using flow-based emission factors derived from the *TriTAC Guidance Document on Control Technology for VOC Air Emissions for Publicly Operated Treatment Works (POTWs)* (TriTAC 1994). These emission factors were developed in a cooperative effort of publicly-owned treatment works (POTWs) and air regulatory agencies located in California. Emission factors contained in the TriTAC guidance document were derived from a combination of data generated by the Pooled Emissions Estimation Program (PEEP), the Joint Emissions Inventory Program (JEIP) submitted to the South Coast Air Quality Management District's Rule 1179, and toxics inventories from individual California POTWs. These emissions factors are flow-based, specific to the individual treatment processes, and are considered to provide a conservative estimation of emissions. Operational emissions are summarized in Table A-3.

In comparison to existing conditions/no-build alternative, operational of the Proposed Action would generate net increases of approximately 0.4 tons/year of ROG and 0.5 tons/year of NO_X. These estimated emissions apply to both proposed build alternatives. Total annual emissions from operational activities would not exceed the corresponding General Conformity *de minimis* emission levels of 100 tons/yr of VOCs or NO_X.

Applicability Determination

As identified in **Table A-2** and discussed above, the total of direct and indirect emissions of VOCs and NO_X attributable to the Proposed Action are less than the corresponding General Conformity *de minimis* emission levels. Given that the net emissions associated with the Proposed Action are less than the General Conformity *de minimis* emission levels, the Proposed Action is not subject to a General Conformity determination.

Table A-2
Uncontrolled Construction-Generated Emissions of Criteria Air Pollutants
Build Alternatives 1 & 2

Construction Activity	Annual Emissions (Tons/Year)[1]	
	VOC	NO_X
Construction Year 1		
Mobilization	0.0	0.02
Grading & Site Work	0.13	1.48
Excavation	0.23	2.69
Concrete Work	0.02	0.21
Equipment Installation	0.02	0.23
Site Piping & Electrical	0.01	0.08
Total:	0.42	4.70
Significance Thresholds:	*25*	*25*
Exceed Thresholds?	*No*	*No*
Construction Year 1		
Concrete Work	0.03	0.28
Equipment Installation	0.07	0.69
Building Construction	0.02	0.10
Site Piping & Electrical	0.01	0.12
Final Grading & Paving	0.05	0.46
Startup	0.00	0.01
Total:	0.18	1.66
Significance Thresholds:	*25*	*25*
Exceed Thresholds?	*No*	*No*

Emissions were quantified using CalEEMod, version 2013.2.2. Totals may not sum due to rounding.
2. EKAPCD daily emissions threshold applies to indirect on-road mobile-sources only. These thresholds typically apply to operational emissions, but have been included to ensure a conservative analysis of construction-generated emissions.
-- No applicable threshold.
Refer to Appendix B for modeling results and assumptions.

Table A-3
Summary of Operational Emissions of Criteria Air Pollutants
Direct & Indirect Sources

Construction Activity	Annual Emissions (Tons/Year) [1]	
	ROG	NO_X
Existing Conditions/No-Build Alternative		
WWTP Process Emissions	1.0	
Area Sources	0.01	0.00
Motor Vehicle Use [2]	0.00	0.02
Total:	*1.01*	*0.02*
Proposed Build Alternatives		
WWTP Process Emissions	1.3	
Area Sources	0.04	0.00
Emergency Generator [3]	0.02	0.14
Motor Vehicle Use [4]	0.05	0.36
Total:	*1.41*	*0.50*
Net Increase Compared to Existing:	*0.40*	*0.48*

1. *Emissions were quantified using CalEEMod, version 2013.2.2. Emissions associated with energy use and waste generation are negligible. Daily indirect source emissions of ROG, NO_X, SO_X, and PM_{10} for no-build and proposed build alternatives would be approximately 0.1 lbs/day, or less, and would not exceed EKAPCD's significance thresholds of 137 lbs/day.*

2. Assumes two employees daily; 16 septage haul truck trips monthly.
3. Assumes a maximum of 200 hours annually, In accordance with EKAPCD permitting requirements.
4. Assumes 12 employees daily; 24 septage and 30 biosolids removal haul truck trips monthly.
-- No applicable threshold.
Refer to Appendix B for modeling results and assumptions.

APPENDIX B

Emissions Modeling

CONSTRUCTION SCHEDULE

Construction Phase	Construction Year 1											
	Jan	Feb	Mar	Apr	May	Jum	Jul	Aug	Sep	Oct	Nov	Dec
Mobilization & submittals												
Grading & site work												
Excavation												
Influent lift station & headworks												
Splitter boxes												
Oxidation ditches												
Clarifiers												
RAS/WAS pump station												
Site waste lift station												
Digesters												
Concrete formwork and pours												
Influent lift station & headworks												
Splitter boxes												
Oxidation ditches												
Clarifiers												
RAS/WAS pump station												
Site waste lift station												
Digesters												
Screw press & sludge drying area												
Buildings												
Equipment Installation												
Influent lift station & headworks												
Splitter boxes												
Oxidation ditches												
Clarifiers												
RAS/WAS pump station												
Site waste lift station												
Digesters												
Screw press & sludge drying area												
Building construction												
Site piping & electrical												
Final grading & paving												
Startup												

CONSTRUCTION SCHEDULE

Construction Phase	Construction Year 2											
	Jan	Feb	Mar	Apr	May	Jum	Jul	Aug	Sep	Oct	Nov	Dec
Mobilization & submittals												
Grading & site work												
Excavation												
Influent lift station & headworks												
Splitter boxes												
Oxidation ditches												
Clarifiers												
RAS/WAS pump station												
Site waste lift station												
Digesters												
Concrete formwork and pours												
Influent lift station & headworks												
Splitter boxes												
Oxidation ditches												
Clarifiers												
RAS/WAS pump station												
Site waste lift station												
Digesters												
Screw press & sludge drying area												
Buildings												
Equipment Installation												
Influent lift station & headworks												
Splitter boxes												
Oxidation ditches												
Clarifiers												
RAS/WAS pump station												
Site waste lift station												
Digesters												
Screw press & sludge drying area												
Building construction												
Site piping & electrical												
Final grading & paving												
Startup												

Primary Construction Activity	Construction Schedule (Estimated Total Months)	Off-Road Equipment Use		
		Equipment Type	Number of Pieces	Avg. Hours of Daily Use/Piece of Equipment
Grading & Site Work				
		Scraper Cat 623	2	8
		Motor Grader Cat 140H	1	8
		Dozer Cat D8	1	8
		Compactor Cat 815	1	8
		Steel Roller 10-Ton	1	8
		Loader Cat 966	1	8
	2	Excavator Cat 330L	1	8
Excavation				
		Scraper Cat 623	4	8
		Motor Grader Cat 140H	2	8
		Dozer Cat D8	2	8
		Compactor Cat 815	2	8
	4	Excavator Cat 330L	2	8
Concrete Form Work and Pours				
	10	Lift-all Forklift	2	8
Equipment Installation				
		Crane (200-ton)	1	8
	8	Lift-all Forklift	2	8
Building Construction				
		Lift-all Forklift	1	8
	5	Concrete Pump Truck	1	8
Site Piping & Electrical				
	9	Backhoe JD 710		
Final Grading & Paving				
		Motor Grader Cat 140H	1	8
		Steel Roller 10-Ton	1	8
		Loader Cat 966	1	8
		Asphalt Paving Machine	1	8
	2	Steel Roller 10-Ton	2	8

CONSTRUCTION EMISSIONS SUMMARY (DAILY)

CONSTRUCTION ACTIVITY	CONSTRUCTION EMISSIONS (LBS/DAY)							PERIOD (MONTHS)
	ROG	NOX	CO	SOX	PM10	PM2.5	CO2E	
Mobilization - Yr 1								
Onsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Offsite	0.1	0.5	2.0	0.0	0.3	0.1	339.0	
Total	0.1	0.5	2.0	0.0	0.3	0.1	339.0	3
Grading & Site Work - Yr 1								
Onsite	6.4	73.4	47.3	0.1	9.6	6.6	6125.0	
Offsite	0.1	0.5	2.0	0.0	0.3	0.1	339.0	
Total	6.5	73.9	49.3	0.1	9.9	6.7	6464.0	2
Excavation - Yr 1								
Onsite	11.5	134.0	85.8	0.1	20.9	12.6	11050.0	
Offsite	0.1	0.3	2.1	0.0	0.7	0.2	400.0	
Total	11.6	134.3	87.9	0.1	21.6	12.8	11450.0	4
Concrete Work - Yr 1								
Onsite	1.0	10.1	6.6	0.0	0.7	0.6	920.0	
Offsite	0.1	0.6	1.5	0.0	0.1	0.0	205.0	
Total	1.1	10.7	8.1	0.0	0.8	0.6	1125.0	7
Concrete Work - Yr 2								
Onsite	0.9	8.9	6.5	0.0	0.6	0.5	906.0	
Offsite	0.1	0.5	1.4	0.0	0.1	0.0	200.0	
Total	1.0	9.4	7.9	0.0	0.7	0.6	1106.0	3
Equipment Installation - Yr 1								
Onsite	1.1	11.3	5.3	0.0	0.6	0.6	896.0	
Offsite	0.0	0.1	0.5	0.0	0.1	0.0	96.0	
Total	1.1	11.4	5.8	0.0	0.7	0.6	992.0	2
Equipment Installation - Yr 2								
Onsite	1.1	11.3	5.3	0.0	0.6	0.6	896.0	
Offsite	0.0	0.1	0.5	0.0	0.1	0.0	96.0	
Total	1.1	11.4	5.8	0.0	0.7	0.6	992.0	6
Building Construction - Yr 2								
Onsite	0.2	1.8	1.3	0.0	0.2	0.1	157.0	
Offsite	0.1	0.3	1.3	0.0	0.3	0.1	274.0	
Total	0.3	2.1	2.6	0.0	0.4	0.2	431.0	5
Site Piping & Electrical - Yr 1								
Onsite	0.4	3.9	3.3	0.0	0.3	0.3	430.0	
Offsite	0.1	0.2	1.0	0.0	0.2	0.1	207.0	
Total	0.5	4.1	4.2	0.0	0.5	0.3	637.0	6
Site Piping & Electrical - Yr 2								
Onsite	0.4	3.9	3.3	0.0	0.3	0.3	430.0	
Offsite	0.1	0.2	1.0	0.0	0.2	0.1	207.0	
Total	0.5	4.1	4.2	0.0	0.5	0.3	637.0	3
Final Grading & Paving - Yr 2								
Onsite	2.2	22.0	16.2	0.0	1.3	1.2	2340.0	
Offsite	0.2	0.8	2.4	0.0	0.3	0.1	382.0	
Total	2.3	22.9	18.6	0.0	1.6	1.3	2722.0	2
Startup - Yr 2								
Onsite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Offsite	0.1	0.2	1.2	0.0	0.3	0.1	382.0	
Total	0.1	0.2	1.2	0.0	0.3	0.1	382.0	3
Indirect Maximum Daily Emissions:	**0.3**	**1.1**	**4.6**	**0.0**	**1.1**	**0.3**		
Total Maximum Daily Emissions:	**13.2**	**149.0**	**100.2**	**0.1**	**22.9**	**13.8**		

Maximum daily emissions assumes excavation, concrete, piping and electrical would occur on the same day based on preliminary construction schedules.

CONSTRUCTION EMISSIONS SUMMARY (ANNUAL)

	CONSTRUCTION YEAR 1 (TONS)							CONSTRUCTION YEAR 2 (LBS/DAY)						
	ROG	NOX	CO	SOX	PM10	PM2.5	CO2E	ROG	NOX	CO	SOX	PM10	PM2.5	CO2E
Mobilization - Yr 1	0.00	0.02	0.06	0.00	0.01	0.00	10.17							
Grading & Site Work - Yr 1	0.13	1.48	0.99	0.00	0.20	0.13	129.28							
Excavation - Yr 1	0.23	2.69	1.76	0.00	0.43	0.26	229.00							
Concrete Work - Yr 1	0.02	0.21	0.16	0.00	0.02	0.01	22.50							
Concrete Work - Yr 2								0.03	0.28	0.24	0.00	0.02	0.02	33.18
Equipment Installation - Yr 1	0.02	0.23	0.12	0.00	0.01	0.01	19.84							
Equipment Installation - Yr 2								0.07	0.69	0.35	0.00	0.04	0.04	59.52
Building Construction - Yr 2								0.02	0.10	0.13	0.00	0.02	0.01	21.55
Site Piping & Electrical - Yr 1	0.01	0.08	0.08	0.00	0.01	0.01	12.74							
Site Piping & Electrical - Yr 2								0.01	0.12	0.13	0.00	0.02	0.01	19.11
Final Grading & Paving - Yr 2								0.05	0.46	0.37	0.00	0.03	0.03	54.44
Startup - Yr 2								0.00	0.01	0.04	0.00	0.01	0.00	11.46
Total:	**0.42**	**4.70**	**3.17**	**0.00**	**0.68**	**0.42**	**423.53**	**0.18**	**1.66**	**1.25**	**0.00**	**0.14**	**0.10**	**199.26**

Ridgecrest WWTP - Existing/No-Build

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction does not apply.

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 1500sf building area.

Construction Phase - Const does not apply.

Off-road Equipment - Forklift 1

Off-road Equipment - Const does not apply

Trips and VMT - Const does not apply

Grading - Const does not apply

Vehicle Trips - Assumes 3.3 trips/day/ksf weekday, 2.7 trips/day/ksf weekend, Weekend excludes trucks.

Vechicle Emission Factors - 80% LDA/T1/T2; 20%HDT.

Vechicle Emission Factors - .

Vechicle Emission Factors - .

Water And Wastewater - Includes 2.6MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Const does not apply

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDA	0.35	0.27

tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00

tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.70
tblVehicleTrips	SU_TR	0.68	2.70
tblVehicleTrips	WD_TR	6.97	3.30
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	346,875.00	949,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	5.9571	5.9571	2.2000e-004	7.0000e-005	5.9839
Mobile	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645
Waste						0.0000	0.0000		0.0000	0.0000	0.3776	0.0000	0.3776	0.0223	0.0000	0.8461
Water						0.0000	0.0000		0.0000	0.0000	335.7577	527.5793	863.3370	1.1795	0.7351	1,115.9871
Total	**0.0109**	**0.0200**	**0.0539**	**1.5000e-004**	**6.9700e-003**	**4.7000e-004**	**7.4400e-003**	**1.8600e-003**	**4.4000e-004**	**2.3100e-003**	**336.1353**	**543.8955**	**880.0308**	**1.2023**	**0.7352**	**1,133.1817**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Energy	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	5.9571	5.9571	2.2000e-004	7.0000e-005	5.9839
Mobile	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645
Waste						0.0000	0.0000		0.0000	0.0000	0.3776	0.0000	0.3776	0.0223	0.0000	0.8461
Water						0.0000	0.0000		0.0000	0.0000	335.7577	527.5793	863.3370	1.1732	0.7338	1,115.4515
Total	**0.0109**	**0.0200**	**0.0539**	**1.5000e-004**	**6.9700e-003**	**4.7000e-004**	**7.4400e-003**	**1.8600e-003**	**4.4000e-004**	**2.3100e-003**	**336.1353**	**543.8955**	**880.0308**	**1.1960**	**0.7339**	**1,132.6460**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.52**	**0.18**	**0.05**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Final Grading & Paving	Paving	1/1/2017	1/2/2017	5	1	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Final Grading & Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Final Grading & Paving	Pavers	0	7.00	125	0.42
Final Grading & Paving	Rollers	0	7.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Final Grading & Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Final Grading & Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Final Grading & Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645
Unmitigated	3.8100e-003	0.0184	0.0526	1.4000e-004	6.9700e-003	3.5000e-004	7.3200e-003	1.8600e-003	3.2000e-004	2.1900e-003	0.0000	10.3591	10.3591	2.6000e-004	0.0000	10.3645

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	4.95	4.05	4.05	18,131	18,131
Total	4.95	4.05	4.05	18,131	18,131

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.270000	0.270000	0.260000	0.000000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.2153	4.2153	1.9000e-004	4.0000e-005	4.2315
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	4.2153	4.2153	1.9000e-004	4.0000e-005	4.2315
NaturalGas Mitigated	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524
NaturalGas Unmitigated	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	32640	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524
Total		**1.8000e-004**	**1.6000e-003**	**1.3400e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**1.7418**	**1.7418**	**3.0000e-005**	**3.0000e-005**	**1.7524**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	32640	1.8000e-004	1.6000e-003	1.3400e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	1.7418	1.7418	3.0000e-005	3.0000e-005	1.7524
Total		**1.8000e-004**	**1.6000e-003**	**1.3400e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**	**0.0000**	**1.7418**	**1.7418**	**3.0000e-005**	**3.0000e-005**	**1.7524**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	14490	4.2153	1.9000e-004	4.0000e-005	4.2315
Total		**4.2153**	**1.9000e-004**	**4.0000e-005**	**4.2315**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	14490	4.2153	1.9000e-004	4.0000e-005	4.2315
Total		**4.2153**	**1.9000e-004**	**4.0000e-005**	**4.2315**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	6.9000e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**6.9000e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.0400e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	5.8600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.0000e-005	3.0000e-005	0.0000	0.0000	3.0000e-005
Total	**6.9000e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0000**	**3.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	863.3370	1.1732	0.7338	1,115.4515
Unmitigated	863.3370	1.1795	0.7351	1,115.9871

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	949 / 0	863.3370	1.1795	0.7351	1,115.9871
Total		**863.3370**	**1.1795**	**0.7351**	**1,115.9871**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	949 / 0	863.3370	1.1732	0.7338	1,115.4515
Total		**863.3370**	**1.1732**	**0.7338**	**1,115.4515**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.3776	0.0223	0.0000	0.8461
Unmitigated	0.3776	0.0223	0.0000	0.8461

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.86	0.3776	0.0223	0.0000	0.8461
Total		**0.3776**	**0.0223**	**0.0000**	**0.8461**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	1.86	0.3776	0.0223	0.0000	0.8461
Total		**0.3776**	**0.0223**	**0.0000**	**0.8461**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Ridgecrest WWTP - Existing/No-Build

Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction does not apply.

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 1500sf building area.

Construction Phase - Const does not apply.

Off-road Equipment - Forklift 1

Off-road Equipment - Const does not apply

Trips and VMT - Const does not apply

Grading - Const does not apply

Vehicle Trips - Assumes 3.3 trips/day/ksf weekday, 2.7 trips/day/ksf weekend, Weekend excludes trucks.

Vechicle Emission Factors - 80% LDA/T1/T2; 20%HDT.

Vechicle Emission Factors - .

Vechicle Emission Factors - .

Water And Wastewater - Includes 2.6MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Const does not apply

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDA	0.35	0.27

tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00

tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.70
tblVehicleTrips	SU_TR	0.68	2.70
tblVehicleTrips	WD_TR	6.97	3.30
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	346,875.00	949,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280
Total	**0.0624**	**0.1104**	**0.2914**	**9.0000e-004**	**0.0411**	**2.7000e-003**	**0.0438**	**0.0110**	**2.5400e-003**	**0.0135**		**79.9147**	**79.9147**	**1.8300e-003**	**1.9000e-004**	**80.0129**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280
Total	**0.0624**	**0.1104**	**0.2914**	**9.0000e-004**	**0.0411**	**2.7000e-003**	**0.0438**	**0.0110**	**2.5400e-003**	**0.0135**		**79.9147**	**79.9147**	**1.8300e-003**	**1.9000e-004**	**80.0129**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Final Grading & Paving	Paving	1/1/2017	1/2/2017	5	1	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Final Grading & Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Final Grading & Paving	Pavers	0	7.00	125	0.42
Final Grading & Paving	Rollers	0	7.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Final Grading & Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Final Grading & Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Final Grading & Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280
Unmitigated	0.0237	0.1017	0.2839	8.5000e-004	0.0411	2.0300e-003	0.0432	0.0110	1.8700e-003	0.0129		69.3938	69.3938	1.6300e-003		69.4280

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	4.95	4.05	4.05	18,131	18,131
Total	4.95	4.05	4.05	18,131	18,131

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.270000	0.270000	0.260000	0.000000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
NaturalGas Unmitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	89.4247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		**9.6000e-004**	**8.7700e-003**	**7.3600e-003**	**5.0000e-005**		**6.7000e-004**	**6.7000e-004**		**6.7000e-004**	**6.7000e-004**		**10.5206**	**10.5206**	**2.0000e-004**	**1.9000e-004**	**10.5846**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.0894247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		**9.6000e-004**	**8.7700e-003**	**7.3600e-003**	**5.0000e-005**		**6.7000e-004**	**6.7000e-004**		**6.7000e-004**	**6.7000e-004**		**10.5206**	**10.5206**	**2.0000e-004**	**1.9000e-004**	**10.5846**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Unmitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**0.0378**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**0.0378**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Ridgecrest WWTP - Existing/No-Build

Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	1.50	1000sqft	0.03	1,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Construction does not apply.

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 1500sf building area.

Construction Phase - Const does not apply.

Off-road Equipment - Forklift 1

Off-road Equipment - Const does not apply

Trips and VMT - Const does not apply

Grading - Const does not apply

Vehicle Trips - Assumes 3.3 trips/day/ksf weekday, 2.7 trips/day/ksf weekend, Weekend excludes trucks.

Vechicle Emission Factors - 80% LDA/T1/T2; 20%HDT.

Vechicle Emission Factors - .

Vechicle Emission Factors - .

Water And Wastewater - Includes 2.6MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Const does not apply

Energy Use -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	HHD	0.17	0.20
tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDA	0.35	0.27

tblVehicleEF	LDA	0.35	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT1	0.06	0.27
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LDT2	0.14	0.26
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00

tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.70
tblVehicleTrips	SU_TR	0.68	2.70
tblVehicleTrips	WD_TR	6.97	3.30
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	346,875.00	949,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078
Total	**0.0621**	**0.1183**	**0.3665**	**8.4000e-004**	**0.0411**	**2.7100e-003**	**0.0438**	**0.0110**	**2.5400e-003**	**0.0135**		**75.4942**	**75.4942**	**1.8400e-003**	**1.9000e-004**	**75.5927**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Energy	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Mobile	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078
Total	**0.0621**	**0.1183**	**0.3665**	**8.4000e-004**	**0.0411**	**2.7100e-003**	**0.0438**	**0.0110**	**2.5400e-003**	**0.0135**		**75.4942**	**75.4942**	**1.8400e-003**	**1.9000e-004**	**75.5927**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Final Grading & Paving	Paving	1/1/2017	1/2/2017	5	1	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Final Grading & Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Final Grading & Paving	Pavers	0	7.00	125	0.42
Final Grading & Paving	Rollers	0	7.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	0	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Final Grading & Paving	0	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Clean Paved Roads

3.2 Final Grading & Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.2 Final Grading & Paving - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078
Unmitigated	0.0233	0.1095	0.3590	7.9000e-004	0.0411	2.0400e-003	0.0432	0.0110	1.8700e-003	0.0129		64.9734	64.9734	1.6400e-003		65.0078

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	4.95	4.05	4.05	18,131	18,131
Total	4.95	4.05	4.05	18,131	18,131

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.270000	0.270000	0.260000	0.000000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
NaturalGas Unmitigated	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	89.4247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		**9.6000e-004**	**8.7700e-003**	**7.3600e-003**	**5.0000e-005**		**6.7000e-004**	**6.7000e-004**		**6.7000e-004**	**6.7000e-004**		**10.5206**	**10.5206**	**2.0000e-004**	**1.9000e-004**	**10.5846**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.0894247	9.6000e-004	8.7700e-003	7.3600e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004		10.5206	10.5206	2.0000e-004	1.9000e-004	10.5846
Total		**9.6000e-004**	**8.7700e-003**	**7.3600e-003**	**5.0000e-005**		**6.7000e-004**	**6.7000e-004**		**6.7000e-004**	**6.7000e-004**		**10.5206**	**10.5206**	**2.0000e-004**	**1.9000e-004**	**10.5846**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Unmitigated	0.0378	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**0.0378**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	5.7100e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0321					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		3.3000e-004	3.3000e-004	0.0000		3.5000e-004
Total	**0.0378**	**0.0000**	**1.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**3.3000e-004**	**3.3000e-004**	**0.0000**		**3.5000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Ridgecrest WWTP

Kern-San Joaquin County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.58	1000sqft	100.00	5,575.00	0
Parking Lot	10.00	Space	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 5575sf building area, 10 space parking lot, 100 acres total area.

Construction Phase - Grading 40 days, Excavation 80 days, Concrete 200 days, Install 160 days, Bldg Const 100 days, Piping & Elec 180 days, Paving 40 days, Startup 60 days.

Off-road Equipment - Forklift 1

Off-road Equipment - Forklifts 2, Other Material Handling 1

Off-road Equipment - Crane 1, Forklift 2

Off-road Equipment - Exc 2, Graders 2, Dozers 2, Scrapers 4, Rollers 2

Off-road Equipment - Paver 1, Paving Equipment 1, Roller 2, Grader 1, Tractor 1

Off-road Equipment - 1 dozer, 1 tractor, 2 scrapers, 1 grader, 1 excavator, 2 roller/compactors; 8 hours daily

Off-road Equipment - Backhoe 1, Forklift 1

Trips and VMT - Worker/vendor trips based on model defaults/project info. (Worker/Vendor/HDT):Grading=20/4/0, Exc=30/1/0, Conc=6/6/0, Install=6/1/4, Bldg=20/1/14, Piping=16/1/0, Final=15/10/0.

Grading - No import/export of fill. All material balanced on site.

Vehicle Trips - Assumes 5.75 trips/day/sf weekday, 2.15 trips/day/sf weekend, Weekend excludes trucks.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Water And Wastewater - Includes 3.6 MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Watering efficiency rates of 50% for unpaved roads 61% for exposed areas, 15 mph speed limit for onsite vehicle travel. T3 offroad equipment included in mitigation calc.

Operational Off-Road Equipment - Assumes 1 500hp genset operating 24 hours/day. Max limit of ~200 hours annually.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	8543	8363
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	3,100.00	200.00
tblConstructionPhase	NumDays	3,100.00	160.00
tblConstructionPhase	NumDays	3,100.00	100.00
tblConstructionPhase	NumDays	3,100.00	180.00
tblConstructionPhase	NumDays	310.00	80.00
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	120.00	40.00
tblConstructionPhase	PhaseEndDate	3/23/2017	3/22/2017

tblConstructionPhase	PhaseEndDate	11/1/2017	10/31/2017
tblConstructionPhase	PhaseEndDate	11/27/2018	11/28/2018
tblConstructionPhase	PhaseStartDate	6/17/2016	6/16/2016
tblConstructionPhase	PhaseStartDate	3/23/2017	3/22/2017
tblConstructionPhase	PhaseStartDate	3/21/2018	3/22/2018
tblGrading	AcresOfGrading	400.00	200.00
tblGrading	AcresOfGrading	100.00	0.00
tblLandUse	LandUseSquareFeet	5,580.00	5,575.00
tblLandUse	LotAcreage	0.13	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	500.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	6.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	20.00

tblTripsAndVMT	WorkerTripNumber	4.00	16.00
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00

tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.15
tblVehicleTrips	SU_TR	0.68	2.15
tblVehicleTrips	WD_TR	6.97	5.75
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	1,290,375.00	1,314,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.6764	7.6039	5.0565	6.4600e-003	0.7501	0.3667	1.1168	0.3534	0.3373	0.6907	0.0000	602.6307	602.6307	0.1726	0.0000	606.2545
2017	0.1239	1.2366	0.7352	1.2200e-003	0.0154	0.0721	0.0875	4.1100e-003	0.0664	0.0705	0.0000	109.3592	109.3592	0.0286	0.0000	109.9601
2018	0.0763	0.6767	0.6560	1.0900e-003	0.0288	0.0449	0.0738	7.6900e-003	0.0414	0.0490	0.0000	91.8017	91.8017	0.0208	0.0000	92.2383
2019	0.0176	0.1730	0.1519	2.3000e-004	2.1000e-003	9.7300e-003	0.0118	5.7000e-004	8.9500e-003	9.5200e-003	0.0000	20.5694	20.5694	5.6500e-003	0.0000	20.6881
Total	**0.8943**	**9.6903**	**6.5995**	**9.0000e-003**	**0.7964**	**0.4935**	**1.2899**	**0.3658**	**0.4540**	**0.8198**	**0.0000**	**824.3610**	**824.3610**	**0.2276**	**0.0000**	**829.1408**

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.1627	2.9711	3.8965	6.4600e-003	0.3181	0.1297	0.4477	0.1445	0.1296	0.2740	0.0000	602.6300	602.6300	0.1726	0.0000	606.2538
2017	0.0312	0.5302	0.7461	1.2200e-003	0.0154	0.0269	0.0423	4.1100e-003	0.0269	0.0310	0.0000	109.3591	109.3591	0.0286	0.0000	109.9600
2018	0.0264	0.4025	0.6650	1.0900e-003	0.0288	0.0249	0.0537	7.6900e-003	0.0248	0.0325	0.0000	91.8016	91.8016	0.0208	0.0000	92.2382
2019	5.9500e-003	0.1054	0.1642	2.3000e-004	2.1000e-003	5.7600e-003	7.8600e-003	5.7000e-004	5.7500e-003	6.3200e-003	0.0000	20.5694	20.5694	5.6500e-003	0.0000	20.6881
Total	**0.2262**	**4.0092**	**5.4717**	**9.0000e-003**	**0.3644**	**0.1872**	**0.5515**	**0.1569**	**0.1870**	**0.3438**	**0.0000**	**824.3602**	**824.3602**	**0.2276**	**0.0000**	**829.1400**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**74.70**	**58.63**	**17.09**	**0.00**	**54.25**	**62.07**	**57.24**	**57.12**	**58.81**	**58.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Energy	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	23.1646	23.1646	8.8000e-004	2.7000e-004	23.2682
Mobile	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000
Offroad	0.0147	0.1422	0.0787	3.9000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	40.3720	40.3720	1.2100e-003	0.0000	40.3973
Waste						0.0000	0.0000		0.0000	0.0000	1.4047	0.0000	1.4047	0.0830	0.0000	3.1480
Water						0.0000	0.0000		0.0000	0.0000	464.8953	730.4944	1,195.3897	1.6332	1.0178	1,545.2129
Total	**0.1029**	**0.5085**	**0.8046**	**2.0400e-003**	**0.0426**	**0.0117**	**0.0542**	**0.0116**	**0.0111**	**0.0227**	**466.3000**	**928.8033**	**1,395.1033**	**1.7196**	**1.0181**	**1,746.8267**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Energy	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	23.1646	23.1646	8.8000e-004	2.7000e-004	23.2682
Mobile	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000
Offroad	0.0147	0.1422	0.0787	3.9000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	40.3720	40.3720	1.2100e-003	0.0000	40.3973
Waste						0.0000	0.0000		0.0000	0.0000	1.4047	0.0000	1.4047	0.0830	0.0000	3.1480
Water						0.0000	0.0000		0.0000	0.0000	464.8953	730.4944	1,195.3897	1.6244	1.0160	1,544.4712
Total	**0.1029**	**0.5085**	**0.8046**	**2.0400e-003**	**0.0426**	**0.0117**	**0.0542**	**0.0116**	**0.0111**	**0.0227**	**466.3000**	**928.8033**	**1,395.1033**	**1.7109**	**1.0163**	**1,746.0850**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**14.31**	**27.97**	**9.78**	**19.12**	**0.00**	**36.96**	**7.95**	**0.00**	**38.79**	**18.96**	**0.00**	**4.35**	**2.89**	**0.58**	**0.18**	**2.36**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading & Site Work	Site Preparation	1/1/2016	2/25/2016	5	40	Grading & Site Work
2	Excavation	Grading	2/26/2016	6/16/2016	5	80	Excavation
3	Concrete Work	Building Construction	6/16/2016	3/22/2017	5	200	Concrete Work
4	Equipment Install	Building Construction	3/22/2017	10/31/2017	5	160	Equipment Install
5	Building Construction	Building Construction	11/1/2017	3/20/2018	5	100	Building Construction
6	Piping & Electrical	Building Construction	3/22/2018	11/28/2018	5	180	Piping & Electrical
7	Final Grading & Paving	Paving	11/29/2018	1/23/2019	5	40	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading & Site Work	Excavators	1	8.00	162	0.38
Grading & Site Work	Graders	1	8.00	174	0.41
Grading & Site Work	Rollers	2	8.00	80	0.38
Grading & Site Work	Rubber Tired Dozers	1	8.00	255	0.40
Grading & Site Work	Scrapers	2	8.00	361	0.48
Grading & Site Work	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Excavation	Cranes	0	7.00	226	0.29
Excavation	Excavators	2	8.00	162	0.38
Excavation	Forklifts	0	8.00	89	0.20
Excavation	Generator Sets	0	8.00	84	0.74
Excavation	Graders	2	8.00	174	0.41

Excavation	Rollers	2	8.00	80	0.38
Excavation	Rubber Tired Dozers	2	8.00	255	0.40
Excavation	Scrapers	4	8.00	361	0.48
Excavation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Excavation	Welders	0	8.00	46	0.45
Concrete Work	Cranes	0	7.00	226	0.29
Concrete Work	Forklifts	2	8.00	89	0.20
Concrete Work	Generator Sets	0	8.00	84	0.74
Concrete Work	Other Material Handling Equipment	1	8.00	167	0.40
Concrete Work	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Concrete Work	Welders	0	8.00	46	0.45
Equipment Install	Cranes	1	8.00	226	0.29
Equipment Install	Forklifts	2	8.00	89	0.20
Equipment Install	Generator Sets	0	8.00	84	0.74
Equipment Install	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Equipment Install	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Piping & Electrical	Cranes	0	7.00	226	0.29
Piping & Electrical	Forklifts	1	8.00	89	0.20
Piping & Electrical	Generator Sets	0	8.00	84	0.74
Piping & Electrical	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Piping & Electrical	Welders	0	8.00	46	0.45
Final Grading & Paving	Graders	1	8.00	174	0.41
Final Grading & Paving	Pavers	1	8.00	125	0.42

Final Grading & Paving	Paving Equipment	1	8.00	130	0.36
Final Grading & Paving	Rollers	2	8.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading & Site Work	8	20.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	12	30.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	6.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Equipment Install	3	6.00	1.00	4.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	20.00	1.00	14.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping & Electrical	2	16.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading & Paving	6	15.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading & Site Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1204	0.0000	0.1204	0.0662	0.0000	0.0662	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1285	1.4671	0.9465	1.1700e-003		0.0715	0.0715		0.0658	0.0658	0.0000	110.4287	110.4287	0.0333	0.0000	111.1282
Total	**0.1285**	**1.4671**	**0.9465**	**1.1700e-003**	**0.1204**	**0.0715**	**0.1919**	**0.0662**	**0.0658**	**0.1320**	**0.0000**	**110.4287**	**110.4287**	**0.0333**	**0.0000**	**111.1282**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4000e-004	7.4600e-003	0.0115	2.0000e-005	4.7000e-004	1.3000e-004	6.0000e-004	1.4000e-004	1.2000e-004	2.5000e-004	0.0000	1.5709	1.5709	1.0000e-005	0.0000	1.5712
Worker	1.7100e-003	2.7300e-003	0.0265	6.0000e-005	5.0100e-003	4.0000e-005	5.0500e-003	1.3300e-003	3.0000e-005	1.3700e-003	0.0000	4.7706	4.7706	2.4000e-004	0.0000	4.7756
Total	**2.6500e-003**	**0.0102**	**0.0380**	**8.0000e-005**	**5.4800e-003**	**1.7000e-004**	**5.6500e-003**	**1.4700e-003**	**1.5000e-004**	**1.6200e-003**	**0.0000**	**6.3414**	**6.3414**	**2.5000e-004**	**0.0000**	**6.3467**

3.2 Grading & Site Work - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0470	0.0000	0.0470	0.0258	0.0000	0.0258	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0287	0.5693	0.7110	1.1700e-003		0.0257	0.0257		0.0257	0.0257	0.0000	110.4286	110.4286	0.0333	0.0000	111.1281
Total	**0.0287**	**0.5693**	**0.7110**	**1.1700e-003**	**0.0470**	**0.0257**	**0.0727**	**0.0258**	**0.0257**	**0.0515**	**0.0000**	**110.4286**	**110.4286**	**0.0333**	**0.0000**	**111.1281**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.4000e-004	7.4600e-003	0.0115	2.0000e-005	4.7000e-004	1.3000e-004	6.0000e-004	1.4000e-004	1.2000e-004	2.5000e-004	0.0000	1.5709	1.5709	1.0000e-005	0.0000	1.5712
Worker	1.7100e-003	2.7300e-003	0.0265	6.0000e-005	5.0100e-003	4.0000e-005	5.0500e-003	1.3300e-003	3.0000e-005	1.3700e-003	0.0000	4.7706	4.7706	2.4000e-004	0.0000	4.7756
Total	**2.6500e-003**	**0.0102**	**0.0380**	**8.0000e-005**	**5.4800e-003**	**1.7000e-004**	**5.6500e-003**	**1.4700e-003**	**1.5000e-004**	**1.6200e-003**	**0.0000**	**6.3414**	**6.3414**	**2.5000e-004**	**0.0000**	**6.3467**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5878	0.0000	0.5878	0.2763	0.0000	0.2763	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4598	5.3588	3.4318	4.2200e-003		0.2475	0.2475		0.2277	0.2277	0.0000	398.4490	398.4490	0.1202	0.0000	400.9730
Total	**0.4598**	**5.3588**	**3.4318**	**4.2200e-003**	**0.5878**	**0.2475**	**0.8354**	**0.2763**	**0.2277**	**0.5040**	**0.0000**	**398.4490**	**398.4490**	**0.1202**	**0.0000**	**400.9730**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7000e-004	3.7300e-003	5.7700e-003	1.0000e-005	4.1000e-004	6.0000e-005	4.7000e-004	1.1000e-004	6.0000e-005	1.7000e-004	0.0000	0.7854	0.7854	1.0000e-005	0.0000	0.7856
Worker	5.1200e-003	8.1800e-003	0.0795	1.9000e-004	0.0281	1.1000e-004	0.0282	7.1900e-003	1.0000e-004	7.3000e-003	0.0000	14.3117	14.3117	7.2000e-004	0.0000	14.3268
Total	**5.5900e-003**	**0.0119**	**0.0853**	**2.0000e-004**	**0.0285**	**1.7000e-004**	**0.0287**	**7.3000e-003**	**1.6000e-004**	**7.4700e-003**	**0.0000**	**15.0971**	**15.0971**	**7.3000e-004**	**0.0000**	**15.1124**

3.3 Excavation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2293	0.0000	0.2293	0.1077	0.0000	0.1077	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1036	2.0209	2.4981	4.2200e-003		0.0849	0.0849		0.0849	0.0849	0.0000	398.4486	398.4486	0.1202	0.0000	400.9725
Total	**0.1036**	**2.0209**	**2.4981**	**4.2200e-003**	**0.2293**	**0.0849**	**0.3142**	**0.1077**	**0.0849**	**0.1927**	**0.0000**	**398.4486**	**398.4486**	**0.1202**	**0.0000**	**400.9725**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7000e-004	3.7300e-003	5.7700e-003	1.0000e-005	4.1000e-004	6.0000e-005	4.7000e-004	1.1000e-004	6.0000e-005	1.7000e-004	0.0000	0.7854	0.7854	1.0000e-005	0.0000	0.7856
Worker	5.1200e-003	8.1800e-003	0.0795	1.9000e-004	0.0281	1.1000e-004	0.0282	7.1900e-003	1.0000e-004	7.3000e-003	0.0000	14.3117	14.3117	7.2000e-004	0.0000	14.3268
Total	**5.5900e-003**	**0.0119**	**0.0853**	**2.0000e-004**	**0.0285**	**1.7000e-004**	**0.0287**	**7.3000e-003**	**1.6000e-004**	**7.4700e-003**	**0.0000**	**15.0971**	**15.0971**	**7.3000e-004**	**0.0000**	**15.1124**

3.4 Concrete Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0731	0.7133	0.4653	6.2000e-004		0.0466	0.0466		0.0429	0.0429	0.0000	58.8689	58.8689	0.0178	0.0000	59.2418
Total	**0.0731**	**0.7133**	**0.4653**	**6.2000e-004**		**0.0466**	**0.0466**		**0.0429**	**0.0429**	**0.0000**	**58.8689**	**58.8689**	**0.0178**	**0.0000**	**59.2418**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-003	0.0397	0.0614	9.0000e-005	2.5300e-003	6.9000e-004	3.2200e-003	7.2000e-004	6.3000e-004	1.3600e-003	0.0000	8.3649	8.3649	7.0000e-005	0.0000	8.3664
Worker	1.8200e-003	2.9000e-003	0.0282	7.0000e-005	5.3400e-003	4.0000e-005	5.3800e-003	1.4200e-003	4.0000e-005	1.4500e-003	0.0000	5.0807	5.0807	2.6000e-004	0.0000	5.0860
Total	**6.8200e-003**	**0.0426**	**0.0896**	**1.6000e-004**	**7.8700e-003**	**7.3000e-004**	**8.6000e-003**	**2.1400e-003**	**6.7000e-004**	**2.8100e-003**	**0.0000**	**13.4455**	**13.4455**	**3.3000e-004**	**0.0000**	**13.4524**

3.4 Concrete Work - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0154	0.3162	0.4744	6.2000e-004		0.0179	0.0179		0.0179	0.0179	0.0000	58.8688	58.8688	0.0178	0.0000	59.2417
Total	**0.0154**	**0.3162**	**0.4744**	**6.2000e-004**		**0.0179**	**0.0179**		**0.0179**	**0.0179**	**0.0000**	**58.8688**	**58.8688**	**0.0178**	**0.0000**	**59.2417**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-003	0.0397	0.0614	9.0000e-005	2.5300e-003	6.9000e-004	3.2200e-003	7.2000e-004	6.3000e-004	1.3600e-003	0.0000	8.3649	8.3649	7.0000e-005	0.0000	8.3664
Worker	1.8200e-003	2.9000e-003	0.0282	7.0000e-005	5.3400e-003	4.0000e-005	5.3800e-003	1.4200e-003	4.0000e-005	1.4500e-003	0.0000	5.0807	5.0807	2.6000e-004	0.0000	5.0860
Total	**6.8200e-003**	**0.0426**	**0.0896**	**1.6000e-004**	**7.8700e-003**	**7.3000e-004**	**8.6000e-003**	**2.1400e-003**	**6.7000e-004**	**2.8100e-003**	**0.0000**	**13.4455**	**13.4455**	**3.3000e-004**	**0.0000**	**13.4524**

3.4 Concrete Work - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0268	0.2593	0.1870	2.5000e-004		0.0169	0.0169		0.0155	0.0155	0.0000	23.6713	23.6713	7.2500e-003	0.0000	23.8236
Total	**0.0268**	**0.2593**	**0.1870**	**2.5000e-004**		**0.0169**	**0.0169**		**0.0155**	**0.0155**	**0.0000**	**23.6713**	**23.6713**	**7.2500e-003**	**0.0000**	**23.8236**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8100e-003	0.0143	0.0233	4.0000e-005	1.0300e-003	2.4000e-004	1.2700e-003	3.0000e-004	2.2000e-004	5.1000e-004	0.0000	3.3586	3.3586	3.0000e-005	0.0000	3.3592
Worker	6.4000e-004	1.0500e-003	0.0101	3.0000e-005	2.1800e-003	2.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.9927	1.9927	1.0000e-004	0.0000	1.9947
Total	**2.4500e-003**	**0.0154**	**0.0334**	**7.0000e-005**	**3.2100e-003**	**2.6000e-004**	**3.4700e-003**	**8.8000e-004**	**2.3000e-004**	**1.1000e-003**	**0.0000**	**5.3513**	**5.3513**	**1.3000e-004**	**0.0000**	**5.3539**

3.4 Concrete Work - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2800e-003	0.1292	0.1938	2.5000e-004		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	23.6713	23.6713	7.2500e-003	0.0000	23.8236
Total	**6.2800e-003**	**0.1292**	**0.1938**	**2.5000e-004**		**7.3200e-003**	**7.3200e-003**		**7.3200e-003**	**7.3200e-003**	**0.0000**	**23.6713**	**23.6713**	**7.2500e-003**	**0.0000**	**23.8236**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8100e-003	0.0143	0.0233	4.0000e-005	1.0300e-003	2.4000e-004	1.2700e-003	3.0000e-004	2.2000e-004	5.1000e-004	0.0000	3.3586	3.3586	3.0000e-005	0.0000	3.3592
Worker	6.4000e-004	1.0500e-003	0.0101	3.0000e-005	2.1800e-003	2.0000e-005	2.2000e-003	5.8000e-004	1.0000e-005	5.9000e-004	0.0000	1.9927	1.9927	1.0000e-004	0.0000	1.9947
Total	**2.4500e-003**	**0.0154**	**0.0334**	**7.0000e-005**	**3.2100e-003**	**2.6000e-004**	**3.4700e-003**	**8.8000e-004**	**2.3000e-004**	**1.1000e-003**	**0.0000**	**5.3513**	**5.3513**	**1.3000e-004**	**0.0000**	**5.3539**

3.5 Equipment Install - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0856	0.9077	0.4204	7.0000e-004		0.0516	0.0516		0.0474	0.0474	0.0000	64.5732	64.5732	0.0198	0.0000	64.9887
Total	**0.0856**	**0.9077**	**0.4204**	**7.0000e-004**		**0.0516**	**0.0516**		**0.0474**	**0.0474**	**0.0000**	**64.5732**	**64.5732**	**0.0198**	**0.0000**	**64.9887**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	4.6000e-004	4.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1337	0.1337	0.0000	0.0000	0.1337
Vendor	8.3000e-004	6.5900e-003	0.0107	2.0000e-005	4.8000e-004	1.1000e-004	5.8000e-004	1.4000e-004	1.0000e-004	2.4000e-004	0.0000	1.5442	1.5442	1.0000e-005	0.0000	1.5444
Worker	1.7800e-003	2.9100e-003	0.0279	8.0000e-005	6.0100e-003	4.0000e-005	6.0600e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.4972	5.4972	2.6000e-004	0.0000	5.5027
Total	**2.6500e-003**	**9.9600e-003**	**0.0391**	**1.0000e-004**	**6.5200e-003**	**1.6000e-004**	**6.6800e-003**	**1.7500e-003**	**1.5000e-004**	**1.9000e-003**	**0.0000**	**7.1750**	**7.1750**	**2.7000e-004**	**0.0000**	**7.1808**

3.5 Equipment Install - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0171	0.3522	0.4263	7.0000e-004		0.0178	0.0178		0.0178	0.0178	0.0000	64.5732	64.5732	0.0198	0.0000	64.9886
Total	**0.0171**	**0.3522**	**0.4263**	**7.0000e-004**		**0.0178**	**0.0178**		**0.0178**	**0.0178**	**0.0000**	**64.5732**	**64.5732**	**0.0198**	**0.0000**	**64.9886**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	4.6000e-004	4.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1337	0.1337	0.0000	0.0000	0.1337
Vendor	8.3000e-004	6.5900e-003	0.0107	2.0000e-005	4.8000e-004	1.1000e-004	5.8000e-004	1.4000e-004	1.0000e-004	2.4000e-004	0.0000	1.5442	1.5442	1.0000e-005	0.0000	1.5444
Worker	1.7800e-003	2.9100e-003	0.0279	8.0000e-005	6.0100e-003	4.0000e-005	6.0600e-003	1.6000e-003	4.0000e-005	1.6400e-003	0.0000	5.4972	5.4972	2.6000e-004	0.0000	5.5027
Total	**2.6500e-003**	**9.9600e-003**	**0.0391**	**1.0000e-004**	**6.5200e-003**	**1.6000e-004**	**6.6800e-003**	**1.7500e-003**	**1.5000e-004**	**1.9000e-003**	**0.0000**	**7.1750**	**7.1750**	**2.7000e-004**	**0.0000**	**7.1808**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.5400e-003	0.0393	0.0269	3.0000e-005		3.2400e-003	3.2400e-003		2.9800e-003	2.9800e-003	0.0000	3.0477	3.0477	9.3000e-004	0.0000	3.0673
Total	**4.5400e-003**	**0.0393**	**0.0269**	**3.0000e-005**		**3.2400e-003**	**3.2400e-003**		**2.9800e-003**	**2.9800e-003**	**0.0000**	**3.0477**	**3.0477**	**9.3000e-004**	**0.0000**	**3.0673**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	7.0000e-004	7.0000e-004	0.0000	1.0000e-004	1.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2012	0.2012	0.0000	0.0000	0.2012
Vendor	2.2000e-004	1.7700e-003	2.8800e-003	0.0000	1.3000e-004	3.0000e-005	1.6000e-004	4.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.4150	0.4150	0.0000	0.0000	0.4151
Worker	1.5900e-003	2.6000e-003	0.0250	7.0000e-005	5.3900e-003	4.0000e-005	5.4300e-003	1.4300e-003	4.0000e-005	1.4700e-003	0.0000	4.9246	4.9246	2.4000e-004	0.0000	4.9295
Total	**1.8700e-003**	**5.0700e-003**	**0.0286**	**7.0000e-005**	**5.6200e-003**	**8.0000e-005**	**5.7000e-003**	**1.5000e-003**	**8.0000e-005**	**1.5700e-003**	**0.0000**	**5.5407**	**5.5407**	**2.4000e-004**	**0.0000**	**5.5458**

3.6 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.1000e-004	0.0185	0.0250	3.0000e-005		1.3000e-003	1.3000e-003		1.3000e-003	1.3000e-003	0.0000	3.0477	3.0477	9.3000e-004	0.0000	3.0673
Total	**8.1000e-004**	**0.0185**	**0.0250**	**3.0000e-005**		**1.3000e-003**	**1.3000e-003**		**1.3000e-003**	**1.3000e-003**	**0.0000**	**3.0477**	**3.0477**	**9.3000e-004**	**0.0000**	**3.0673**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	7.0000e-004	7.0000e-004	0.0000	1.0000e-004	1.0000e-005	1.1000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2012	0.2012	0.0000	0.0000	0.2012
Vendor	2.2000e-004	1.7700e-003	2.8800e-003	0.0000	1.3000e-004	3.0000e-005	1.6000e-004	4.0000e-005	3.0000e-005	6.0000e-005	0.0000	0.4150	0.4150	0.0000	0.0000	0.4151
Worker	1.5900e-003	2.6000e-003	0.0250	7.0000e-005	5.3900e-003	4.0000e-005	5.4300e-003	1.4300e-003	4.0000e-005	1.4700e-003	0.0000	4.9246	4.9246	2.4000e-004	0.0000	4.9295
Total	**1.8700e-003**	**5.0700e-003**	**0.0286**	**7.0000e-005**	**5.6200e-003**	**8.0000e-005**	**5.7000e-003**	**1.5000e-003**	**8.0000e-005**	**1.5700e-003**	**0.0000**	**5.5407**	**5.5407**	**2.4000e-004**	**0.0000**	**5.5458**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0800e-003	0.0449	0.0345	4.0000e-005		3.5800e-003	3.5800e-003		3.2900e-003	3.2900e-003	0.0000	3.9761	3.9761	1.2400e-003	0.0000	4.0021
Total	**5.0800e-003**	**0.0449**	**0.0345**	**4.0000e-005**		**3.5800e-003**	**3.5800e-003**		**3.2900e-003**	**3.2900e-003**	**0.0000**	**3.9761**	**3.9761**	**1.2400e-003**	**0.0000**	**4.0021**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	8.3000e-004	8.9000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2620	0.2620	0.0000	0.0000	0.2620
Vendor	2.7000e-004	2.1100e-003	3.6100e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.5405	0.5405	0.0000	0.0000	0.5406
Worker	1.8400e-003	3.0800e-003	0.0292	9.0000e-005	7.1400e-003	5.0000e-005	7.1900e-003	1.9000e-003	5.0000e-005	1.9400e-003	0.0000	6.2620	6.2620	2.9000e-004	0.0000	6.2680
Total	**2.1800e-003**	**6.0200e-003**	**0.0337**	**1.0000e-004**	**7.4200e-003**	**1.0000e-004**	**7.5100e-003**	**1.9800e-003**	**9.0000e-005**	**2.0600e-003**	**0.0000**	**7.0645**	**7.0645**	**2.9000e-004**	**0.0000**	**7.0706**

3.6 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.0700e-003	0.0245	0.0331	4.0000e-005		1.7200e-003	1.7200e-003		1.7200e-003	1.7200e-003	0.0000	3.9761	3.9761	1.2400e-003	0.0000	4.0021
Total	**1.0700e-003**	**0.0245**	**0.0331**	**4.0000e-005**		**1.7200e-003**	**1.7200e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**3.9761**	**3.9761**	**1.2400e-003**	**0.0000**	**4.0021**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	8.3000e-004	8.9000e-004	0.0000	1.1000e-004	1.0000e-005	1.2000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.2620	0.2620	0.0000	0.0000	0.2620
Vendor	2.7000e-004	2.1100e-003	3.6100e-003	1.0000e-005	1.7000e-004	4.0000e-005	2.0000e-004	5.0000e-005	3.0000e-005	8.0000e-005	0.0000	0.5405	0.5405	0.0000	0.0000	0.5406
Worker	1.8400e-003	3.0800e-003	0.0292	9.0000e-005	7.1400e-003	5.0000e-005	7.1900e-003	1.9000e-003	5.0000e-005	1.9400e-003	0.0000	6.2620	6.2620	2.9000e-004	0.0000	6.2680
Total	**2.1800e-003**	**6.0200e-003**	**0.0337**	**1.0000e-004**	**7.4200e-003**	**1.0000e-004**	**7.5100e-003**	**1.9800e-003**	**9.0000e-005**	**2.0600e-003**	**0.0000**	**7.0645**	**7.0645**	**2.9000e-004**	**0.0000**	**7.0706**

3.7 Piping & Electrical - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0370	0.3488	0.2930	3.8000e-004		0.0260	0.0260		0.0239	0.0239	0.0000	34.9012	34.9012	0.0109	0.0000	35.1294
Total	**0.0370**	**0.3488**	**0.2930**	**3.8000e-004**		**0.0260**	**0.0260**		**0.0239**	**0.0239**	**0.0000**	**34.9012**	**34.9012**	**0.0109**	**0.0000**	**35.1294**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.6000e-004	6.6600e-003	0.0114	2.0000e-005	5.3000e-004	1.1000e-004	6.5000e-004	1.5000e-004	1.0000e-004	2.6000e-004	0.0000	1.7069	1.7069	1.0000e-005	0.0000	1.7072
Worker	4.6400e-003	7.7900e-003	0.0738	2.3000e-004	0.0180	1.3000e-004	0.0182	4.7900e-003	1.2000e-004	4.9100e-003	0.0000	15.8197	15.8197	7.2000e-004	0.0000	15.8349
Total	**5.5000e-003**	**0.0145**	**0.0852**	**2.5000e-004**	**0.0186**	**2.4000e-004**	**0.0188**	**4.9400e-003**	**2.2000e-004**	**5.1700e-003**	**0.0000**	**17.5266**	**17.5266**	**7.3000e-004**	**0.0000**	**17.5421**

3.7 Piping & Electrical - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3700e-003	0.2140	0.2890	3.8000e-004		0.0150	0.0150		0.0150	0.0150	0.0000	34.9012	34.9012	0.0109	0.0000	35.1293
Total	**9.3700e-003**	**0.2140**	**0.2890**	**3.8000e-004**		**0.0150**	**0.0150**		**0.0150**	**0.0150**	**0.0000**	**34.9012**	**34.9012**	**0.0109**	**0.0000**	**35.1293**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.6000e-004	6.6600e-003	0.0114	2.0000e-005	5.3000e-004	1.1000e-004	6.5000e-004	1.5000e-004	1.0000e-004	2.6000e-004	0.0000	1.7069	1.7069	1.0000e-005	0.0000	1.7072
Worker	4.6400e-003	7.7900e-003	0.0738	2.3000e-004	0.0180	1.3000e-004	0.0182	4.7900e-003	1.2000e-004	4.9100e-003	0.0000	15.8197	15.8197	7.2000e-004	0.0000	15.8349
Total	**5.5000e-003**	**0.0145**	**0.0852**	**2.5000e-004**	**0.0186**	**2.4000e-004**	**0.0188**	**4.9400e-003**	**2.2000e-004**	**5.1700e-003**	**0.0000**	**17.5266**	**17.5266**	**7.3000e-004**	**0.0000**	**17.5421**

3.8 Final Grading & Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0249	0.2532	0.1862	2.7000e-004		0.0149	0.0149		0.0137	0.0137	0.0000	24.2572	24.2572	7.5500e-003	0.0000	24.4158
Paving	7.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0249**	**0.2532**	**0.1862**	**2.7000e-004**		**0.0149**	**0.0149**		**0.0137**	**0.0137**	**0.0000**	**24.2572**	**24.2572**	**7.5500e-003**	**0.0000**	**24.4158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-003	8.5100e-003	0.0146	2.0000e-005	6.8000e-004	1.4000e-004	8.3000e-004	2.0000e-004	1.3000e-004	3.3000e-004	0.0000	2.1810	2.1810	2.0000e-005	0.0000	2.1814
Worker	5.6000e-004	9.3000e-004	8.8400e-003	3.0000e-005	2.1600e-003	2.0000e-005	2.1800e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.8951	1.8951	9.0000e-005	0.0000	1.8969
Total	**1.6600e-003**	**9.4400e-003**	**0.0234**	**5.0000e-005**	**2.8400e-003**	**1.6000e-004**	**3.0100e-003**	**7.7000e-004**	**1.4000e-004**	**9.2000e-004**	**0.0000**	**4.0761**	**4.0761**	**1.1000e-004**	**0.0000**	**4.0783**

3.8 Final Grading & Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.5100e-003	0.1340	0.2006	2.7000e-004		7.6400e-003	7.6400e-003		7.6400e-003	7.6400e-003	0.0000	24.2572	24.2572	7.5500e-003	0.0000	24.4157
Paving	7.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5800e-003**	**0.1340**	**0.2006**	**2.7000e-004**		**7.6400e-003**	**7.6400e-003**		**7.6400e-003**	**7.6400e-003**	**0.0000**	**24.2572**	**24.2572**	**7.5500e-003**	**0.0000**	**24.4157**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-003	8.5100e-003	0.0146	2.0000e-005	6.8000e-004	1.4000e-004	8.3000e-004	2.0000e-004	1.3000e-004	3.3000e-004	0.0000	2.1810	2.1810	2.0000e-005	0.0000	2.1814
Worker	5.6000e-004	9.3000e-004	8.8400e-003	3.0000e-005	2.1600e-003	2.0000e-005	2.1800e-003	5.7000e-004	1.0000e-005	5.9000e-004	0.0000	1.8951	1.8951	9.0000e-005	0.0000	1.8969
Total	**1.6600e-003**	**9.4400e-003**	**0.0234**	**5.0000e-005**	**2.8400e-003**	**1.6000e-004**	**3.0100e-003**	**7.7000e-004**	**1.4000e-004**	**9.2000e-004**	**0.0000**	**4.0761**	**4.0761**	**1.1000e-004**	**0.0000**	**4.0783**

3.8 Final Grading & Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0165	0.1667	0.1359	2.0000e-004		9.6200e-003	9.6200e-003		8.8500e-003	8.8500e-003	0.0000	17.6355	17.6355	5.5800e-003	0.0000	17.7527
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0165**	**0.1667**	**0.1359**	**2.0000e-004**		**9.6200e-003**	**9.6200e-003**		**8.8500e-003**	**8.8500e-003**	**0.0000**	**17.6355**	**17.6355**	**5.5800e-003**	**0.0000**	**17.7527**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2000e-004	5.7000e-003	0.0101	2.0000e-005	5.0000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.5842	1.5842	1.0000e-005	0.0000	1.5845
Worker	3.7000e-004	6.3000e-004	5.9100e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3497	1.3497	6.0000e-005	0.0000	1.3510
Total	**1.0900e-003**	**6.3300e-003**	**0.0160**	**4.0000e-005**	**2.1000e-003**	**1.1000e-004**	**2.2100e-003**	**5.6000e-004**	**1.0000e-004**	**6.6000e-004**	**0.0000**	**2.9339**	**2.9339**	**7.0000e-005**	**0.0000**	**2.9354**

3.8 Final Grading & Paving - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.8100e-003	0.0991	0.1483	2.0000e-004		5.6500e-003	5.6500e-003		5.6500e-003	5.6500e-003	0.0000	17.6355	17.6355	5.5800e-003	0.0000	17.7526
Paving	5.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.8600e-003**	**0.0991**	**0.1483**	**2.0000e-004**		**5.6500e-003**	**5.6500e-003**		**5.6500e-003**	**5.6500e-003**	**0.0000**	**17.6355**	**17.6355**	**5.5800e-003**	**0.0000**	**17.7526**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.2000e-004	5.7000e-003	0.0101	2.0000e-005	5.0000e-004	1.0000e-004	6.0000e-004	1.4000e-004	9.0000e-005	2.3000e-004	0.0000	1.5842	1.5842	1.0000e-005	0.0000	1.5845
Worker	3.7000e-004	6.3000e-004	5.9100e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6100e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3497	1.3497	6.0000e-005	0.0000	1.3510
Total	**1.0900e-003**	**6.3300e-003**	**0.0160**	**4.0000e-005**	**2.1000e-003**	**1.1000e-004**	**2.2100e-003**	**5.6000e-004**	**1.0000e-004**	**6.6000e-004**	**0.0000**	**2.9339**	**2.9339**	**7.0000e-005**	**0.0000**	**2.9354**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000
Unmitigated	0.0462	0.3604	0.7208	1.6100e-003	0.0426	6.9000e-003	0.0495	0.0116	6.3500e-003	0.0180	0.0000	134.7721	134.7721	1.3300e-003	0.0000	134.8000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	32.09	12.00	12.00	101,785	101,785
Parking Lot	0.00	0.00	0.00		
Total	32.09	12.00	12.00	101,785	101,785

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.070000	0.070000	0.070000	0.000000	0.000000	0.000000	0.000000	0.790000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.6909	16.6909	7.5000e-004	1.6000e-004	16.7552
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	16.6909	16.6909	7.5000e-004	1.6000e-004	16.7552
NaturalGas Mitigated	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131
NaturalGas Unmitigated	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	121312	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131
Total		**6.5000e-004**	**5.9500e-003**	**5.0000e-003**	**4.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**6.4737**	**6.4737**	**1.2000e-004**	**1.2000e-004**	**6.5131**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	121312	6.5000e-004	5.9500e-003	5.0000e-003	4.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	6.4737	6.4737	1.2000e-004	1.2000e-004	6.5131
Total		**6.5000e-004**	**5.9500e-003**	**5.0000e-003**	**4.0000e-005**		**4.5000e-004**	**4.5000e-004**		**4.5000e-004**	**4.5000e-004**	**0.0000**	**6.4737**	**6.4737**	**1.2000e-004**	**1.2000e-004**	**6.5131**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	53854.5	15.6669	7.1000e-004	1.5000e-004	15.7272
Parking Lot	3520	1.0240	5.0000e-005	1.0000e-005	1.0280
Total		**16.6909**	**7.6000e-004**	**1.6000e-004**	**16.7552**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	53854.5	15.6669	7.1000e-004	1.5000e-004	15.7272
Parking Lot	3520	1.0240	5.0000e-005	1.0000e-005	1.0280
Total		**16.6909**	**7.6000e-004**	**1.6000e-004**	**16.7552**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Unmitigated	0.0413	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Total	**0.0413**	**0.0000**	**1.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.0000**	**2.9000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	3.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0374					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.8000e-004	2.8000e-004	0.0000	0.0000	2.9000e-004
Total	**0.0413**	**0.0000**	**1.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.0000**	**2.9000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1,195.3897	1.6244	1.0160	1,544.4712
Unmitigated	1,195.3897	1.6332	1.0178	1,545.2129

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1314 / 0	1,195.3897	1.6332	1.0178	1,545.2129
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1,195.3897**	**1.6332**	**1.0178**	**1,545.2129**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	1314 / 0	1,195.3897	1.6244	1.0160	1,544.4712
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1,195.3897**	**1.6244**	**1.0160**	**1,544.4712**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.4047	0.0830	0.0000	3.1480
Unmitigated	1.4047	0.0830	0.0000	3.1480

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	6.92	1.4047	0.0830	0.0000	3.1480
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1.4047**	**0.0830**	**0.0000**	**3.1480**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	6.92	1.4047	0.0830	0.0000	3.1480
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1.4047**	**0.0830**	**0.0000**	**3.1480**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	24.00	8	500	0.74	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Generator Sets	0.0147	0.1422	0.0787	3.9000e-004		4.3100e-003	4.3100e-003		4.3100e-003	4.3100e-003	0.0000	40.3720	40.3720	1.2100e-003	0.0000	40.3973
Total	**0.0147**	**0.1422**	**0.0787**	**3.9000e-004**		**4.3100e-003**	**4.3100e-003**		**4.3100e-003**	**4.3100e-003**	**0.0000**	**40.3720**	**40.3720**	**1.2100e-003**	**0.0000**	**40.3973**

10.0 Vegetation

Ridgecrest WWTP

Kern-San Joaquin County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.58	1000sqft	100.00	5,575.00	0
Parking Lot	10.00	Space	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 5575sf building area, 10 space parking lot, 100 acres total area.

Construction Phase - Grading 40 days, Excavation 80 days, Concrete 200 days, Install 160 days, Bldg Const 100 days, Piping & Elec 180 days, Paving 40 days, Startup 60 days.

Off-road Equipment - Forklift 1

Off-road Equipment - Forklifts 2, Other Material Handling 1

Off-road Equipment - Crane 1, Forklift 2

Off-road Equipment - Exc 2, Graders 2, Dozers 2, Scrapers 4, Rollers 2

Off-road Equipment - Paver 1, Paving Equipment 1, Roller 2, Grader 1, Tractor 1

Off-road Equipment - 1 dozer, 1 tractor, 2 scrapers, 1 grader, 1 excavator, 2 roller/compactors; 8 hours daily

Off-road Equipment - Backhoe 1, Forklift 1

Trips and VMT - Worker/vendor trips based on model defaults/project info. (Worker/Vendor/HDT):Grading=20/4/0, Exc=30/1/0, Conc=6/6/0, Install=6/1/4, Bldg=20/1/14, Piping=16/1/0, Final=15/10/0.

Grading - No import/export of fill. All material balanced on site.

Vehicle Trips - Assumes 5.75 trips/day/sf weekday, 2.15 trips/day/sf weekend, Weekend excludes trucks.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Water And Wastewater - Includes 3.6 MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Watering efficiency rates of 50% for unpaved roads 61% for exposed areas, 15 mph speed limit for onsite vehicle travel. T3 offroad equipment included in mitigation calc.

Operational Off-Road Equipment - Assumes 1 500hp genset operating 24 hours/day. Max limit of ~200 hours annually.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	8543	8363
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstEquipMitigation	Tier	No Change	Tier 3
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tblConstructionPhase	NumDays	3,100.00	200.00
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tblConstructionPhase	NumDays	3,100.00	180.00
tblConstructionPhase	NumDays	310.00	80.00
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	120.00	40.00
tblConstructionPhase	PhaseEndDate	3/23/2017	3/22/2017

tblConstructionPhase	PhaseEndDate	11/1/2017	10/31/2017
tblConstructionPhase	PhaseEndDate	11/27/2018	11/28/2018
tblConstructionPhase	PhaseStartDate	6/17/2016	6/16/2016
tblConstructionPhase	PhaseStartDate	3/23/2017	3/22/2017
tblConstructionPhase	PhaseStartDate	3/21/2018	3/22/2018
tblGrading	AcresOfGrading	400.00	200.00
tblGrading	AcresOfGrading	100.00	0.00
tblLandUse	LandUseSquareFeet	5,580.00	5,575.00
tblLandUse	LotAcreage	0.13	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	500.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
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tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	20.00

tblTripsAndVMT	WorkerTripNumber	4.00	16.00
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
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tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
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tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
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tblVehicleEF	LHD1	0.06	0.00
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tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
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tblVehicleEF	MCY	5.9930e-003	0.00
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tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
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tblVehicleEF	MH	2.5160e-003	0.00
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tblVehicleEF	MH	2.5160e-003	0.00

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tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
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tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.15
tblVehicleTrips	SU_TR	0.68	2.15
tblVehicleTrips	WD_TR	6.97	5.75
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	1,290,375.00	1,314,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	12.7828	144.8734	95.9798	0.1223	15.5350	6.8589	22.3940	7.1236	6.3102	13.4338	0.0000	12,569.5672	12,569.5672	3.6128	0.0000	12,645.4365
2017	2.1155	20.9133	13.2713	0.0211	0.2664	1.2366	1.4325	0.0708	1.1376	1.1905	0.0000	2,108.3074	2,108.3074	0.5568	0.0000	2,119.9994
2018	2.3148	22.8014	18.0964	0.0279	0.2653	1.3080	1.5600	0.0705	1.2034	1.2714	0.0000	2,735.7804	2,735.7804	0.7338	0.0000	2,751.1908
2019	2.0760	20.3264	17.7349	0.0279	0.2519	1.1441	1.3960	0.0681	1.0526	1.1206	0.0000	2,686.7703	2,686.7703	0.7330	0.0000	2,702.1627
Total	**19.2891**	**208.9145**	**145.0824**	**0.1992**	**16.3187**	**10.5476**	**26.7824**	**7.3329**	**9.7038**	**17.0163**	**0.0000**	**20,100.4252**	**20,100.4252**	**5.6364**	**0.0000**	**20,218.7893**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	3.0658	55.8317	72.7658	0.1223	6.5708	2.3904	8.9612	2.9105	2.3892	5.2997	0.0000	12,569.5672	12,569.5672	3.6128	0.0000	12,645.4365
2017	0.5516	9.4829	13.5812	0.0211	0.2664	0.4854	0.6813	0.0708	0.4845	0.5374	0.0000	2,108.3074	2,108.3074	0.5568	0.0000	2,119.9994
2018	0.7187	12.4415	19.3547	0.0279	0.2653	0.6781	0.9301	0.0705	0.6771	0.7451	0.0000	2,735.7804	2,735.7804	0.7338	0.0000	2,751.1908
2019	0.7035	12.3689	19.1876	0.0279	0.2519	0.6771	0.9291	0.0681	0.6761	0.7442	0.0000	2,686.7703	2,686.7703	0.7330	0.0000	2,702.1627
Total	**5.0396**	**90.1250**	**124.8893**	**0.1992**	**7.3545**	**4.2311**	**11.5017**	**3.1198**	**4.2269**	**7.3264**	**0.0000**	**20,100.4252**	**20,100.4252**	**5.6364**	**0.0000**	**20,218.7893**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**73.87**	**56.86**	**13.92**	**0.00**	**54.93**	**59.89**	**57.06**	**57.45**	**56.44**	**56.95**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	**4.2020**	**37.8927**	**23.4815**	**0.1090**	**0.2898**	**1.1254**	**1.4152**	**0.0790**	**1.1217**	**1.2006**		**12,166.9854**	**12,166.9854**	**0.3433**	**7.2000e-004**	**12,174.4163**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	**4.2020**	**37.8927**	**23.4815**	**0.1090**	**0.2898**	**1.1254**	**1.4152**	**0.0790**	**1.1217**	**1.2006**		**12,166.9854**	**12,166.9854**	**0.3433**	**7.2000e-004**	**12,174.4163**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**87.59**	**93.82**	**83.79**	**89.84**	**0.00**	**95.68**	**76.09**	**0.00**	**95.99**	**89.68**	**0.00**	**91.44**	**91.44**	**96.95**	**0.00**	**91.44**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading & Site Work	Site Preparation	1/1/2016	2/25/2016	5	40	Grading & Site Work
2	Excavation	Grading	2/26/2016	6/16/2016	5	80	Excavation
3	Concrete Work	Building Construction	6/16/2016	3/22/2017	5	200	Concrete Work
4	Equipment Install	Building Construction	3/22/2017	10/31/2017	5	160	Equipment Install
5	Building Construction	Building Construction	11/1/2017	3/20/2018	5	100	Building Construction
6	Piping & Electrical	Building Construction	3/22/2018	11/28/2018	5	180	Piping & Electrical
7	Final Grading & Paving	Paving	11/29/2018	1/23/2019	5	40	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading & Site Work	Excavators	1	8.00	162	0.38
Grading & Site Work	Graders	1	8.00	174	0.41
Grading & Site Work	Rollers	2	8.00	80	0.38
Grading & Site Work	Rubber Tired Dozers	1	8.00	255	0.40
Grading & Site Work	Scrapers	2	8.00	361	0.48
Grading & Site Work	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Excavation	Cranes	0	7.00	226	0.29
Excavation	Excavators	2	8.00	162	0.38
Excavation	Forklifts	0	8.00	89	0.20
Excavation	Generator Sets	0	8.00	84	0.74
Excavation	Graders	2	8.00	174	0.41

Excavation	Rollers	2	8.00	80	0.38
Excavation	Rubber Tired Dozers	2	8.00	255	0.40
Excavation	Scrapers	4	8.00	361	0.48
Excavation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Excavation	Welders	0	8.00	46	0.45
Concrete Work	Cranes	0	7.00	226	0.29
Concrete Work	Forklifts	2	8.00	89	0.20
Concrete Work	Generator Sets	0	8.00	84	0.74
Concrete Work	Other Material Handling Equipment	1	8.00	167	0.40
Concrete Work	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Concrete Work	Welders	0	8.00	46	0.45
Equipment Install	Cranes	1	8.00	226	0.29
Equipment Install	Forklifts	2	8.00	89	0.20
Equipment Install	Generator Sets	0	8.00	84	0.74
Equipment Install	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Equipment Install	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Piping & Electrical	Cranes	0	7.00	226	0.29
Piping & Electrical	Forklifts	1	8.00	89	0.20
Piping & Electrical	Generator Sets	0	8.00	84	0.74
Piping & Electrical	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Piping & Electrical	Welders	0	8.00	46	0.45
Final Grading & Paving	Graders	1	8.00	174	0.41
Final Grading & Paving	Pavers	1	8.00	125	0.42

Final Grading & Paving	Paving Equipment	1	8.00	130	0.36
Final Grading & Paving	Rollers	2	8.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading & Site Work	8	20.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	12	30.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	6.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Equipment Install	3	6.00	1.00	4.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	20.00	1.00	14.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping & Electrical	2	16.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading & Paving	6	15.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading & Site Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	6.4243	73.3534	47.3234	0.0585		3.5740	3.5740		3.2881	3.2881		6,086.3412	6,086.3412	1.8359		6,124.8942
Total	**6.4243**	**73.3534**	**47.3234**	**0.0585**	**6.0221**	**3.5740**	**9.5961**	**3.3102**	**3.2881**	**6.5983**		**6,086.3412**	**6,086.3412**	**1.8359**		**6,124.8942**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0431	0.3579	0.4587	8.7000e-004	0.0241	6.4000e-003	0.0305	6.9000e-003	5.8800e-003	0.0128		86.8840	86.8840	7.5000e-004		86.8998
Worker	0.1021	0.1275	1.5719	3.5400e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		290.6547	290.6547	0.0132		290.9318
Total	**0.1452**	**0.4854**	**2.0306**	**4.4100e-003**	**0.2796**	**8.2900e-003**	**0.2879**	**0.0747**	**7.6100e-003**	**0.0823**		**377.5387**	**377.5387**	**0.0140**		**377.8316**

3.2 Grading & Site Work - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3486	0.0000	2.3486	1.2910	0.0000	1.2910			0.0000			0.0000
Off-Road	1.4353	28.4646	35.5516	0.0585		1.2861	1.2861		1.2861	1.2861	0.0000	6,086.3412	6,086.3412	1.8359		6,124.8942
Total	**1.4353**	**28.4646**	**35.5516**	**0.0585**	**2.3486**	**1.2861**	**3.6347**	**1.2910**	**1.2861**	**2.5771**	**0.0000**	**6,086.3412**	**6,086.3412**	**1.8359**		**6,124.8942**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0431	0.3579	0.4587	8.7000e-004	0.0241	6.4000e-003	0.0305	6.9000e-003	5.8800e-003	0.0128		86.8840	86.8840	7.5000e-004		86.8998
Worker	0.1021	0.1275	1.5719	3.5400e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		290.6547	290.6547	0.0132		290.9318
Total	**0.1452**	**0.4854**	**2.0306**	**4.4100e-003**	**0.2796**	**8.2900e-003**	**0.2879**	**0.0747**	**7.6100e-003**	**0.0823**		**377.5387**	**377.5387**	**0.0140**		**377.8316**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.6954	0.0000	14.6954	6.9067	0.0000	6.9067			0.0000			0.0000
Off-Road	11.4939	133.9711	85.7945	0.1056		6.1884	6.1884		5.6933	5.6933		10,980.3720	10,980.3720	3.3121		11,049.9255
Total	**11.4939**	**133.9711**	**85.7945**	**0.1056**	**14.6954**	**6.1884**	**20.8838**	**6.9067**	**5.6933**	**12.6001**		**10,980.3720**	**10,980.3720**	**3.3121**		**11,049.9255**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0108	0.0895	0.1147	2.2000e-004	0.0104	1.6000e-003	0.0120	2.8000e-003	1.4700e-003	4.2700e-003		21.7210	21.7210	1.9000e-004		21.7249
Worker	0.1531	0.1913	2.3578	5.3100e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		435.9820	435.9820	0.0198		436.3977
Total	**0.1639**	**0.2807**	**2.4725**	**5.5300e-003**	**0.7268**	**4.4300e-003**	**0.7312**	**0.1862**	**4.0600e-003**	**0.1903**		**457.7030**	**457.7030**	**0.0200**		**458.1227**

3.3 Excavation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7312	0.0000	5.7312	2.6936	0.0000	2.6936			0.0000			0.0000
Off-Road	2.5899	50.5223	62.4514	0.1056		2.1233	2.1233		2.1233	2.1233	0.0000	10,980.3720	10,980.3720	3.3121		11,049.9255
Total	**2.5899**	**50.5223**	**62.4514**	**0.1056**	**5.7312**	**2.1233**	**7.8545**	**2.6936**	**2.1233**	**4.8169**	**0.0000**	**10,980.3720**	**10,980.3720**	**3.3121**		**11,049.9255**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0108	0.0895	0.1147	2.2000e-004	0.0104	1.6000e-003	0.0120	2.8000e-003	1.4700e-003	4.2700e-003		21.7210	21.7210	1.9000e-004		21.7249
Worker	0.1531	0.1913	2.3578	5.3100e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		435.9820	435.9820	0.0198		436.3977
Total	**0.1639**	**0.2807**	**2.4725**	**5.5300e-003**	**0.7268**	**4.4300e-003**	**0.7312**	**0.1862**	**4.0600e-003**	**0.1903**		**457.7030**	**457.7030**	**0.0200**		**458.1227**

3.4 Concrete Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0297	10.0466	6.5532	8.7900e-003		0.6559	0.6559		0.6035	0.6035		913.9697	913.9697	0.2757		919.7591
Total	**1.0297**	**10.0466**	**6.5532**	**8.7900e-003**		**0.6559**	**0.6559**		**0.6035**	**0.6035**		**913.9697**	**913.9697**	**0.2757**		**919.7591**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0647	0.5368	0.6881	1.3000e-003	0.0362	9.6000e-003	0.0458	0.0104	8.8300e-003	0.0192		130.3261	130.3261	1.1200e-003		130.3497
Worker	0.0306	0.0383	0.4716	1.0600e-003	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		87.1964	87.1964	3.9600e-003		87.2795
Total	**0.0953**	**0.5750**	**1.1596**	**2.3600e-003**	**0.1128**	**0.0102**	**0.1230**	**0.0307**	**9.3500e-003**	**0.0400**		**217.5225**	**217.5225**	**5.0800e-003**		**217.6292**

3.4 Concrete Work - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	913.9697	913.9697	0.2757		919.7591
Total	**0.2167**	**4.4537**	**6.6823**	**8.7900e-003**		**0.2525**	**0.2525**		**0.2525**	**0.2525**	**0.0000**	**913.9697**	**913.9697**	**0.2757**		**919.7591**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0647	0.5368	0.6881	1.3000e-003	0.0362	9.6000e-003	0.0458	0.0104	8.8300e-003	0.0192		130.3261	130.3261	1.1200e-003		130.3497
Worker	0.0306	0.0383	0.4716	1.0600e-003	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		87.1964	87.1964	3.9600e-003		87.2795
Total	**0.0953**	**0.5750**	**1.1596**	**2.3600e-003**	**0.1128**	**0.0102**	**0.1230**	**0.0307**	**9.3500e-003**	**0.0400**		**217.5225**	**217.5225**	**5.0800e-003**		**217.6292**

3.4 Concrete Work - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9248	8.9405	6.4464	8.7900e-003		0.5816	0.5816		0.5351	0.5351		899.7629	899.7629	0.2757		905.5523
Total	**0.9248**	**8.9405**	**6.4464**	**8.7900e-003**		**0.5816**	**0.5816**		**0.5351**	**0.5351**		**899.7629**	**899.7629**	**0.2757**		**905.5523**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0573	0.4743	0.6305	1.3000e-003	0.0362	8.0700e-003	0.0443	0.0104	7.4200e-003	0.0178		128.1133	128.1133	1.0400e-003		128.1352
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	**0.0841**	**0.5084**	**1.0456**	**2.3600e-003**	**0.1128**	**8.6100e-003**	**0.1215**	**0.0307**	**7.9200e-003**	**0.0386**		**211.8572**	**211.8572**	**4.6500e-003**		**211.9550**

3.4 Concrete Work - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	899.7629	899.7629	0.2757		905.5523
Total	**0.2167**	**4.4537**	**6.6823**	**8.7900e-003**		**0.2525**	**0.2525**		**0.2525**	**0.2525**	**0.0000**	**899.7629**	**899.7629**	**0.2757**		**905.5523**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0573	0.4743	0.6305	1.3000e-003	0.0362	8.0700e-003	0.0443	0.0104	7.4200e-003	0.0178		128.1133	128.1133	1.0400e-003		128.1352
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	**0.0841**	**0.5084**	**1.0456**	**2.3600e-003**	**0.1128**	**8.6100e-003**	**0.1215**	**0.0307**	**7.9200e-003**	**0.0386**		**211.8572**	**211.8572**	**4.6500e-003**		**211.9550**

3.5 Equipment Install - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0699	11.3458	5.2545	8.6900e-003		0.6443	0.6443		0.5928	0.5928		889.7475	889.7475	0.2726		895.4725
Total	**1.0699**	**11.3458**	**5.2545**	**8.6900e-003**		**0.6443**	**0.6443**		**0.5928**	**0.5928**		**889.7475**	**889.7475**	**0.2726**		**895.4725**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.5000e-004	5.5400e-003	4.6600e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8436	1.8436	1.0000e-005		1.8438
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	**0.0368**	**0.1187**	**0.5248**	**1.3000e-003**	**0.0831**	**1.9700e-003**	**0.0851**	**0.0222**	**1.8200e-003**	**0.0240**		**106.9397**	**106.9397**	**3.7900e-003**		**107.0195**

3.5 Equipment Install - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2141	4.4021	5.3286	8.6900e-003		0.2223	0.2223		0.2223	0.2223	0.0000	889.7475	889.7475	0.2726		895.4725
Total	**0.2141**	**4.4021**	**5.3286**	**8.6900e-003**		**0.2223**	**0.2223**		**0.2223**	**0.2223**	**0.0000**	**889.7475**	**889.7475**	**0.2726**		**895.4725**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	4.5000e-004	5.5400e-003	4.6600e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8436	1.8436	1.0000e-005		1.8438
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0268	0.0341	0.4150	1.0600e-003	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		83.7439	83.7439	3.6100e-003		83.8198
Total	**0.0368**	**0.1187**	**0.5248**	**1.3000e-003**	**0.0831**	**1.9700e-003**	**0.0851**	**0.0222**	**1.8200e-003**	**0.0240**		**106.9397**	**106.9397**	**3.7900e-003**		**107.0195**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2109	1.8264	1.2491	1.5300e-003		0.1507	0.1507		0.1386	0.1386		156.2548	156.2548	0.0479		157.2602
Total	**0.2109**	**1.8264**	**1.2491**	**1.5300e-003**		**0.1507**	**0.1507**		**0.1386**	**0.1386**		**156.2548**	**156.2548**	**0.0479**		**157.2602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.5100e-003	0.0310	0.0261	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.3240	10.3240	7.0000e-005		10.3255
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0893	0.1135	1.3835	3.5400e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		279.1463	279.1463	0.0121		279.3993
Total	**0.1013**	**0.2236**	**1.5147**	**3.8600e-003**	**0.2664**	**3.6500e-003**	**0.2701**	**0.0708**	**3.3700e-003**	**0.0741**		**310.8225**	**310.8225**	**0.0123**		**311.0807**

3.6 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	156.2548	156.2548	0.0479		157.2602
Total	**0.0377**	**0.8602**	**1.1616**	**1.5300e-003**		**0.0603**	**0.0603**		**0.0603**	**0.0603**	**0.0000**	**156.2548**	**156.2548**	**0.0479**		**157.2602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.5100e-003	0.0310	0.0261	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.3240	10.3240	7.0000e-005		10.3255
Vendor	9.5400e-003	0.0791	0.1051	2.2000e-004	6.0300e-003	1.3400e-003	7.3800e-003	1.7200e-003	1.2400e-003	2.9600e-003		21.3522	21.3522	1.7000e-004		21.3559
Worker	0.0893	0.1135	1.3835	3.5400e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		279.1463	279.1463	0.0121		279.3993
Total	**0.1013**	**0.2236**	**1.5147**	**3.8600e-003**	**0.2664**	**3.6500e-003**	**0.2701**	**0.0708**	**3.3700e-003**	**0.0741**		**310.8225**	**310.8225**	**0.0123**		**311.0807**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1781	1.5745	1.2112	1.5300e-003		0.1257	0.1257		0.1156	0.1156		153.7876	153.7876	0.0479		154.7930
Total	**0.1781**	**1.5745**	**1.2112**	**1.5300e-003**		**0.1257**	**0.1257**		**0.1156**	**0.1156**		**153.7876**	**153.7876**	**0.0479**		**154.7930**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4400e-003	0.0277	0.0253	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.5000e-004	1.4700e-003		10.1434	10.1434	7.0000e-005		10.1449
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0784	0.1016	1.2252	3.5300e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		267.8060	267.8060	0.0111		268.0382
Total	**0.0896**	**0.2003**	**1.3496**	**3.8500e-003**	**0.2653**	**3.4900e-003**	**0.2688**	**0.0705**	**3.2100e-003**	**0.0737**		**298.9292**	**298.9292**	**0.0113**		**299.1666**

3.6 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	153.7876	153.7876	0.0479		154.7930
Total	**0.0377**	**0.8602**	**1.1616**	**1.5300e-003**		**0.0603**	**0.0603**		**0.0603**	**0.0603**	**0.0000**	**153.7876**	**153.7876**	**0.0479**		**154.7930**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.4400e-003	0.0277	0.0253	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.5000e-004	1.4700e-003		10.1434	10.1434	7.0000e-005		10.1449
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0784	0.1016	1.2252	3.5300e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		267.8060	267.8060	0.0111		268.0382
Total	**0.0896**	**0.2003**	**1.3496**	**3.8500e-003**	**0.2653**	**3.4900e-003**	**0.2688**	**0.0705**	**3.2100e-003**	**0.0737**		**298.9292**	**298.9292**	**0.0113**		**299.1666**

3.7 Piping & Electrical - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4110	3.8755	3.2559	4.2500e-003		0.2887	0.2887		0.2656	0.2656		427.4666	427.4666	0.1331		430.2612
Total	**0.4110**	**3.8755**	**3.2559**	**4.2500e-003**		**0.2887**	**0.2887**		**0.2656**	**0.2656**		**427.4666**	**427.4666**	**0.1331**		**430.2612**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0627	0.0812	0.9802	2.8200e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		214.2448	214.2448	8.8500e-003		214.4306
Total	**0.0715**	**0.1523**	**1.0792**	**3.0400e-003**	**0.2104**	**2.6400e-003**	**0.2131**	**0.0559**	**2.4400e-003**	**0.0584**		**235.2246**	**235.2246**	**9.0200e-003**		**235.4140**

3.7 Piping & Electrical - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1041	2.3778	3.2109	4.2500e-003		0.1666	0.1666		0.1666	0.1666	0.0000	427.4666	427.4666	0.1331		430.2612
Total	**0.1041**	**2.3778**	**3.2109**	**4.2500e-003**		**0.1666**	**0.1666**		**0.1666**	**0.1666**	**0.0000**	**427.4666**	**427.4666**	**0.1331**		**430.2612**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.8300e-003	0.0711	0.0991	2.2000e-004	6.0300e-003	1.2300e-003	7.2700e-003	1.7200e-003	1.1300e-003	2.8600e-003		20.9799	20.9799	1.7000e-004		20.9834
Worker	0.0627	0.0812	0.9802	2.8200e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		214.2448	214.2448	8.8500e-003		214.4306
Total	**0.0715**	**0.1523**	**1.0792**	**3.0400e-003**	**0.2104**	**2.6400e-003**	**0.2131**	**0.0559**	**2.4400e-003**	**0.0584**		**235.2246**	**235.2246**	**9.0200e-003**		**235.4140**

3.8 Final Grading & Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1619	22.0147	16.1869	0.0231		1.2944	1.2944		1.1908	1.1908		2,325.1274	2,325.1274	0.7238		2,340.3282
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1678**	**22.0147**	**16.1869**	**0.0231**		**1.2944**	**1.2944**		**1.1908**	**1.1908**		**2,325.1274**	**2,325.1274**	**0.7238**		**2,340.3282**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0883	0.7106	0.9907	2.1600e-003	0.0603	0.0123	0.0727	0.0172	0.0113	0.0286		209.7985	209.7985	1.6900e-003		209.8339
Worker	0.0588	0.0762	0.9189	2.6400e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		200.8545	200.8545	8.3000e-003		201.0287
Total	**0.1470**	**0.7868**	**1.9096**	**4.8000e-003**	**0.2519**	**0.0136**	**0.2656**	**0.0681**	**0.0126**	**0.0806**		**410.6529**	**410.6529**	**9.9900e-003**		**410.8626**

3.8 Final Grading & Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,325.1274	2,325.1274	0.7238		2,340.3282
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5717**	**11.6548**	**17.4451**	**0.0231**		**0.6645**	**0.6645**		**0.6645**	**0.6645**	**0.0000**	**2,325.1274**	**2,325.1274**	**0.7238**		**2,340.3282**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0883	0.7106	0.9907	2.1600e-003	0.0603	0.0123	0.0727	0.0172	0.0113	0.0286		209.7985	209.7985	1.6900e-003		209.8339
Worker	0.0588	0.0762	0.9189	2.6400e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		200.8545	200.8545	8.3000e-003		201.0287
Total	**0.1470**	**0.7868**	**1.9096**	**4.8000e-003**	**0.2519**	**0.0136**	**0.2656**	**0.0681**	**0.0126**	**0.0806**		**410.6529**	**410.6529**	**9.9900e-003**		**410.8626**

3.8 Final Grading & Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9383	19.6123	15.9924	0.0231		1.1315	1.1315		1.0410	1.0410		2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9442**	**19.6123**	**15.9924**	**0.0231**		**1.1315**	**1.1315**		**1.0410**	**1.0410**		**2,287.0356**	**2,287.0356**	**0.7236**		**2,302.2311**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0787	0.6447	0.9088	2.1500e-003	0.0603	0.0113	0.0717	0.0173	0.0104	0.0277		206.1737	206.1737	1.6300e-003		206.2080
Worker	0.0532	0.0694	0.8337	2.6400e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		193.5610	193.5610	7.7500e-003		193.7236
Total	**0.1318**	**0.7141**	**1.7425**	**4.7900e-003**	**0.2519**	**0.0126**	**0.2646**	**0.0681**	**0.0116**	**0.0797**		**399.7347**	**399.7347**	**9.3800e-003**		**399.9316**

3.8 Final Grading & Paving - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5717**	**11.6548**	**17.4451**	**0.0231**		**0.6645**	**0.6645**		**0.6645**	**0.6645**	**0.0000**	**2,287.0356**	**2,287.0356**	**0.7236**		**2,302.2311**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0787	0.6447	0.9088	2.1500e-003	0.0603	0.0113	0.0717	0.0173	0.0104	0.0277		206.1737	206.1737	1.6300e-003		206.2080
Worker	0.0532	0.0694	0.8337	2.6400e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		193.5610	193.5610	7.7500e-003		193.7236
Total	**0.1318**	**0.7141**	**1.7425**	**4.7900e-003**	**0.2519**	**0.0126**	**0.2646**	**0.0681**	**0.0116**	**0.0797**		**399.7347**	**399.7347**	**9.3800e-003**		**399.9316**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671
Unmitigated	0.2915	2.3082	3.7776	0.0109	0.2898	0.0461	0.3359	0.0790	0.0425	0.1214		1,002.2634	1,002.2634	9.7000e-003		1,002.4671

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	32.09	12.00	12.00	101,785	101,785
Parking Lot	0.00	0.00	0.00		
Total	32.09	12.00	12.00	101,785	101,785

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.070000	0.070000	0.070000	0.000000	0.000000	0.000000	0.000000	0.790000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
NaturalGas Unmitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	332.362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Total		**3.5800e-003**	**0.0326**	**0.0274**	**2.0000e-004**		**2.4800e-003**	**2.4800e-003**		**2.4800e-003**	**2.4800e-003**		**39.1014**	**39.1014**	**7.5000e-004**	**7.2000e-004**	**39.3393**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.332362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.5800e-003**	**0.0326**	**0.0274**	**2.0000e-004**		**2.4800e-003**	**2.4800e-003**		**2.4800e-003**	**2.4800e-003**		**39.1014**	**39.1014**	**7.5000e-004**	**7.2000e-004**	**39.3393**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Unmitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	**0.2264**	**1.0000e-005**	**1.6000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.4100e-003**	**3.4100e-003**	**1.0000e-005**		**3.6000e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	**0.2264**	**1.0000e-005**	**1.6000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.4100e-003**	**3.4100e-003**	**1.0000e-005**		**3.6000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	24.00	8	500	0.74	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Generator Sets	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	**3.6805**	**35.5519**	**19.6749**	**0.0979**		**1.0767**	**1.0767**		**1.0767**	**1.0767**		**11,125.6173**	**11,125.6173**	**0.3328**		**11,132.6063**

10.0 Vegetation

Ridgecrest WWTP

Kern-San Joaquin County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.58	1000sqft	100.00	5,575.00	0
Parking Lot	10.00	Space	0.09	4,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	32
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Emissions modeling includes operational and construction-related emissions for the proposed project. Assumes 5575sf building area, 10 space parking lot, 100 acres total area.

Construction Phase - Grading 40 days, Excavation 80 days, Concrete 200 days, Install 160 days, Bldg Const 100 days, Piping & Elec 180 days, Paving 40 days, Startup 60 days.

Off-road Equipment - Forklift 1

Off-road Equipment - Forklifts 2, Other Material Handling 1

Off-road Equipment - Crane 1, Forklift 2

Off-road Equipment - Exc 2, Graders 2, Dozers 2, Scrapers 4, Rollers 2

Off-road Equipment - Paver 1, Paving Equipment 1, Roller 2, Grader 1, Tractor 1

Off-road Equipment - 1 dozer, 1 tractor, 2 scrapers, 1 grader, 1 excavator, 2 roller/compactors; 8 hours daily

Off-road Equipment - Backhoe 1, Forklift 1

Trips and VMT - Worker/vendor trips based on model defaults/project info. (Worker/Vendor/HDT):Grading=20/4/0, Exc=30/1/0, Conc=6/6/0, Install=6/1/4, Bldg=20/1/14, Piping=16/1/0, Final=15/10/0.

Grading - No import/export of fill. All material balanced on site.

Vehicle Trips - Assumes 5.75 trips/day/sf weekday, 2.15 trips/day/sf weekend, Weekend excludes trucks.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Vechicle Emission Factors - 21% LDA/T1/T2; 79%HDT.

Water And Wastewater - Includes 3.6 MGD/day, 365 days/yr, model default of 1911 kWhr/MG for wastewater treatment.

Construction Off-road Equipment Mitigation - Watering efficiency rates of 50% for unpaved roads 61% for exposed areas, 15 mph speed limit for onsite vehicle travel. T3 offroad equipment included in mitigation calc.

Operational Off-Road Equipment - Assumes 1 500hp genset operating 24 hours/day. Max limit of ~200 hours annually.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Interior	8543	8363
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstructionPhase	NumDays	310.00	80.00
tblConstructionPhase	NumDays	220.00	40.00
tblConstructionPhase	NumDays	120.00	40.00
tblConstructionPhase	PhaseEndDate	3/23/2017	3/22/2017

tblConstructionPhase	PhaseEndDate	11/1/2017	10/31/2017
tblConstructionPhase	PhaseEndDate	11/27/2018	11/28/2018
tblConstructionPhase	PhaseStartDate	6/17/2016	6/16/2016
tblConstructionPhase	PhaseStartDate	3/23/2017	3/22/2017
tblConstructionPhase	PhaseStartDate	3/21/2018	3/22/2018
tblGrading	AcresOfGrading	400.00	200.00
tblGrading	AcresOfGrading	100.00	0.00
tblLandUse	LandUseSquareFeet	5,580.00	5,575.00
tblLandUse	LotAcreage	0.13	100.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	UsageHours	8.00	7.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	8.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	500.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	OperationalYear	2014	2020
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	14.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	6.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	2.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	6.00
tblTripsAndVMT	WorkerTripNumber	4.00	20.00

tblTripsAndVMT	WorkerTripNumber	4.00	16.00
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	HHD	0.17	0.79
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDA	0.35	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT1	0.06	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LDT2	0.14	0.07
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD1	0.06	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	LHD2	0.01	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MCY	5.9930e-003	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MDV	0.18	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00
tblVehicleEF	MH	2.5160e-003	0.00

tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	MHD	0.02	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	OBUS	1.5030e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	SBUS	1.0620e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleEF	UBUS	1.8220e-003	0.00
tblVehicleTrips	ST_TR	1.32	2.15
tblVehicleTrips	SU_TR	0.68	2.15
tblVehicleTrips	WD_TR	6.97	5.75
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	2,117.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	1,290,375.00	1,314,000,000.00
tblWater	SepticTankPercent	10.33	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	12.7723	144.9487	95.9861	0.1214	15.5350	6.8591	22.3941	7.1236	6.3104	13.4339	0.0000	12,499.0336	12,499.0336	3.6129	0.0000	12,574.9037
2017	2.1223	20.9565	13.5991	0.0209	0.2664	1.2367	1.4326	0.0708	1.1378	1.1906	0.0000	2,084.8431	2,084.8431	0.5568	0.0000	2,096.5359
2018	2.3243	22.8536	18.5704	0.0275	0.2653	1.3082	1.5601	0.0705	1.2036	1.2716	0.0000	2,707.3542	2,707.3542	0.7339	0.0000	2,722.7657
2019	2.0832	20.3730	18.2091	0.0275	0.2519	1.1443	1.3962	0.0681	1.0527	1.1208	0.0000	2,659.3129	2,659.3129	0.7330	0.0000	2,674.7064
Total	**19.3022**	**209.1317**	**146.3648**	**0.1974**	**16.3187**	**10.5483**	**26.7831**	**7.3329**	**9.7044**	**17.0169**	**0.0000**	**19,950.5439**	**19,950.5439**	**5.6366**	**0.0000**	**20,068.9117**

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	3.0554	55.9070	72.7721	0.1214	6.5708	2.3906	8.9614	2.9105	2.3894	5.2999	0.0000	12,499.0336	12,499.0336	3.6129	0.0000	12,574.9037
2017	0.5584	9.5261	13.9091	0.0209	0.2664	0.4855	0.6815	0.0708	0.4846	0.5375	0.0000	2,084.8431	2,084.8431	0.5568	0.0000	2,096.5359
2018	0.7282	12.4937	19.8286	0.0275	0.2653	0.6783	0.9302	0.0705	0.6772	0.7453	0.0000	2,707.3542	2,707.3542	0.7339	0.0000	2,722.7657
2019	0.7107	12.4155	19.6618	0.0275	0.2519	0.6773	0.9292	0.0681	0.6763	0.7443	0.0000	2,659.3129	2,659.3129	0.7330	0.0000	2,674.7064
Total	**5.0527**	**90.3423**	**126.1716**	**0.1974**	**7.3545**	**4.2317**	**11.5023**	**3.1198**	**4.2275**	**7.3269**	**0.0000**	**19,950.5439**	**19,950.5439**	**5.6366**	**0.0000**	**20,068.9116**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**73.82**	**56.80**	**13.80**	**0.00**	**54.93**	**59.88**	**57.05**	**57.45**	**56.44**	**56.94**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	**4.2514**	**38.0437**	**25.9483**	**0.1089**	**0.2898**	**1.1256**	**1.4154**	**0.0790**	**1.1219**	**1.2009**		**12,155.5486**	**12,155.5486**	**0.3435**	**7.2000e-004**	**12,162.9838**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Energy	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Mobile	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345
Offroad	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	**4.2514**	**38.0437**	**25.9483**	**0.1089**	**0.2898**	**1.1256**	**1.4154**	**0.0790**	**1.1219**	**1.2009**		**12,155.5486**	**12,155.5486**	**0.3435**	**7.2000e-004**	**12,162.9838**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**86.57**	**93.45**	**75.82**	**89.93**	**0.00**	**95.66**	**76.07**	**0.00**	**95.98**	**89.66**	**0.00**	**91.53**	**91.53**	**96.89**	**0.00**	**91.53**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading & Site Work	Site Preparation	1/1/2016	2/25/2016	5	40	Grading & Site Work
2	Excavation	Grading	2/26/2016	6/16/2016	5	80	Excavation
3	Concrete Work	Building Construction	6/16/2016	3/22/2017	5	200	Concrete Work
4	Equipment Install	Building Construction	3/22/2017	10/31/2017	5	160	Equipment Install
5	Building Construction	Building Construction	11/1/2017	3/20/2018	5	100	Building Construction
6	Piping & Electrical	Building Construction	3/22/2018	11/28/2018	5	180	Piping & Electrical
7	Final Grading & Paving	Paving	11/29/2018	1/23/2019	5	40	Final Grading & Paving

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading & Site Work	Excavators	1	8.00	162	0.38
Grading & Site Work	Graders	1	8.00	174	0.41
Grading & Site Work	Rollers	2	8.00	80	0.38
Grading & Site Work	Rubber Tired Dozers	1	8.00	255	0.40
Grading & Site Work	Scrapers	2	8.00	361	0.48
Grading & Site Work	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Excavation	Cranes	0	7.00	226	0.29
Excavation	Excavators	2	8.00	162	0.38
Excavation	Forklifts	0	8.00	89	0.20
Excavation	Generator Sets	0	8.00	84	0.74
Excavation	Graders	2	8.00	174	0.41

Excavation	Rollers	2	8.00	80	0.38
Excavation	Rubber Tired Dozers	2	8.00	255	0.40
Excavation	Scrapers	4	8.00	361	0.48
Excavation	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Excavation	Welders	0	8.00	46	0.45
Concrete Work	Cranes	0	7.00	226	0.29
Concrete Work	Forklifts	2	8.00	89	0.20
Concrete Work	Generator Sets	0	8.00	84	0.74
Concrete Work	Other Material Handling Equipment	1	8.00	167	0.40
Concrete Work	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Concrete Work	Welders	0	8.00	46	0.45
Equipment Install	Cranes	1	8.00	226	0.29
Equipment Install	Forklifts	2	8.00	89	0.20
Equipment Install	Generator Sets	0	8.00	84	0.74
Equipment Install	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Equipment Install	Welders	0	8.00	46	0.45
Building Construction	Cranes	0	7.00	226	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Piping & Electrical	Cranes	0	7.00	226	0.29
Piping & Electrical	Forklifts	1	8.00	89	0.20
Piping & Electrical	Generator Sets	0	8.00	84	0.74
Piping & Electrical	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Piping & Electrical	Welders	0	8.00	46	0.45
Final Grading & Paving	Graders	1	8.00	174	0.41
Final Grading & Paving	Pavers	1	8.00	125	0.42

Final Grading & Paving	Paving Equipment	1	8.00	130	0.36
Final Grading & Paving	Rollers	2	8.00	80	0.38
Final Grading & Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading & Site Work	8	20.00	4.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Excavation	12	30.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Work	3	6.00	6.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Equipment Install	3	6.00	1.00	4.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	1	20.00	1.00	14.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Piping & Electrical	2	16.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Final Grading & Paving	6	15.00	10.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Grading & Site Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	6.4243	73.3534	47.3234	0.0585		3.5740	3.5740		3.2881	3.2881		6,086.3412	6,086.3412	1.8359		6,124.8942
Total	**6.4243**	**73.3534**	**47.3234**	**0.0585**	**6.0221**	**3.5740**	**9.5961**	**3.3102**	**3.2881**	**6.5983**		**6,086.3412**	**6,086.3412**	**1.8359**		**6,124.8942**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0536	0.3784	0.7386	8.6000e-004	0.0241	6.5000e-003	0.0306	6.9000e-003	5.9700e-003	0.0129		86.1579	86.1579	7.7000e-004		86.1741
Worker	0.0861	0.1493	1.3033	3.0600e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		252.1753	252.1753	0.0132		252.4525
Total	**0.1397**	**0.5277**	**2.0419**	**3.9200e-003**	**0.2796**	**8.3900e-003**	**0.2880**	**0.0747**	**7.7000e-003**	**0.0823**		**338.3332**	**338.3332**	**0.0140**		**338.6266**

3.2 Grading & Site Work - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3486	0.0000	2.3486	1.2910	0.0000	1.2910			0.0000			0.0000
Off-Road	1.4353	28.4646	35.5516	0.0585		1.2861	1.2861		1.2861	1.2861	0.0000	6,086.3412	6,086.3412	1.8359		6,124.8942
Total	**1.4353**	**28.4646**	**35.5516**	**0.0585**	**2.3486**	**1.2861**	**3.6347**	**1.2910**	**1.2861**	**2.5771**	**0.0000**	**6,086.3412**	**6,086.3412**	**1.8359**		**6,124.8942**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0536	0.3784	0.7386	8.6000e-004	0.0241	6.5000e-003	0.0306	6.9000e-003	5.9700e-003	0.0129		86.1579	86.1579	7.7000e-004		86.1741
Worker	0.0861	0.1493	1.3033	3.0600e-003	0.2555	1.8900e-003	0.2574	0.0678	1.7300e-003	0.0695		252.1753	252.1753	0.0132		252.4525
Total	**0.1397**	**0.5277**	**2.0419**	**3.9200e-003**	**0.2796**	**8.3900e-003**	**0.2880**	**0.0747**	**7.7000e-003**	**0.0823**		**338.3332**	**338.3332**	**0.0140**		**338.6266**

3.3 Excavation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.6954	0.0000	14.6954	6.9067	0.0000	6.9067			0.0000			0.0000
Off-Road	11.4939	133.9711	85.7945	0.1056		6.1884	6.1884		5.6933	5.6933		10,980.3720	10,980.3720	3.3121		11,049.9255
Total	**11.4939**	**133.9711**	**85.7945**	**0.1056**	**14.6954**	**6.1884**	**20.8838**	**6.9067**	**5.6933**	**12.6001**		**10,980.3720**	**10,980.3720**	**3.3121**		**11,049.9255**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0134	0.0946	0.1846	2.2000e-004	0.0104	1.6200e-003	0.0120	2.8000e-003	1.4900e-003	4.2900e-003		21.5395	21.5395	1.9000e-004		21.5435
Worker	0.1292	0.2240	1.9550	4.6000e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		378.2630	378.2630	0.0198		378.6787
Total	**0.1426**	**0.3186**	**2.1396**	**4.8200e-003**	**0.7268**	**4.4500e-003**	**0.7312**	**0.1862**	**4.0800e-003**	**0.1903**		**399.8025**	**399.8025**	**0.0200**		**400.2223**

3.3 Excavation - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7312	0.0000	5.7312	2.6936	0.0000	2.6936			0.0000			0.0000
Off-Road	2.5899	50.5223	62.4514	0.1056		2.1233	2.1233		2.1233	2.1233	0.0000	10,980.3720	10,980.3720	3.3121		11,049.9255
Total	**2.5899**	**50.5223**	**62.4514**	**0.1056**	**5.7312**	**2.1233**	**7.8545**	**2.6936**	**2.1233**	**4.8169**	**0.0000**	**10,980.3720**	**10,980.3720**	**3.3121**		**11,049.9255**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0134	0.0946	0.1846	2.2000e-004	0.0104	1.6200e-003	0.0120	2.8000e-003	1.4900e-003	4.2900e-003		21.5395	21.5395	1.9000e-004		21.5435
Worker	0.1292	0.2240	1.9550	4.6000e-003	0.7164	2.8300e-003	0.7192	0.1834	2.5900e-003	0.1860		378.2630	378.2630	0.0198		378.6787
Total	**0.1426**	**0.3186**	**2.1396**	**4.8200e-003**	**0.7268**	**4.4500e-003**	**0.7312**	**0.1862**	**4.0800e-003**	**0.1903**		**399.8025**	**399.8025**	**0.0200**		**400.2223**

3.4 Concrete Work - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0297	10.0466	6.5532	8.7900e-003		0.6559	0.6559		0.6035	0.6035		913.9697	913.9697	0.2757		919.7591
Total	**1.0297**	**10.0466**	**6.5532**	**8.7900e-003**		**0.6559**	**0.6559**		**0.6035**	**0.6035**		**913.9697**	**913.9697**	**0.2757**		**919.7591**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0803	0.5676	1.1078	1.3000e-003	0.0362	9.7500e-003	0.0459	0.0104	8.9600e-003	0.0193		129.2368	129.2368	1.1600e-003		129.2611
Worker	0.0258	0.0448	0.3910	9.2000e-004	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		75.6526	75.6526	3.9600e-003		75.7358
Total	**0.1062**	**0.6124**	**1.4988**	**2.2200e-003**	**0.1128**	**0.0103**	**0.1231**	**0.0307**	**9.4800e-003**	**0.0402**		**204.8894**	**204.8894**	**5.1200e-003**		**204.9968**

3.4 Concrete Work - 2016

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	913.9697	913.9697	0.2757		919.7591
Total	**0.2167**	**4.4537**	**6.6823**	**8.7900e-003**		**0.2525**	**0.2525**		**0.2525**	**0.2525**	**0.0000**	**913.9697**	**913.9697**	**0.2757**		**919.7591**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0803	0.5676	1.1078	1.3000e-003	0.0362	9.7500e-003	0.0459	0.0104	8.9600e-003	0.0193		129.2368	129.2368	1.1600e-003		129.2611
Worker	0.0258	0.0448	0.3910	9.2000e-004	0.0766	5.7000e-004	0.0772	0.0203	5.2000e-004	0.0208		75.6526	75.6526	3.9600e-003		75.7358
Total	**0.1062**	**0.6124**	**1.4988**	**2.2200e-003**	**0.1128**	**0.0103**	**0.1231**	**0.0307**	**9.4800e-003**	**0.0402**		**204.8894**	**204.8894**	**5.1200e-003**		**204.9968**

3.4 Concrete Work - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9248	8.9405	6.4464	8.7900e-003		0.5816	0.5816		0.5351	0.5351		899.7629	899.7629	0.2757		905.5523
Total	**0.9248**	**8.9405**	**6.4464**	**8.7900e-003**		**0.5816**	**0.5816**		**0.5351**	**0.5351**		**899.7629**	**899.7629**	**0.2757**		**905.5523**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0708	0.5012	1.0367	1.2900e-003	0.0362	8.1800e-003	0.0444	0.0104	7.5300e-003	0.0179		127.0374	127.0374	1.0700e-003		127.0599
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	**0.0930**	**0.5410**	**1.3774**	**2.2100e-003**	**0.1128**	**8.7200e-003**	**0.1216**	**0.0307**	**8.0300e-003**	**0.0387**		**199.6790**	**199.6790**	**4.6800e-003**		**199.7774**

3.4 Concrete Work - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2167	4.4537	6.6823	8.7900e-003		0.2525	0.2525		0.2525	0.2525	0.0000	899.7629	899.7629	0.2757		905.5523
Total	**0.2167**	**4.4537**	**6.6823**	**8.7900e-003**		**0.2525**	**0.2525**		**0.2525**	**0.2525**	**0.0000**	**899.7629**	**899.7629**	**0.2757**		**905.5523**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0708	0.5012	1.0367	1.2900e-003	0.0362	8.1800e-003	0.0444	0.0104	7.5300e-003	0.0179		127.0374	127.0374	1.0700e-003		127.0599
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	**0.0930**	**0.5410**	**1.3774**	**2.2100e-003**	**0.1128**	**8.7200e-003**	**0.1216**	**0.0307**	**8.0300e-003**	**0.0387**		**199.6790**	**199.6790**	**4.6800e-003**		**199.7774**

3.5 Equipment Install - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0699	11.3458	5.2545	8.6900e-003		0.6443	0.6443		0.5928	0.5928		889.7475	889.7475	0.2726		895.4725
Total	**1.0699**	**11.3458**	**5.2545**	**8.6900e-003**		**0.6443**	**0.6443**		**0.5928**	**0.5928**		**889.7475**	**889.7475**	**0.2726**		**895.4725**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.3000e-004	5.9200e-003	7.2800e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8392	1.8392	1.0000e-005		1.8395
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	**0.0346**	**0.1293**	**0.5208**	**1.1600e-003**	**0.0831**	**1.9900e-003**	**0.0851**	**0.0222**	**1.8300e-003**	**0.0240**		**95.6537**	**95.6537**	**3.8000e-003**		**95.7336**

3.5 Equipment Install - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2141	4.4021	5.3286	8.6900e-003		0.2223	0.2223		0.2223	0.2223	0.0000	889.7475	889.7475	0.2726		895.4725
Total	**0.2141**	**4.4021**	**5.3286**	**8.6900e-003**		**0.2223**	**0.2223**		**0.2223**	**0.2223**	**0.0000**	**889.7475**	**889.7475**	**0.2726**		**895.4725**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.3000e-004	5.9200e-003	7.2800e-003	2.0000e-005	4.4000e-004	9.0000e-005	5.3000e-004	1.2000e-004	8.0000e-005	2.0000e-004		1.8392	1.8392	1.0000e-005		1.8395
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0223	0.0398	0.3407	9.2000e-004	0.0766	5.4000e-004	0.0772	0.0203	5.0000e-004	0.0208		72.6416	72.6416	3.6100e-003		72.7175
Total	**0.0346**	**0.1293**	**0.5208**	**1.1600e-003**	**0.0831**	**1.9900e-003**	**0.0851**	**0.0222**	**1.8300e-003**	**0.0240**		**95.6537**	**95.6537**	**3.8000e-003**		**95.7336**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2109	1.8264	1.2491	1.5300e-003		0.1507	0.1507		0.1386	0.1386		156.2548	156.2548	0.0479		157.2602
Total	**0.2109**	**1.8264**	**1.2491**	**1.5300e-003**		**0.1507**	**0.1507**		**0.1386**	**0.1386**		**156.2548**	**156.2548**	**0.0479**		**157.2602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.9500e-003	0.0332	0.0408	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.2996	10.2996	7.0000e-005		10.3012
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0743	0.1327	1.1357	3.0600e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		242.1386	242.1386	0.0121		242.3916
Total	**0.0890**	**0.2494**	**1.3493**	**3.3800e-003**	**0.2664**	**3.6700e-003**	**0.2701**	**0.0708**	**3.3800e-003**	**0.0741**		**273.6111**	**273.6111**	**0.0123**		**273.8695**

3.6 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	156.2548	156.2548	0.0479		157.2602
Total	**0.0377**	**0.8602**	**1.1616**	**1.5300e-003**		**0.0603**	**0.0603**		**0.0603**	**0.0603**	**0.0000**	**156.2548**	**156.2548**	**0.0479**		**157.2602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.9500e-003	0.0332	0.0408	1.0000e-004	4.9100e-003	5.0000e-004	5.4100e-003	1.2800e-003	4.6000e-004	1.7400e-003		10.2996	10.2996	7.0000e-005		10.3012
Vendor	0.0118	0.0835	0.1728	2.2000e-004	6.0300e-003	1.3600e-003	7.4000e-003	1.7200e-003	1.2500e-003	2.9800e-003		21.1729	21.1729	1.8000e-004		21.1767
Worker	0.0743	0.1327	1.1357	3.0600e-003	0.2555	1.8100e-003	0.2573	0.0678	1.6700e-003	0.0694		242.1386	242.1386	0.0121		242.3916
Total	**0.0890**	**0.2494**	**1.3493**	**3.3800e-003**	**0.2664**	**3.6700e-003**	**0.2701**	**0.0708**	**3.3800e-003**	**0.0741**		**273.6111**	**273.6111**	**0.0123**		**273.8695**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1781	1.5745	1.2112	1.5300e-003		0.1257	0.1257		0.1156	0.1156		153.7876	153.7876	0.0479		154.7930
Total	**0.1781**	**1.5745**	**1.2112**	**1.5300e-003**		**0.1257**	**0.1257**		**0.1156**	**0.1156**		**153.7876**	**153.7876**	**0.0479**		**154.7930**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8400e-003	0.0296	0.0394	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.6000e-004	1.4700e-003		10.1195	10.1195	7.0000e-005		10.1210
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0643	0.1185	0.9952	3.0500e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		232.2612	232.2612	0.0111		232.4935
Total	**0.0780**	**0.2231**	**1.1983**	**3.3700e-003**	**0.2653**	**3.5100e-003**	**0.2689**	**0.0705**	**3.2400e-003**	**0.0737**		**263.1838**	**263.1838**	**0.0113**		**263.4213**

3.6 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0377	0.8602	1.1616	1.5300e-003		0.0603	0.0603		0.0603	0.0603	0.0000	153.7876	153.7876	0.0479		154.7930
Total	**0.0377**	**0.8602**	**1.1616**	**1.5300e-003**		**0.0603**	**0.0603**		**0.0603**	**0.0603**	**0.0000**	**153.7876**	**153.7876**	**0.0479**		**154.7930**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.8400e-003	0.0296	0.0394	1.0000e-004	3.8500e-003	4.9000e-004	4.3400e-003	1.0200e-003	4.6000e-004	1.4700e-003		10.1195	10.1195	7.0000e-005		10.1210
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0643	0.1185	0.9952	3.0500e-003	0.2555	1.7700e-003	0.2572	0.0678	1.6300e-003	0.0694		232.2612	232.2612	0.0111		232.4935
Total	**0.0780**	**0.2231**	**1.1983**	**3.3700e-003**	**0.2653**	**3.5100e-003**	**0.2689**	**0.0705**	**3.2400e-003**	**0.0737**		**263.1838**	**263.1838**	**0.0113**		**263.4213**

3.7 Piping & Electrical - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4110	3.8755	3.2559	4.2500e-003		0.2887	0.2887		0.2656	0.2656		427.4666	427.4666	0.1331		430.2612
Total	**0.4110**	**3.8755**	**3.2559**	**4.2500e-003**		**0.2887**	**0.2887**		**0.2656**	**0.2656**		**427.4666**	**427.4666**	**0.1331**		**430.2612**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0514	0.0948	0.7962	2.4400e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		185.8090	185.8090	8.8500e-003		185.9948
Total	**0.0623**	**0.1698**	**0.9599**	**2.6600e-003**	**0.2104**	**2.6600e-003**	**0.2131**	**0.0559**	**2.4600e-003**	**0.0584**		**206.6121**	**206.6121**	**9.0200e-003**		**206.8016**

3.7 Piping & Electrical - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1041	2.3778	3.2109	4.2500e-003		0.1666	0.1666		0.1666	0.1666	0.0000	427.4666	427.4666	0.1331		430.2612
Total	**0.1041**	**2.3778**	**3.2109**	**4.2500e-003**		**0.1666**	**0.1666**		**0.1666**	**0.1666**	**0.0000**	**427.4666**	**427.4666**	**0.1331**		**430.2612**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0108	0.0750	0.1637	2.2000e-004	6.0300e-003	1.2500e-003	7.2800e-003	1.7200e-003	1.1500e-003	2.8700e-003		20.8031	20.8031	1.7000e-004		20.8067
Worker	0.0514	0.0948	0.7962	2.4400e-003	0.2044	1.4100e-003	0.2058	0.0542	1.3100e-003	0.0555		185.8090	185.8090	8.8500e-003		185.9948
Total	**0.0623**	**0.1698**	**0.9599**	**2.6600e-003**	**0.2104**	**2.6600e-003**	**0.2131**	**0.0559**	**2.4600e-003**	**0.0584**		**206.6121**	**206.6121**	**9.0200e-003**		**206.8016**

3.8 Final Grading & Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1619	22.0147	16.1869	0.0231		1.2944	1.2944		1.1908	1.1908		2,325.1274	2,325.1274	0.7238		2,340.3282
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1678**	**22.0147**	**16.1869**	**0.0231**		**1.2944**	**1.2944**		**1.1908**	**1.1908**		**2,325.1274**	**2,325.1274**	**0.7238**		**2,340.3282**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1083	0.7501	1.6371	2.1500e-003	0.0603	0.0125	0.0728	0.0172	0.0115	0.0287		208.0308	208.0308	1.7400e-003		208.0674
Worker	0.0482	0.0889	0.7464	2.2900e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		174.1959	174.1959	8.3000e-003		174.3702
Total	**0.1565**	**0.8390**	**2.3835**	**4.4400e-003**	**0.2519**	**0.0138**	**0.2658**	**0.0681**	**0.0127**	**0.0808**		**382.2267**	**382.2267**	**0.0100**		**382.4375**

3.8 Final Grading & Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,325.1274	2,325.1274	0.7238		2,340.3282
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5717**	**11.6548**	**17.4451**	**0.0231**		**0.6645**	**0.6645**		**0.6645**	**0.6645**	**0.0000**	**2,325.1274**	**2,325.1274**	**0.7238**		**2,340.3282**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1083	0.7501	1.6371	2.1500e-003	0.0603	0.0125	0.0728	0.0172	0.0115	0.0287		208.0308	208.0308	1.7400e-003		208.0674
Worker	0.0482	0.0889	0.7464	2.2900e-003	0.1916	1.3200e-003	0.1929	0.0508	1.2200e-003	0.0520		174.1959	174.1959	8.3000e-003		174.3702
Total	**0.1565**	**0.8390**	**2.3835**	**4.4400e-003**	**0.2519**	**0.0138**	**0.2658**	**0.0681**	**0.0127**	**0.0808**		**382.2267**	**382.2267**	**0.0100**		**382.4375**

3.8 Final Grading & Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9383	19.6123	15.9924	0.0231		1.1315	1.1315		1.0410	1.0410		2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9442**	**19.6123**	**15.9924**	**0.0231**		**1.1315**	**1.1315**		**1.0410**	**1.0410**		**2,287.0356**	**2,287.0356**	**0.7236**		**2,302.2311**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	0.6799	1.5447	2.1500e-003	0.0603	0.0115	0.0718	0.0173	0.0106	0.0278		204.4316	204.4316	1.6800e-003		204.4670
Worker	0.0433	0.0809	0.6720	2.2900e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		167.8457	167.8457	7.7500e-003		168.0084
Total	**0.1390**	**0.7607**	**2.2167**	**4.4400e-003**	**0.2519**	**0.0128**	**0.2647**	**0.0681**	**0.0118**	**0.0798**		**372.2773**	**372.2773**	**9.4300e-003**		**372.4754**

3.8 Final Grading & Paving - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5658	11.6548	17.4451	0.0231		0.6645	0.6645		0.6645	0.6645	0.0000	2,287.0356	2,287.0356	0.7236		2,302.2311
Paving	5.9000e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.5717**	**11.6548**	**17.4451**	**0.0231**		**0.6645**	**0.6645**		**0.6645**	**0.6645**	**0.0000**	**2,287.0356**	**2,287.0356**	**0.7236**		**2,302.2311**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0958	0.6799	1.5447	2.1500e-003	0.0603	0.0115	0.0718	0.0173	0.0106	0.0278		204.4316	204.4316	1.6800e-003		204.4670
Worker	0.0433	0.0809	0.6720	2.2900e-003	0.1916	1.3100e-003	0.1929	0.0508	1.2100e-003	0.0520		167.8457	167.8457	7.7500e-003		168.0084
Total	**0.1390**	**0.7607**	**2.2167**	**4.4400e-003**	**0.2519**	**0.0128**	**0.2647**	**0.0681**	**0.0118**	**0.0798**		**372.2773**	**372.2773**	**9.4300e-003**		**372.4754**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345
Unmitigated	0.3409	2.4591	6.2444	0.0108	0.2898	0.0464	0.3362	0.0790	0.0427	0.1216		990.8265	990.8265	9.9100e-003		991.0345

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	32.09	12.00	12.00	101,785	101,785
Parking Lot	0.00	0.00	0.00		
Total	32.09	12.00	12.00	101,785	101,785

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.070000	0.070000	0.070000	0.000000	0.000000	0.000000	0.000000	0.790000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
NaturalGas Unmitigated	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	332.362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Total		**3.5800e-003**	**0.0326**	**0.0274**	**2.0000e-004**		**2.4800e-003**	**2.4800e-003**		**2.4800e-003**	**2.4800e-003**		**39.1014**	**39.1014**	**7.5000e-004**	**7.2000e-004**	**39.3393**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Light Industry	0.332362	3.5800e-003	0.0326	0.0274	2.0000e-004		2.4800e-003	2.4800e-003		2.4800e-003	2.4800e-003		39.1014	39.1014	7.5000e-004	7.2000e-004	39.3393
Total		**3.5800e-003**	**0.0326**	**0.0274**	**2.0000e-004**		**2.4800e-003**	**2.4800e-003**		**2.4800e-003**	**2.4800e-003**		**39.1014**	**39.1014**	**7.5000e-004**	**7.2000e-004**	**39.3393**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Unmitigated	0.2264	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	**0.2264**	**1.0000e-005**	**1.6000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.4100e-003**	**3.4100e-003**	**1.0000e-005**		**3.6000e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.2049					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5000e-004	1.0000e-005	1.6000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		3.4100e-003	3.4100e-003	1.0000e-005		3.6000e-003
Total	**0.2264**	**1.0000e-005**	**1.6000e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**3.4100e-003**	**3.4100e-003**	**1.0000e-005**		**3.6000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	24.00	8	500	0.74	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Generator Sets	3.6805	35.5519	19.6749	0.0979		1.0767	1.0767		1.0767	1.0767		11,125.6173	11,125.6173	0.3328		11,132.6063
Total	**3.6805**	**35.5519**	**19.6749**	**0.0979**		**1.0767**	**1.0767**		**1.0767**	**1.0767**		**11,125.6173**	**11,125.6173**	**0.3328**		**11,132.6063**

10.0 Vegetation

GHG PROCESS EMISSIONS

EXISTING

AVERAGE DAILY FLOW	2.6	MGD
INFLUENT BOD LOADING	270	MG/L BOD5
EFFLUENT BOD LOADING	10	MG/L BOD5
BOD REMOVAL FACTOR	0.96	
AVG PER CAPITA WW FLOW	90	City of Ridgecrest. 2015. WWTP Facility Plan.
EQUIV PER CAPITA SERVED	28888.9	

ANNUAL PROCESS CH4 FROM ANAEROBIC AND FACULTATIVE WASTEWATER TREATMENT LAGOONS

37	CH4 (CO2E)

(Typically only applies to poorly run POTWs. EPA considers CH4 from compliant POTWs with aerobic treatment systems to be negligible. Per Local Government Operations Protocol May 2010.) Emissions from other GHGs would be minimal.

PROPOSED

AVERAGE DAILY FLOW	3.6	MGD
INFLUENT BOD LOADING	270	MG/L BOD5
EFFLUENT BOD LOADING	10	MG/L BOD5
BOD REMOVAL FACTOR	0.96	
AVG PER CAPITA WW FLOW	85	City of Ridgecrest. 2015. WWTP Facility Plan.
EQUIV PER CAPITA SERVED	42352.9	

ANNUAL PROCESS CH4 FROM ANAEROBIC AND FACULTATIVE WASTEWATER TREATMENT LAGOONS

37	CH4 (CO2E)

(Typically only applies to poorly run POTWs. EPA considers CH4 from compliant POTWs with aerobic treatment systems to be negligible. Per Local Government Operations Protocol May 2010.) Emissions from other GHGs would be minimal.

WWTP EMISSIONS

EXISTING CONDITIONS

UNIT PROCESS	NO. OF UNITS	FLOW/ UNIT (MGD)	TOTAL FLOW (MGD)	EF (LB/YR/MGD) Total ROG/VOCs	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLOR-ETHANE	ACETONE	MEK	MIBK
PRELIMINARY/PRIMARY TREATMENT															
HEADWORKS-NON DUCTED	1	2.6	2.6	0.10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	1	2.6	2.6	0.60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PRIMARY SEDIMENTATION	3	0.9	2.6	40.00	0.041	0.029	0.180	0.016	0.056	0.100	0.071	0.040	5.100	1.020	0.925
FLOW EQUALIZATION-PRIMARY EFFLUENT	1	2.6	2.6	106.96	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.700	0.937	0.852
BIOLOGICAL TREATMENT															
ACTIVATED SLUDGE-MECHANICALLY AERATED	1	2.6	2.6	30.00	0.000	0.000	0.000	0.000	3.900	7.300	5.000	2.900	4.700	0.937	0.852
POST BIOLOGICAL TREATMENT															
SECONDARY CLARIFIERS	1	2.6	2.6	12.00	0.000	0.000	0.000	0.000	0.038	0.070	0.021	0.012	12.100	2.410	2.190
FINAL EFFLUENT EVAPORATION PONDS	1	2.6	2.6	523.56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING															
SLUDGE DIGESTION - ANAEROBIC-FIXED COVERS	2	1.3	2.6	0.04	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	1	2.6	2.6	13.01	0	0	0	0	0	0	0	0	0	0	0

EXISTING CONDITIONS

PROCESS	Total ROG/VOCs	TOTAL EMISSIONS (LBS/YR) BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLORO-ETHANE	ACETONE**	METHYL ETHYL KETONE	MIBK**
PRELIMINARY/PRIMARY TREATMENT												
HEADWORKS-NON DUCTED	0.260	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	1.560	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PRIMARY SEDIMENTATION	104.000	0.107	0.075	0.468	0.042	0.146	0.260	0.185	0.104	13.260	2.652	2.405
FLOW EQUALIZATION-PRIMARY EFFLUENT	278.096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.220	2.436	2.215
BIOLOGICAL TREATMENT												
ACTIVATED SLUDGE-MECHANICALLY AERATED	78.000	0.000	0.000	0.000	0.000	10.140	18.980	13.000	7.540	12.220	2.436	2.215
POST BIOLOGICAL TREATMENT												
SECONDARY CLARIFIERS	31.200	0.000	0.000	0.000	0.000	0.099	0.182	0.055	0.031	31.460	6.266	5.694
FINAL EFFLUENT EVAPORATION PONDS	1361.256	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING												
SLUDGE DIGESTION - ANAEROBIC-FIXED COVERS	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	33.826	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL (LBS/YR):	1966.30	0.11	0.08	0.47	0.04	10.38	19.42	13.24	7.68	81.38	16.23	14.74
TOTAL (LBS/DY):	5.39	0.00	0.00	0.00	0.00	0.03	0.05	0.04	0.02	0.22	0.04	0.04
TOTAL (LBS/HR):		0.00001	0.00001	0.00005	0.00000	0.00119	0.00222	0.00151	0.00088	0.00929	0.00185	0.00168
TOTAL (TONS/YR):	0.983	0.000	0.000	0.000	0.000	0.005	0.010	0.007	0.004	0.041	0.008	0.007
TAC SCREENING RISK ASSESSMENT*												
CANCER UNIT RISK/POTENCY FACTOR:		2.90E-05	2.50E-06	0.00E+00	0.00E+00	5.30E-06	1.00E-06	5.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RECEPTOR PROXIMITY ADJUSTMENT FACTOR:		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
NORMALIZATION FACTOR:		1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03
ACUTE EXPOSURE EFFECTS LEVEL		1.30E+03	0.00E+00	3.70E+04	2.20E+04	1.50E+02	1.40E+04	2.00E+04	6.80E+04	0.00E+00	1.30E+04	0.00E+00
CHRONIC EXPOSURE EFFECTS LEVEL		6.00E+01	2.00E+03	3.00E+02	7.00E+02	3.00E+02	4.00E+02	3.50E+01	1.00E+03	0.00E+00	0.00E+00	0.00E+00
CARCINOGENIC RISK:		2.10E-04	1.28E-05	0.00E+00	0.00E+00	3.74E-03	1.32E-03	5.31E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL CARCINOGENIC RISK:		1.06E-02	ONSITE	2.65E-03	OFFSITE RECEPTOR							
NON-CARCINOGENIC ACUTE RISK:		5.616E-07	0.000E+00	8.663E-08	1.295E-08	4.742E-04	9.502E-06	0.000E+00	0.000E+00	0.000E+00	8.549E-06	0.000E+00
TOTAL NON-CARCINOGENIC ACUTE RISK:		4.929E-04										
NON-CARCINOGENIC CHRONIC RISK:		1.22E-06	0.00E+00	1.07E-06	4.07E-08	2.37E-05	3.33E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL NON-CARCINOGENIC CHRONIC RISK:		5.93E-05										
TOTAL NON-CARCINOGENIC RISK:		5.52E-04	ONSITE	1.38E-04	OFFSITE RECEPTOR							

**Based on methodology derived from the CAPCOA Air Toxics "Hot Spots" Program, Facility Prioritization Guidelines (available at website url: http://www.arb.ca.gov/ab2588/RRAP-IWRA/priguide.pdf) and risk values obtained from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. February 14, 2011. Available at url: http://www.arb.ca.gov/toxics/healthval/healthval.htm.*

***The toxicity of acetone is low, and the modeled exposures indicate that it would not pose any significant health risk, even in worst-case scenarios. Based on this information, acetone has been removed from the list of Hot Spots chemicals by the Air Resources Board. Office of Environmental Health Hazard Assessment (OEHHA). Accessed September 25, 2011. Air-Hotspots-Acute RELs. Website url: http://www.oehha.ca.gov/air/acute_rels/response4_2.html. Methyl Isobutyl ketone (MIBK) is not currently identified by the OEHHA as part of the chemicals to be evaluated as part of the "Hot Spots" program and no health risk values are currently available for use in risk assessment for this chemical.*

WWTP EMISSIONS

PROJECT ALTERNATIVE 1

UNIT PROCESS	NO. OF UNITS	FLOW/ UNIT (MGD)	TOTAL FLOW (MGD)	Total ROG/VOCs	EF (LB/YR/MGD) BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLOR-ETHANE	ACETONE	MEK	MIBK
PRELIMINARY/PRIMARY TREATMENT															
HEADWORKS-DUCTED	1	3.6	3.6	86.37	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	1	3.6	3.6	0.60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BIOLOGICAL TREATMENT															
ACTIVATED SLUDGE-MECHANICALLY AERATED	2	1.8	3.6	30.00	0.000	0.000	0.000	0.000	3.900	7.300	5.000	2.900	4.700	0.937	0.852
POST BIOLOGICAL TREATMENT															
SECONDARY CLARIFIERS	2	1.8	3.6	12.00	0.000	0.000	0.000	0.000	0.038	0.070	0.021	0.012	12.100	2.410	2.190
EFFLUENT FILTRATION	2	0.9	1.8	0.60	0.009	0.006	0.039	0.055	0.010	0.018	0.013	0.007	0.000	0.000	0.000
CHLORINATION	1	1.8	1.8	0.90	0.000	0.000	0.000	0.000	0.050	0.093	0.064	0.075	0.000	0.000	0.000
FINAL EFFLUENT EVAPORATION PONDS*	1	3.6	3.6	523.56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING															
SLUDGE DIGESTION - AEROBIC	2	1.8	3.6	10.25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DEWATERING - BELT PRESS	1	3.6	3.6	60.00	2.500	3.300	20.000	6.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE STORAGE	1	3.6	3.6	6.10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE TRUCK LOADING OPERATIONS	1	3.6	3.6	1.73	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	1	3.6	3.6	13.01	0	0	0	0	0	0	0	0	0	0	0

PROJECT ALTERNATIVE 1

TOTAL EMISSIONS (LBS/YR)

PROCESS	Total ROG/VOCs	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLOR-ETHANE	ACETONE	MEK	MIBK
PRELIMINARY/PRIMARY TREATMENT												
HEADWORKS-DUCTED	310.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	2.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BIOLOGICAL TREATMENT												
ACTIVATED SLUDGE-MECHANICALLY AERATED	108.000	0.000	0.000	0.000	0.000	14.040	26.280	18.000	10.440	16.920	3.373	3.067
POST BIOLOGICAL TREATMENT												
SECONDARY CLARIFIERS	43.200	0.000	0.000	0.000	0.000	0.137	0.252	0.076	0.043	43.560	8.676	7.884
EFFLUENT FILTRATION	1.080	0.016	0.011	0.070	0.099	0.018	0.032	0.023	0.013	0.000	0.000	0.000
CHLORINATION	1.620	0.000	0.000	0.000	0.000	0.090	0.167	0.115	0.135	0.000	0.000	0.000
FINAL EFFLUENT EVAPORATION PONDS	1884.816	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING												
SLUDGE DIGESTION - AEROBIC	36.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DEWATERING - BELT PRESS	216.000	9.000	11.880	72.000	22.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE STORAGE	21.960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE TRUCK LOADING OPERATIONS	6.228	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	46.836	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL (LBS/YR):	2679.73	9.02	11.89	72.07	22.78	14.28	26.73	18.21	10.63	60.48	12.05	10.95
TOTAL (LBS/DY):	7.34	0.02	0.03	0.20	0.06	0.04	0.07	0.05	0.03	0.17	0.03	0.03
TOTAL (LBS/HR):		0.00103	0.00136	0.00823	0.00260	0.00163	0.00305	0.00208	0.00121	0.00690	0.00138	0.00125
TOTAL (TONS/YR):	1.340	0.005	0.006	0.036	0.011	0.007	0.013	0.009	0.005	0.030	0.006	0.005

TAC SCREENING RISK ASSESSMENT

CANCER UNIT RISK/POTENCY FACTOR:	2.90E-05	2.50E-06	0.00E+00	0.00E+00	5.30E-06	1.00E-06	5.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RECEPTOR PROXIMITY ADJUSTMENT FACTOR:	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
NORMALIZATION FACTOR:	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03
ACUTE EXPOSURE EFFECTS LEVEL	1.30E+03	0.00E+00	3.70E+04	2.20E+04	1.50E+02	1.40E+04	2.00E+04	6.80E+04	0.00E+00	1.30E+04	0.00E+00
CHRONIC EXPOSURE EFFECTS LEVEL	6.00E+01	2.00E+03	3.00E+02	7.00E+02	3.00E+02	4.00E+02	3.50E+01	1.00E+03	0.00E+00	0.00E+00	0.00E+00
CARCINOGENIC RISK:	1.78E-02	2.02E-03	0.00E+00	0.00E+00	5.15E-03	1.82E-03	7.31E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL CARCINOGENIC RISK:	3.41E-02	ONSITE	8.52E-03	OFFSITE RECEPTOR							
NON-CARCINOGENIC ACUTE RISK:	4.750E-05	0.000E+00	1.334E-05	7.092E-06	6.523E-04	1.308E-05	0.000E+00	0.000E+00	0.000E+00	6.348E-06	0.000E+00
TOTAL NON-CARCINOGENIC ACUTE RISK:	7.396E-04										
NON-CARCINOGENIC CHRONIC RISK:	1.03E-04	0.00E+00	1.65E-04	2.23E-05	3.26E-05	4.58E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL NON-CARCINOGENIC CHRONIC RISK:	3.68E-04										
TOTAL NON-CARCINOGENIC RISK:	1.11E-03	ONSITE	2.77E-04	OFFSITE RECEPTOR							

**Based on methodology derived from the CAPCOA Air Toxics "Hot Spots" Program, Facility Prioritization Guidelines (available at website url: http://www.arb.ca.gov/ab2588/RRAP-IWRA/priguide.pdf) and risk values obtained from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. February 14, 2011. Available at url: http://www.arb.ca.gov/toxics/healthval/healthval.htm.*

***The toxicity of acetone is low, and the modeled exposures indicate that it would not pose any significant health risk, even in worst-case scenarios. Based on this information, acetone has been removed from the list of Hot Spots chemicals by the Air Resources Board. Office of Environmental Health Hazard Assessment (OEHHA). Accessed September 25, 2011. Air-Hotspots-Acute RELs. Website url: http://www.oehha.ca.gov/air/acute_rels/response4_2.html. Methyl Isobutyl ketone (MIBK) is not currently identified by the OEHHA as part of the chemicals to be evaluated as part of the "Hot Spots" program and no health risk values are currently available for use in risk assessment for this chemical.*

WWTP EMISSIONS

PROJECT ALTERNATIVE 2

UNIT PROCESS	NO. OF UNITS	FLOW/ UNIT (MGD)	TOTAL FLOW (MGD)	EF (LB/YR/MGD) Total ROG/VOCs	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLOR-ETHANE	ACETONE	MEK	MIBK
PRELIMINARY/PRIMARY TREATMENT															
HEADWORKS-DUCTED	1	3.6	3.6	86.37	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	1	3.6	3.6	0.60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BIOLOGICAL TREATMENT															
ACTIVATED SLUDGE-MECHANICALLY AERATED	2	1.8	3.6	30.00	0.000	0.000	0.000	0.000	3.900	7.300	5.000	2.900	4.700	0.937	0.852
POST BIOLOGICAL TREATMENT															
SECONDARY CLARIFIERS	2	1.8	3.6	12.00	0.000	0.000	0.000	0.000	0.038	0.070	0.021	0.012	12.100	2.410	2.190
EFFLUENT FILTRATION	2	0.9	1.8	0.60	0.009	0.006	0.039	0.055	0.010	0.018	0.013	0.007	0.000	0.000	0.000
CHLORINATION	1	1.8	1.8	0.90	0.000	0.000	0.000	0.000	0.050	0.093	0.064	0.075	0.000	0.000	0.000
FINAL EFFLUENT EVAPORATION PONDS*	1	3.6	3.6	523.56	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING															
SLUDGE DIGESTION - AEROBIC	2	1.8	3.6	10.25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DEWATERING - BELT PRESS	1	3.6	3.6	60.00	2.500	3.300	20.000	6.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE STORAGE	1	3.6	3.6	6.10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE TRUCK LOADING OPERATIONS	1	3.6	3.6	1.73	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	1	3.6	3.6	13.01	0	0	0	0	0	0	0	0	0	0	0

PROJECT ALTERNATIVE 2

TOTAL EMISSIONS (LBS/YR)

PROCESS	Total ROG/VOCs	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	CHLOROFORM	METHYLENE CHLORIDE	TETRACHLORO-ETHYLENE	1,1,1-TRICHLOR-ETHANE	ACETONE	MEK	MIBK
PRELIMINARY/PRIMARY TREATMENT												
HEADWORKS-DUCTED	310.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GRIT REMOVAL-NON AERATED	2.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BIOLOGICAL TREATMENT												
ACTIVATED SLUDGE-MECHANICALLY AERATED	108.000	0.000	0.000	0.000	0.000	14.040	26.280	18.000	10.440	16.920	3.373	3.067
POST BIOLOGICAL TREATMENT												
SECONDARY CLARIFIERS	43.200	0.000	0.000	0.000	0.000	0.137	0.252	0.076	0.043	43.560	8.676	7.884
EFFLUENT FILTRATION	1.080	0.016	0.011	0.070	0.099	0.018	0.032	0.023	0.013	0.000	0.000	0.000
CHLORINATION	1.620	0.000	0.000	0.000	0.000	0.090	0.167	0.115	0.135	0.000	0.000	0.000
FINAL EFFLUENT EVAPORATION PONDS	1884.816	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SOLIDS HANDLING												
SLUDGE DIGESTION - AEROBIC	36.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DEWATERING - BELT PRESS	216.000	9.000	11.880	72.000	22.680	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE STORAGE	21.960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE CAKE TRUCK LOADING OPERATIONS	6.228	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SLUDGE DRYING BED - STATIC	46.836	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL (LBS/YR):	2679.73	9.02	11.89	72.07	22.78	14.28	26.73	18.21	10.63	60.48	12.05	10.95
TOTAL (LBS/DY):	7.34	0.02	0.03	0.20	0.06	0.04	0.07	0.05	0.03	0.17	0.03	0.03
TOTAL (LBS/HR):		0.00103	0.00136	0.00823	0.00260	0.00163	0.00305	0.00208	0.00121	0.00690	0.00138	0.00125
TOTAL (TONS/YR):	1.340	0.005	0.006	0.036	0.011	0.007	0.013	0.009	0.005	0.030	0.006	0.005

TAC SCREENING RISK ASSESSMENT

CANCER UNIT RISK/POTENCY FACTOR:	2.90E-05	2.50E-06	0.00E+00	0.00E+00	5.30E-06	1.00E-06	5.90E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RECEPTOR PROXIMITY ADJUSTMENT FACTOR:	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
NORMALIZATION FACTOR:	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03	1.70E+03
ACUTE EXPOSURE EFFECTS LEVEL	1.30E+03	0.00E+00	3.70E+04	2.20E+04	1.50E+02	1.40E+04	2.00E+04	6.80E+04	0.00E+00	1.30E+04	0.00E+00
CHRONIC EXPOSURE EFFECTS LEVEL	6.00E+01	2.00E+03	3.00E+02	7.00E+02	3.00E+02	4.00E+02	3.50E+01	1.00E+03	0.00E+00	0.00E+00	0.00E+00
CARCINOGENIC RISK:	1.11E-01	1.26E-02	0.00E+00	0.00E+00	3.22E-02	1.14E-02	4.57E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL CARCINOGENIC RISK:	2.13E-01	ONSITE	5.32E-02	OFFSITE RECEPTOR							
NON-CARCINOGENIC ACUTE RISK:	2.969E-04	0.000E+00	8.338E-05	4.432E-05	4.077E-03	8.174E-05	0.000E+00	0.000E+00	0.000E+00	3.968E-05	0.000E+00
TOTAL NON-CARCINOGENIC ACUTE RISK:	4.623E-03										
NON-CARCINOGENIC CHRONIC RISK:	6.43E-04	0.00E+00	1.03E-03	1.39E-04	2.04E-04	2.86E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
TOTAL NON-CARCINOGENIC CHRONIC RISK:	2.30E-03										
TOTAL NON-CARCINOGENIC RISK:	6.92E-03	ONSITE	1.73E-03	OFFSITE RECEPTOR							

**Based on methodology derived from the CAPCOA Air Toxics "Hot Spots" Program, Facility Prioritization Guidelines (available at website url: http://www.arb.ca.gov/ab2588/RRAP-IWRA/priguide.pdf) and risk values obtained from the Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values. February 14, 2011. Available at url: http://www.arb.ca.gov/toxics/healthval/healthval.htm.*

***The toxicity of acetone is low, and the modeled exposures indicate that it would not pose any significant health risk, even in worst-case scenarios. Based on this information, acetone has been removed from the list of Hot Spots chemicals by the Air Resources Board. Office of Environmental Health Hazard Assessment (OEHHA). Accessed September 25, 2011. Air-Hotspots-Acute RELs. Website url: http://www.oehha.ca.gov/air/acute_rels/response4_2.html. Methyl Isobutyl ketone (MIBK) is not currently identified by the OEHHA as part of the chemicals to be evaluated as part of the "Hot Spots" program and no health risk values are currently available for use in risk assessment for this chemical.*

AB2588 Health Risk Screening/Facility Risk Prioritization

AB2588 requires the prioritization of facilities as either high, intermediate, or low priority to determine if a facility needs to conduct a health risk assessment. Facilities exceeding total facility score of 10 are considered to potentially exceed the MBUAPCD's significance thresholds for human health risk and would be considered "high priority." A more detailed health risk assessment would be required for "high priority" facilities. Toxics Best Control Technology (TBACT) is typically required for facilities identified as "intermediate priority" facilities. "Low priority" facilities are typically not considered to result in a significant impact.

Project: Ridgecrest WWTP-Alternative 1
Source: Emergency Generator
Receptor Distance: 530 m
Release Height: 4 m
Facility Risk Category: Intermediate Priority
Exceeds Thresholds/High Priority?: No

Total Facility Score	Category
TS > 10	High Priority
1 < TS ≤ 10	Intermediate Priority
TS ≤ 1	Low Priority

The spreadsheet below was based on the CAPCOA - Dispersion Adjustment Procedure.

cancer $TS = \{\Sigma (E_C) * (P_C) * (RP) * (D_h)\} * (128)$
acute $TS = \Sigma (E_C) / (P_C) * (RP) * (D_h) * (25)$
chronic $TS = \Sigma (E_C) / (P_C) * (RP) * (D_h) * (2.5)$

			E_c			P_c	Chronic		Acute		D_h	RP	Total Scrores		
			Emissions										Cancer	Chronic	Acute
													0.23	0.02	0.00
													Individual Priority Scores		
Emittent ID No. (CAS)	Substance Name	Degree of Accuracy (lb/yr)	Annual (lb/yr) (a)	Avg Hourly (lb/hr) (b)	Max Hourly (lb/hr) (c)	Unit Risk Value $(ug/m^3)^{-1}$ (d)	Chronic REL (ug/m3) (e)	Target Organ (f)	Acute REL (ug/m3) (g)	Target Organ (f)	Dispersion Adjustment Factors (h)	Receptor Proximity (i)	**Cancer** T_{cancer} (j)	**Chronic** $T_{chronic}$ (k)	**Acute** T_{acute} (l)
9901	diesel exhaust (particulate emissions)	2	9.00E+00	5.00E-02	5.00E-02	3.00E-04	5.00E+00	R	0.00E+00		60	0.01	2.28E-01	1.65E-02	
						0.00E+00	0.00E+00		0.00E+00		60	0.01			
						0.00E+00	0.00E+00		0.00E+00		60	0.01			
						0.00E+00	0.00E+00		0.00E+00		60	0.01			

	Facility Prioritization Scores		
Target Organs (TO)	cancer	chronic	acute
Alimentary Tract (A)		**0.00**	**0.00**
Cardiovascular (C)		**0.00**	**0.00**
Eye (E)		**0.00**	**0.00**
gastrointestinal/liver (G)		**0.00**	**0.00**
Headache/Nausea (HN)		**0.00**	**0.00**
Hematological (H)		**0.00**	**0.00**
Immune System (I)		**0.00**	**0.00**
Kidney (K)		**0.00**	**0.00**
Nervous System (N)		**0.00**	**0.00**
Reproductive/Developmental (RD)		**0.00**	**0.00**
Respiratory (R)		**0.02**	**0.00**
Skin (S)		**0.00**	**0.00**
Total Cancer:	**0.228**		

Notes:
(d) URVs = OEHHA/ARB Consolidated Table, updated May 13, 2015
(e) Chronic RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015
(f) The impacts of acute and chronic non-cancer compounds are organ-specific. Therefore chronic non-cancer and acute prioritization scores are organ-specific. Those facility scores include the total contributions to specific target organs (TO) and are not just totals for each category.
(g) Acute RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015

* chromium 6+ (hexavalent) includes barium chromate, calcium chromate, lead chromate, sodium dichromate or strontium chromate assuming exposure by inhalation
** unit risk value for dioxins and furans is listed for the worst case. If information on individual compounds is known, look up specific risk values in the Consolidated Table of OEHHA/ARB approved risk assessment health values
*** low risk, for use in cases where congeners with more than four chlorines comprise less than one-half percent of total polychlorinated biphenyls
**** high risk, for use in cases where congeners with more than four chlorines do not comprise less than one-half percent of total polychlorinated biphenyls

AB2588 Health Risk Screening/Facility Risk Prioritization

AB2588 requires the prioritization of facilities as either high, intermediate, or low priority to determine if a facility needs to conduct a health risk assessment. Facilities exceeding total facility score of 10 are considered to potentially exceed the MBUAPCD's significance thresholds for human health risk and would be considered "high priority." A more detailed health risk assessment would be required for "high priority" facilities. Toxics Best Control Technology (TBACT) is typically required for facilities identified as "intermediate priority" facilities. "Low priority" facilities are typically not considered to result in a significant impact.

Project: Ridgecrest WWTP-Alternative 2
Source: Emergency Generator
Receptor Distance: 530 m
Release Height: 4 m
Facility Risk Category: Intermediate Priority
Exceeds Thresholds/High Priority?: No

Total Facility Score	Category
TS > 10	High Priority
1 < TS ≤ 10	Intermediate Priority
TS ≤ 1	Low Priority

The spreadsheet below was based on the CAPCOA - Dispersion Adjustment Procedure.

cancer $TS = \{\Sigma (E_C) * (P_C) * (RP) * (D_h)\} * (128)$
acute $TS = \Sigma (E_C) / (P_C) * (RP) * (D_h) * (25)$
chronic $TS = \Sigma (E_C) / (P_C) * (RP) * (D_h) * (2.5)$

			E_c			P_c	Chronic		Acute		D_h	RP	Total Scrores		
			Emissions										Cancer	Chronic	Acute
													0.83	0.06	0.00
													Individual Priority Scores		
Emittent ID No. (CAS)	Substance Name	Degree of Accuracy (lb/yr)	Annual (lb/yr) (a)	Avg Hourly (lb/hr) (b)	Max Hourly (lb/hr) (c)	Unit Risk Value $(ug/m^3)^{-1}$ (d)	Chronic REL (ug/m3) (e)	Target Organ (f)	Acute REL (ug/m3) (g)	Target Organ (f)	Dispersion Adjustment Factors (h)	Receptor Proximity (i)	**Cancer** T_{cancer} (j)	**Chronic** $T_{chronic}$ (k)	**Acute** T_{acute} (l)
9901	diesel exhaust (particulate emissions)	2	9.00E+00	5.00E-02	5.00E-02	3.00E-04	5.00E+00	R	0.00E+00		60	0.04	8.29E-01	6.00E-02	
						0.00E+00	0.00E+00		0.00E+00		60	0.04			
						0.00E+00	0.00E+00		0.00E+00		60	0.04			
						0.00E+00	0.00E+00		0.00E+00		60	0.04			

	Facility Prioritization Scores		
Target Organs (TO)	cancer	chronic	acute
Alimentary Tract (A)		**0.00**	**0.00**
Cardiovascular (C)		**0.00**	**0.00**
Eye (E)		**0.00**	**0.00**
gastrointestinal/liver (G)		**0.00**	**0.00**
Headache/Nausea (HN)		**0.00**	**0.00**
Hematological (H)		**0.00**	**0.00**
Immune System (I)		**0.00**	**0.00**
Kidney (K)		**0.00**	**0.00**
Nervous System (N)		**0.00**	**0.00**
Reproductive/Developmental (RD)		**0.00**	**0.00**
Respiratory (R)		**0.06**	**0.00**
Skin (S)		**0.00**	**0.00**
Total Cancer:	**0.829**		

Notes:
(d) URVs = OEHHA/ARB Consolidated Table, updated May 13, 2015
(e) Chronic RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015
(f) The impacts of acute and chronic non-cancer compounds are organ-specific. Therefore chronic non-cancer and acute prioritization scores are organ-specific. Those facility scores include the total contributions to specific target organs (TO) and are not just totals for each category.
(g) Acute RELs = OEHHA/ARB Consolidated Table, updated May 13, 2015

* chromium 6+ (hexavalent) includes barium chromate, calcium chromate, lead chromate, sodium dichromate or strontium chromate assuming exposure by inhalation
** unit risk value for dioxins and furans is listed for the worst case. If information on individual compounds is known, look up specific risk values in the Consolidated Table of OEHHA/ARB approved risk assessment health values
*** low risk, for use in cases where congeners with more than four chlorines comprise less than one-half percent of total polychlorinated biphenyls
**** high risk, for use in cases where congeners with more than four chlorines do not comprise less than one-half percent of total polychlorinated biphenyls

Appendix C
Biological Evaluation

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

RIDGECREST WASTEWATER TREATMENT PLANT EXPANSION PROJECT
BIOLOGICAL EVALUATION
CITY OF RIDGECREST, KERN AND SAN BERNARDINO COUNTIES, CALIFORNIA

Prepared by

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March 19, 2016 PN 1945-01

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EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted an investigation of the biological resources of the Ridgecrest Wastewater Treatment Plant Expansion Project Alternatives site within the City of Ridgecrest, Kern County, and San Bernardino County, California and evaluated likely impacts to such resources resulting from development of the two project alternatives. On June 8 & 9, 2015, LOA biologist Jeff Gurule surveyed the site for biotic habitats, the plants and animals occurring in those habitats, and significant habitat values that may be protected by state and federal law. At the time of the field survey, the project site consisted of desert scrub, ruderal land, wastewater ponds, agricultural fields, and ephemeral drainage situated at the edge of developed areas associated with the City of Ridgecrest and the China Lake Naval Air Weapons Station. The Indian Wells Valley, in which the project is located, is dominated by desert scrub habitat at the western edge of the Mojave Desert.

Less than significant project impacts are as follows.

Alternative 1 and Alternative 2: Both proposed project alternatives will not impact special status plants known to occur in the region due to the absence of suitable habitat and/or the project site location outside the species' range. Project impacts will also be less than significant for wildlife movement corridors, Waters of the U.S., sensitive or designated critical habitat, special status species absent from or unlikely to occur on the project site, special status species that may only occasionally forage on the project site, and special status species that may breed and forage on the site due to potential loss of habitat. Furthermore, the project will comply with the City of Ridgecrest and San Bernardino County general plan policies pertaining to biological resources.

Alternative 1: This alternative would have no impact on water quality of downstream waters.

Potentially significant project impacts and mitigations are as follows.

Alternative 1 and Alternative 2: Both alternatives may result in impacts to nesting birds protected under the federal Migratory Bird Treaty Act. Birds nesting on the project site have the potential to be killed or disturbed by construction activities. Preconstruction surveys and avoidance, should active nests be found, will reduce impacts to nesting migratory birds to a less than significant level. Although no evidence of desert tortoise, Mohave ground squirrel, burrowing owl, or American badger habitation of the project site was noted at the time of the field survey, these species could conceivably use the site from time to time. Preconstruction surveys and appropriate avoidance and minimization measures stipulated in this document will reduce impacts to these species to a less than significant level. Should the desert tortoise be found on the site during protocol surveys the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFW) must be consulted. If impacts to the species can't be avoided, conditions of a Biological Opinion from the USFWS and an Incidental Take Permit from the CDFW must be implemented. Should the Mohave ground squirrel be found on the site during protocol surveys, the CDFW must be consulted. If impacts to the species can't be avoided, conditions of an Incidental Take Permit from the CDFW must be implemented.

Alternative 2: This alternative has the potential to degrade downstream waters during proposed trenching activities through a small isolated ephemeral drainage that would be considered a water of the state. Standard Best Management Practices must be implemented to reduce impacts to less than significant. Furthermore, it is recommended that the Lahontan Regional Water Quality Control Board and the CDFW be notified prior to project disturbance to this drainage.

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1.0 INTRODUCTION

The technical report that follows describes the biotic resources of two alternatives for the Ridgecrest Wastewater Treatment Plant Expansion Project (hereafter referred to as the "project site(s)" "project alternatives" or "site(s)"), and evaluates possible impacts to those resources that could result from project implementation. Specifically, this report describes the biotic habitats of the project alternative sites, evaluates the suitability of each habitat for special status plant and animal species, identifies potentially significant impacts to sensitive biotic resources resulting from the proposed project and, where appropriate, proposes measures that if implemented would mitigate those impacts to a less than significant level.

1.1 PROJECT LOCATION

The project alternatives are located within the Ridgecrest City Limits, Kern County, with a portion of the project alternatives east of San Bernardino Blvd occurring outside the City Limits and within San Bernardino County. The northern section of the project alternatives area, while within the Ridgecrest City Limits, is located on the China Lake Naval Air Weapons Stations (NAWS) (Figure 1). The entire project alternatives area lies within the *Ridgecrest South* U.S. Geological Survey (USGS) 7.5 minute quadrangle; Sections 1, 2, & 35; and *Ridgecrest North* USGS 7.5 minute quadrangle Sections 14, 23, 26, & 35; Township 26 & 27 South, Range 40 East, Mt. Diablo Base and Meridian (Figure 2).

1.2 PROJECT DESCRIPTION

The project considers two alternatives described in detail, below.

Alternative 1: Alternative 1 would construct and operate a wastewater treatment plant (WWTP) on approximately 7.4 acres adjacent to the existing WWTP at the NAWS Site as illustrated in Figure 3. As is the case with the existing WWTP, the City of Ridgecrest (City) would need to acquire an easement from the U.S. Navy in order to utilize the additional 7.4 acres. Under this Alternative, portions of the existing WWTP would be demolished, with new facilities constructed on the existing NAWS site as well as on the proposed 7.4 acre lease area abutting to the west. If Alternative 1 is selected as the Preferred Alternative, construction and demolition

would need to be coordinated such that the existing WWTP could continue to function and power supply to the existing WWTP is not interrupted. Wastewater from all areas of the City would continue to gravity-flow north to the WWTP, and the existing 20-inch force main would remain in use to pipe effluent south to the City site disposal ponds for eventual land application. To accommodate the increase in effluent to the City site this alternative would require the construction of 90 acres of new treatment ponds at the City site.

Alternative 2: Alternative 2 would construct a wastewater treatment plant on approximately 10 acres adjacent to the existing disposal ponds at the City site (see Figure 4). Currently, all raw wastewater from the City flows by gravity to the WWTP at the NAWS. Under Alternative 2, a new WWTP plant would be constructed on 10 acres at the City site, and the City would be divided into two distinct service areas based on the location and direction of flow of existing trunk sewer lines. The southern service area would be able to flow via gravity to the new City site WWTP. Southern-area flows would continue to meet at the intersection of California Avenue and South Lumill Street. However, at that point a new 24-inch-diameter gravity main would divert the influent directly to the new WWTP instead of allowing it to head north to the NAWS site via the existing 24-/27-inch gravity main. An influent lift station at the western edge of the new WWTP would pump the southern-area influent to the headworks. Flows from the northern service area would continue to be collected by the 24-/27-inch gravity main to flow northward to the NAWS site. At that point, a new lift station would be constructed to pump the arriving wastewater southward to the City site. To connect the new lift station to the City site, Alternative 2 would require the construction of approximately 21,000 feet of raw wastewater force main with a 16-inch diameter. The new force main is expected to run parallel to the existing force main within a new easement acquired from the Department of the Navy. The City is currently examining the optimal location of the new force main relative to the existing one. To account for a variety of potential alignments, this EIR examines a permanent 10-foot public utilities easement to either side of the existing easement along with a 20-foot temporary construction easement for a total corridor width of 80 feet.

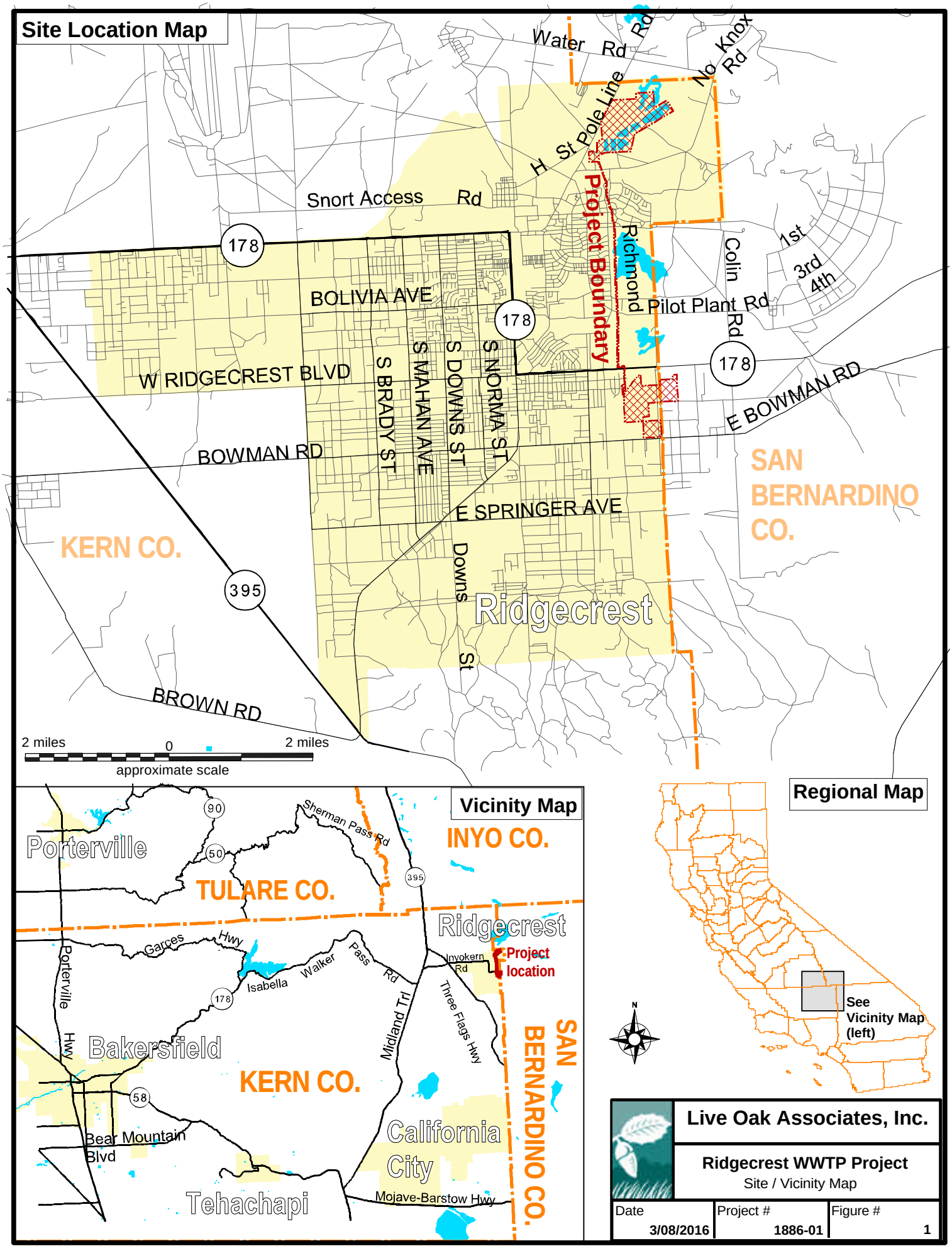
While the existing four-mile-long, 20-inch-diameter effluent force main would remain in place, it would be operated in reverse of its current direction and effluent would be pumped from the City

site to the NAWS site wastewater disposal ponds. This would require installation of a new pump station and an additional 90 acres of treatment ponds at the City site.

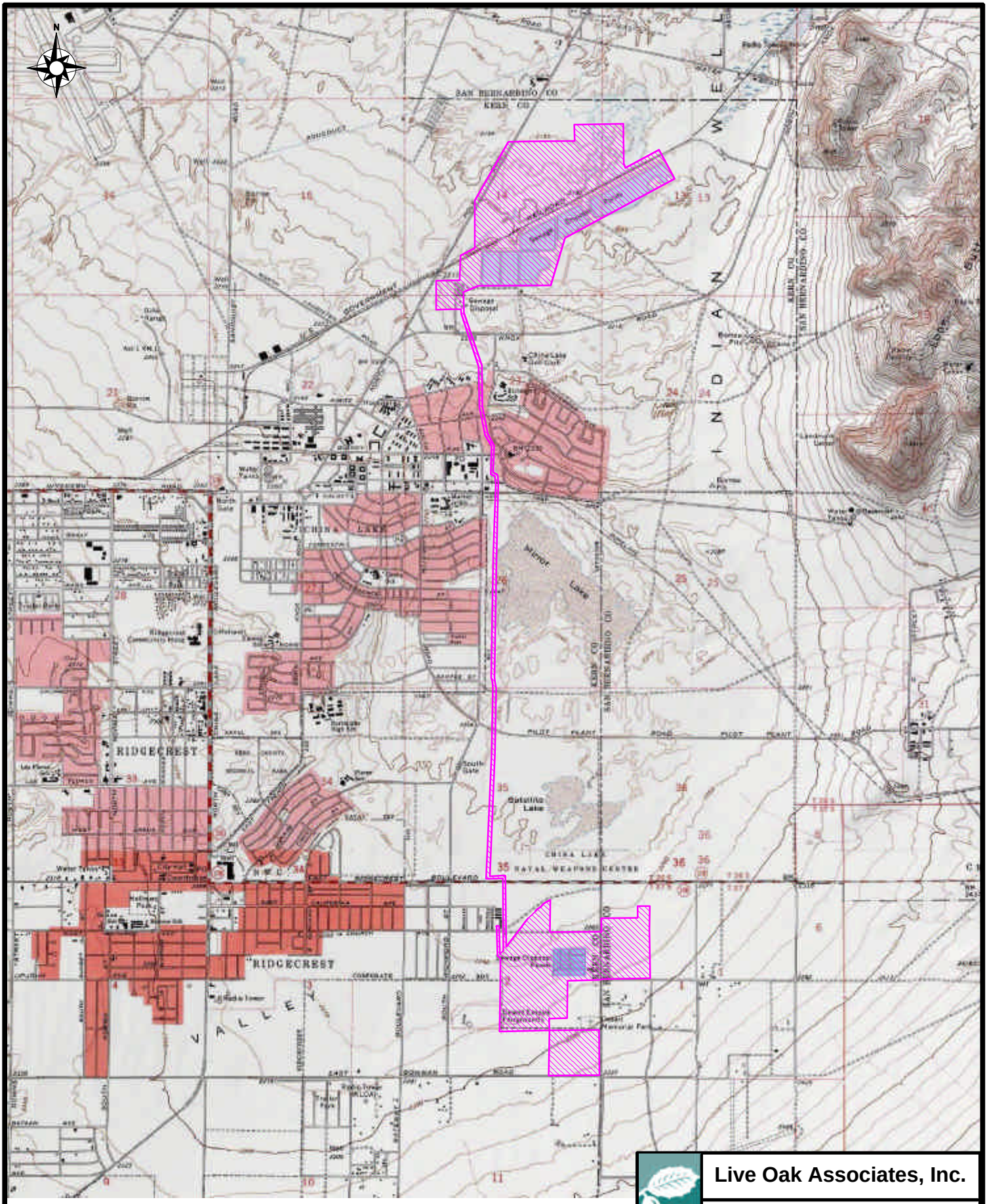
In summation, Alternatives 1 and 2 occupy largely the same physical sites and will contain the same type, size, and intensity of treatment facilities. The primary differences between these two Alternatives relate to the physical location of the treatment plant, the presence or absence of a new raw wastewater lift station at the NAWS site, construction of a small segment of 24-inch sewer main to the City site, and a force main from the new lift station to the City site. Under Alternative 1, the wastewater treatment facility would be constructed on approximately 7.4 acres at the NAWS site, adjacent and to the west of the existing wastewater treatment plant. Under Alternative 2, the facility would be constructed on approximately 10 acres at the City site, adjacent and to the southwest of the existing wastewater ponds. As noted above, both of the Project Alternatives require the continued operation and potential upgrades to the existing four-mile underground effluent pipeline, continued operation of the wastewater disposal ponds at the NAWS site and City site, and the construction of an additional 90 acres of ponds at the City site. If the City implements the disinfected tertiary recycled water component of the project, a recycled purple water pipe distribution system will be constructed from the selected WWTP site to the China Lake NAWS Site, the NAWS golf course, schools, parks, and landscaped areas. The pipeline is expected to be constructed within the existing rights-of-way of Richmond Road, the Drummond Road alignment south of Burroughs High School, French Avenue past Leroy Johnson Park, Balsam Street to Ridgecrest Blvd, then on South Warner Street to Freedom Park. All pipelines for the distribution of the recycled water will be analyzed under a subsequent CEQA document. This CEQA document analyzes only the impacts of the tertiary treatment.

Figures 3 and 4 identify the conceptual wastewater treatment facility ponds layout that is common to both Project Alternatives. It should be noted that these plans are conceptual and not all components of the project may be consistent in the final plan. However, the overall footprint and implications of the proposed project will be equivalent.

Following construction of either Alternative 1 or Alternative 2, all existing wastewater treatment ponds would continue to be maintained and operated as before project construction.



Live Oak Associates, Inc.	
Ridgecrest WWTP Project Site / Vicinity Map	
Date: 3/08/2016	Project #: 1886-01
Figure #: 1	

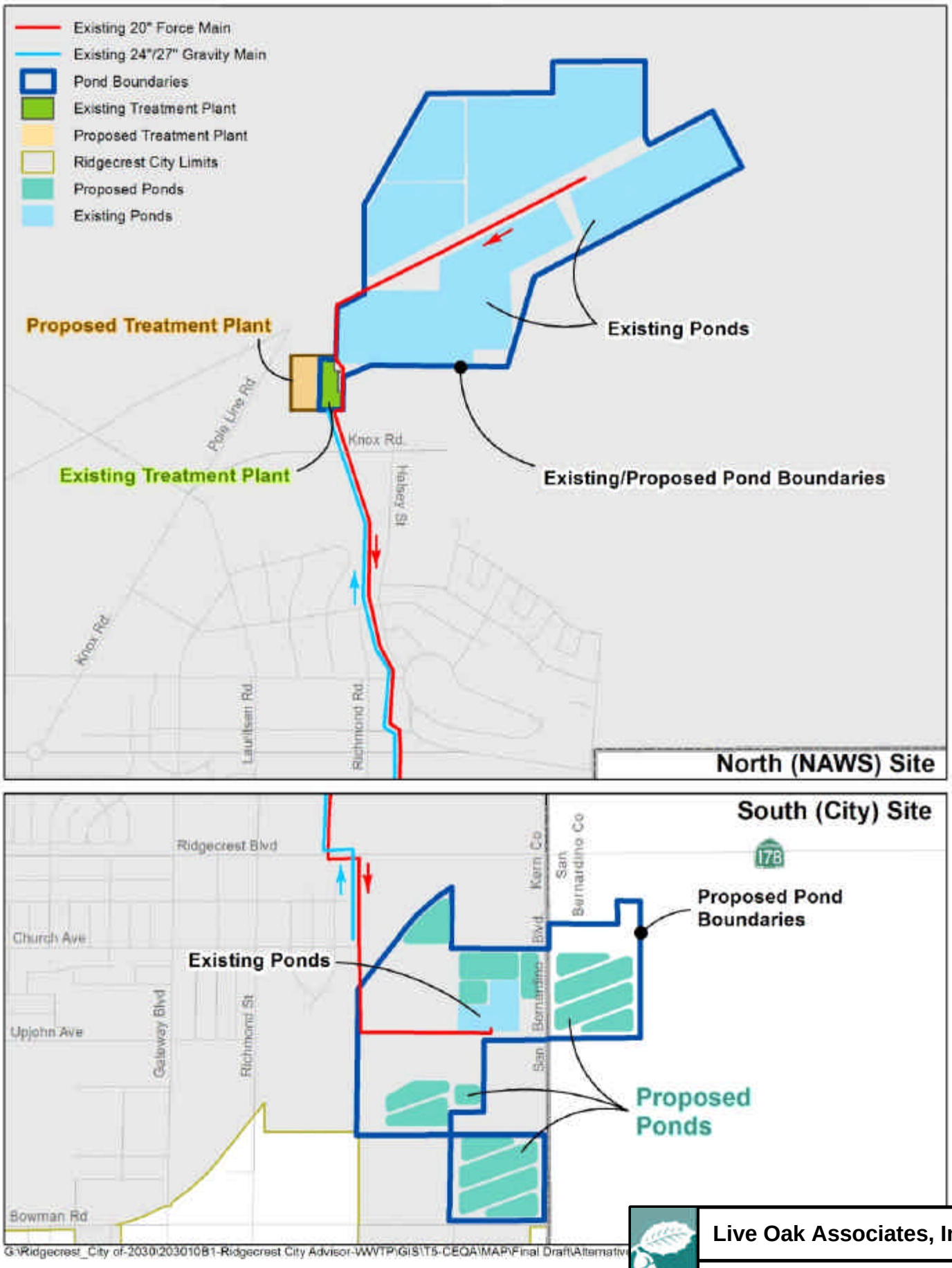


From USGS
Ridgecrest North 7.5' Quadrangle 1973
Ridgecrest South 7.5' Quadrangle 1973
Lone Butte 7.5' Quadrangle 1973
Spangler Hills West 7.5' Quadrangle 1973

Live Oak Associates, Inc.

Ridgecrest WWTP Project
U.S.G.S. Quadrangle

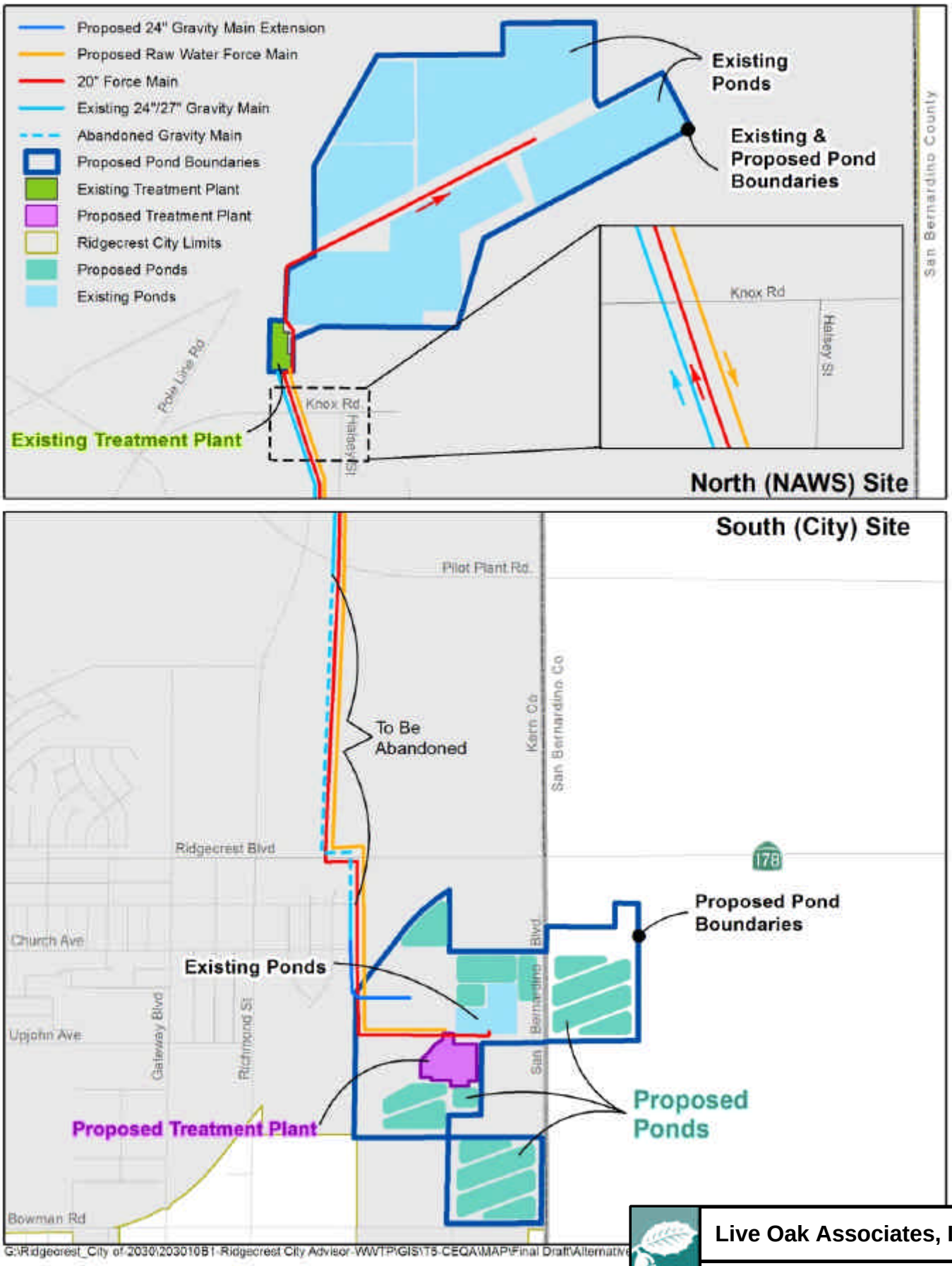
Date	Project #	Figure #
3/08/2016	**1886-01**	**2**



Source:
City of Ridgecrest T5 CEQA Final Draft Alternatives

	Live Oak Associates, Inc.
	Ridgecrest WWTP Project Alternative 1 Site Plan

Date	Project #	Figure #
3/08/2016	1886-01	3



Source:
City of Ridgecrest T5 CEQA Final Draft Alternatives

Live Oak Associates, Inc.	
Ridgecrest WWTP Project Alternative 2 Site Plan	
Date **3/08/2016**	Project # **1886-01**
Figure # **4**	

1.3 REPORT OBJECTIVES

The development of lands, such as the WWTP expansion alternatives proposed by the City of Ridgecrest, may damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of the City of Ridgecrest and San Bernardino County. This report addresses issues related to: 1) Sensitive biotic resources occurring on the project site; 2) The federal, state, and local laws regulating such resources; and 3) Mitigation measures that may be required to reduce the magnitude of anticipated impacts and/or comply with permit requirements of state and federal resource agencies. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing biological resources.
- Make reasonable inferences about the biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range.
- Summarize all state and federal natural resource protection laws that may be relevant to possible future site development.
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of CEQA or any state or federal laws.
- Identify avoidance and mitigation measures that would reduce impacts to a less-than-significant level (as identified by CEQA) and are generally consistent with recommendations of the resource agencies for affected biological resources.

1.4 STUDY METHODOLOGY

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2015), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2015), and (3) manuals, reports, and references related to plants and animals of the Mohave Desert region. A reconnaissance-level field survey of the project site was conducted on June 8 & 9, 2015 by Live Oak Associates, Inc. (LOA) biologist Jeff Gurule. The survey

consisted of walking the project such that all represented habitats could be thoroughly inspected. During this time principal land uses of the site were identified and the constituent plants and animals were noted on a field datasheet. The field survey conducted for this study was sufficient to assess the significance of possible biological impacts associated with the development plans for the project site.

2.0 EXISTING CONDITIONS

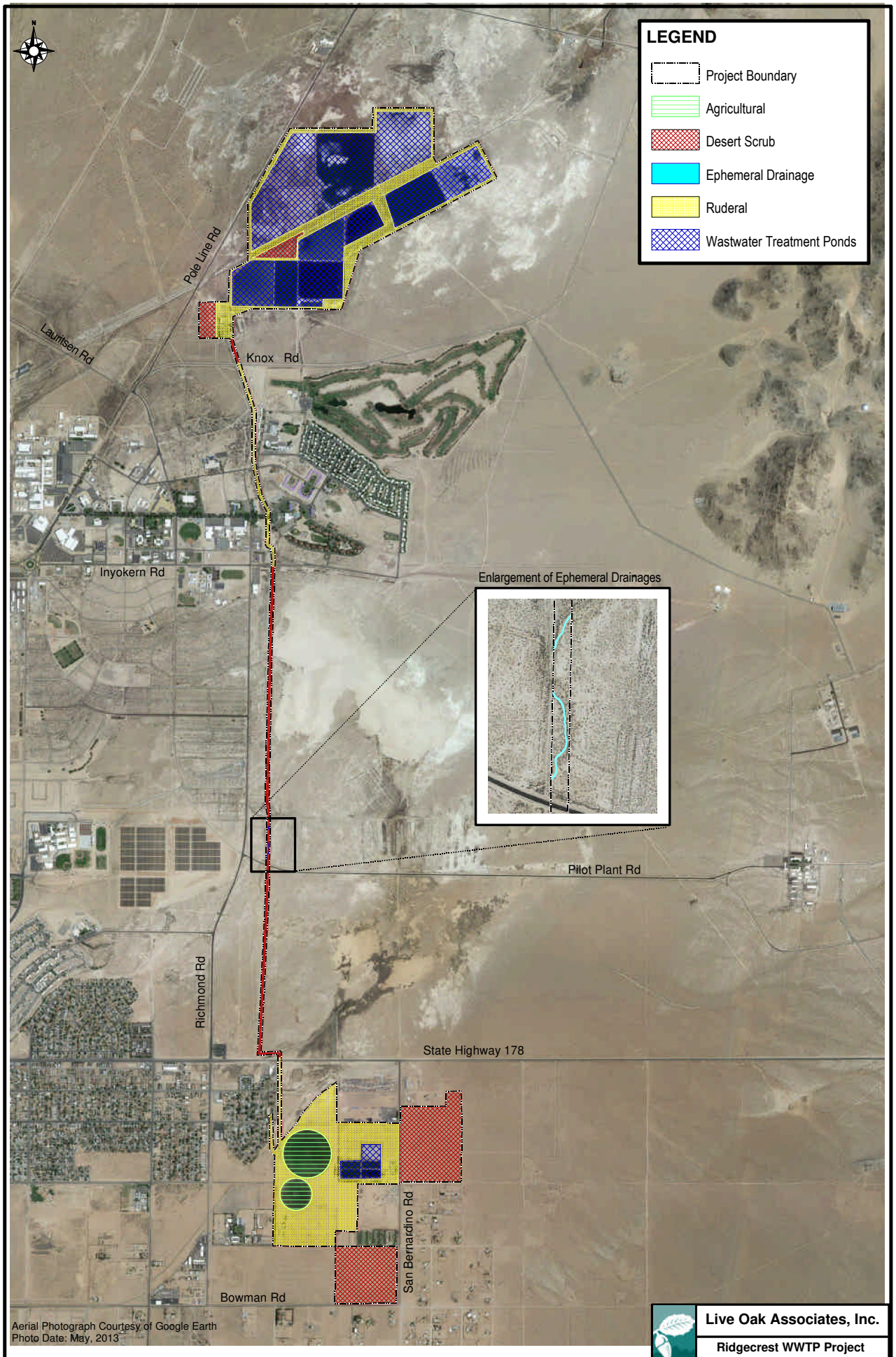
The project site is located within the Indian Wells Valley region of the western Mohave Desert. The area is loosely bound by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south. At the time of the survey the project site contained desert scrub, ruderal land, wastewater ponds, agricultural fields, and ephemeral drainage (Figure 5).

The topography of the project site is relatively flat with elevations ranging from approximately 2,213 – 2,327 feet National Geodetic Vertical Datum (NGVD). A small ephemeral drainage crosses the project site and drains into the Mirror Lake basin. The Mirror Lake basin is a closed basin with no hydrologic outlet. Mirror Lake is rarely inundated.

In general, soils of the project site are mostly sandy. Surface soils are deficient in nitrogen and relatively high in salt accumulation. Some soils of the site, primarily in agricultural and ruderal areas have been disturbed or altered through farming, grading, the construction of WWTP infrastructure, and other development. As such, native soil characteristics within these areas have been altered or destroyed.

The project site is located in a region of California having a desert climate. Summers are dry and hot with daytime temperatures commonly exceeding 100^{o} Fahrenheit. Winters are mild to cold with occasional freezing nighttime temperatures. Annual precipitation in the general vicinity of the project site is low with a mean annual rainfall of approximately 3.7 inches, most of which falls between the months of December and March. Virtually all precipitation falls in the form of rain with stormwater infiltrating onsite soils.

The surrounding lands consist of desert scrub, Mirror Lake dry lake bed, and developed lands associated with the City of Ridgecrest and the NAWS.



Live Oak Associates, Inc.

Ridgecrest WWTP Project

U.S.G.S. Quadrangle

Date	Project #	Figure #
3/08/2016	1886-01	2

2.1 BIOTIC HABITATS/LAND USES

Five habitat/land use types were observed on the project site during the September 2014 biological field survey; desert scrub, ruderal land, wastewater ponds, agricultural fields, and ephemeral drainage. A list of the vascular plant species observed within the project site and the terrestrial vertebrates using, or potentially using, the site are provided in Appendices A and B, respectively. Photos of the project site are presented in Appendix C.

2.1.1 Desert Scrub

Desert scrub occurs throughout large areas of the western Mojave Desert. The dominant shrub species within desert scrub habitats of the sites is allscale (*Atriplex polycarpa*), which are generally widely spaced. Other shrub species observed in this habitat were creosote bush (*Larrea tridentata*), desert senna (*Senna armata*), burrow bush (*Ambrosia dumosa*), and Mojave saltbush (*Atriplex spinifera*). One cactus species, Wiggins' cholla (*Cylindropuntia echinocarpa*), was occasionally observed in this habitat. Annual grasses and forbs formed a relatively sparse cover between and beneath the shrubs, which included schismus (*Schismus barbatus*), red brome (*Bromus madritensis* ssp. *rubens*), narrow leaved cryptantha (*Cryptantha angustifolia*), fireweed (*Ansinckia sp.*), and desert pepperweed (*Lepidium fremontii*), among others. Dried remains of other annual plant species were also observed on the site, but were unidentifiable due to the timing of the field survey.

The desert scrub observed on the site provides habitat for many native terrestrial vertebrate species. The degree to which this habitat is used by these species has likely been adversely affected by human activities on and adjacent to these areas. Relatively few animals were observed on the site during the reconnaissance level survey, but evidence of small mammals in the form of burrows was observed throughout the study area. Reptiles likely to occur in this habitat include the side-blotched lizards (*Uta stansburiana*), southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), Great Basin whiptails (*Cnemidophorus tigris tigris*), red racer (*Coluber flagellum piceus*), California kingsnakes (*Lampropeltis californiae*), and Northern Mojave rattlesnakes (Crotalus scutulatus scutulatus), among others. Birds common to desert scrub include horned larks (*Eremophila alpestris*), common ravens (*Corvus corax*), greater roadrunners (*Geococcyx californianus*), Brewer's sparrows (*Spizella breweri*), black-throated

sparrows (*Amphispiza bilineata*), and sage sparrows (*Amphispiza belli*), among others. Mammal species potentially occurring within this habitat could include coyotes (*Canis latrans*), kit fox (*Vulpes macrotis*), black-tailed jackrabbits (*Lepus californicus*), Merriam's kangaroo rats (*Dipodomys merriami*), white-tailed antelope squirrels (*Ammospermophilus leucurus*), Mojave ground squirrel (*Spermophilus tereticaudus*) and southern grasshopper mice (*Onychomys torridus*), to name a few.

2.1.2 Ruderal

Ruderal land is characterized by intensive human disturbance or use that has significantly altered soils, topography, and/or the biotic community of a particular area. Within the project site ruderal lands consisted of heavily disturbed and developed lands associated with the WWTPs and the City owned lands used for recreation. Ruderal areas contained a variety of mostly non-native vegetation, which included ornamental trees and shrubs such as Afghan pine (*Pinus eldarica*), red gum (*Eucalyptus camaldulensis*), white mulberry (*Morus alba*), and oleander (*Nerium oleander*); non-native weedy vegetation such as Bermuda grass (*Cynodon dactylon*), cheeseweed (*Malva sp.*), redstem filaree (*erodium cicutarium*), schismus, and mustard (*Sisymbrium sp.*); and vestigial native desert vegetation such as allscale, creosote bush, narrow leaved cryptantha, and fireweed.

A number of wildlife species adapted to human disturbance are expected to occur in ruderal areas of the site. For example, amphibians such as Pacific chorus frogs (*Pseudacris regilla*) and western toads (*Anaxyrus boreas*) might disperse through these areas during the winter and spring, and reptiles such as the western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), gopher snake (*Pituophis melanoleucus*), and common kingsnake (*Lampropeltis getulus*) could forage in these areas. The two aforementioned trees could provide potential nesting habitat for a few avian species such as the house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), and Eurasian collared dove (*Streptopelia decaocto*); all were observed during the field survey.

Common resident species likely to forage within this habitat include mourning doves (*Zenaida macroura*) and American crows (*Corvus brachyrhynchos*), as well as mixed flocks of Brewer's blackbirds (*Euphagus cyanocephalus*), brown-headed cowbirds (*Molothrus ater*), and European

starlings (*Sturmus vulgaris*). The western kingbird (*Tyrannus verticalis*) is a common summer migrant to open lands of the region. Winter migrants common to the area include white-crowned sparrows (*Zonotrichia leucorphrys*), savannah sparrows (*Passerella sandwichensis*), and American pipits (*Anthus rubescens*).

A few mammal species may also occur within ruderal lands of the site. California ground squirrel (*Otospermophilus beecheyi*) burrows and Botta's pocket gopher (*Thomomys bottae*) burrow mounds were observed in these areas. Other small mammals expected in these areas include the deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), black-tailed hare (*Lepus californicus*), and Audubon cottontail (*Sylvilagus audubonii*).

Raptors such as red-tailed hawks (*Buteo jamaicensis*), Swainson's hawks (*Buteo swainsoni*), white-tailed kites (*Elanus leucurus*), and American kestrels (*Falco sparverius*) may also forage over the site. Mammalian predators that may occasionally occur in this habitat include coyotes and kit fox.

2.1.3 Agricultural Field

The project site contains two circular alfalfa (*Medicago sativa*) fields that are irrigated with treated wastewater. Due to regular agricultural practices within these fields they provide little habitat for native wildlife. Nonetheless, some native wildlife species undoubtedly utilize the field from time to time. Wildlife species potentially utilizing the agricultural field would be nearly the same as those occurring in the adjacent ruderal habitat, but less frequently and in lower numbers due to regular irrigation and cultivation activity.

2.1.4 Wastewater Ponds

A number of waste water ponds are located at the City site and the NAWS site. The engineered ponds are earthen and appear to experience minimal vegetation management. Many of the ponds were inundated and supported vegetation along the waterline. Plant species observed included broadleaved cattail (*Typha latifolia*), mule fat (*Baccharis salicifolia*), broad leaved pepper grass (*Lepidium latifolium*), sturdy bullrush (*Bolboschoenus robustus*), tamarisk (*Tamarix sp.*), rabbit's-foot grass (*Polypogon monspeliensis*), and curly dock (*Rumex crispus*). Dry ponds contained much of the same vegetation and biological function as the surrounding ruderal lands.

The ponds offer suitable habitat primarily for amphibians and water fowl. Bullfrogs may inhabit the ponds as well as other amphibian species such as Pacific treefrogs. Reptile use of this area, however, is expected to be quite low due to the aquatic environment and compacted banks and roads surrounding the ponds.

The ponds were used by many species of waterfowl and shorebirds at the time of the field survey. The large ponds at the NAWS site supported much more avian diversity than the small ponds at the City site. Species observed included mallards (*Anas platyrhynchos*), ruddy ducks (*Oxyura jamaicensis*), Virginia rail (*Rallus limicola*), redhead (*Aythya americana*), American avocet (*Recurvirostra americana*), and American coots *(Fulica americana*), among others. Other birds observed in the pond areas include the red-winged blackbird (*Agelaius phoeniceus*), California quail (*Callipepla californica*) and lesser nighthawk (*Chordeiles acutipennis*).

Mammal species may occasionally frequent the ponds for drinking water or feeding. Mammal species that may occur around the margins of the ponds include raccoons (*Procyon lotor*) and coyotes (observed). Various bat species likely forage over the ponds during crepuscular hours.

2.1.5 Ephemeral Drainage

A small ephemeral drainage occurs in the Alternative 1 project area. This drainage is expected to carry ephemeral flows after only very heavy rain events. Vegetation was sparse in this habitat and consisted primarily of widely scattered upland herbaceous vegetation such as schismus, red brome, and narrow leaved cryptantha.

The desert wash on the site provides essentially the same habitat values as the surrounding desert scrub habitat and the same animal species expected in the desert scrub would be expected to utilize the desert wash.

2.2 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have

provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2015). Collectively, these plants and animals are referred to as "special status species."

Recorded observations of special status species within a 3.1 mile radius of the project alternatives are illustrated in Figure 6. Special status species, and their potential to occur on the project site, are listed in Table 1. Sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988-1990), *California Natural Diversity Data Base* (CDFW 2016), *eBird Species Occurrence Range Map* (eBird 2016), and *The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2016). This information was used to evaluate the potential for special status plant and animal species to occur onsite.

A search of published accounts for all of the relevant special status plant and animal species was conducted for 10 USGS 7.5-minute quadrangles in which the project alternatives occur and are within the vicinity of the project alternatives. The CNDDB Rarefind 5 (CDFW 2016) was queried for the following 10 quadrangles; Burro Canyon, Inyokern, Inyokern SE, Lone Butte, Pearsonville, Ridgecrest North, Ridgecrest South, Spangler Hills West, White Hills, and Freeman Junction. In addition, the USFWS on-line database was queried for occurrences of federally listed species and critical habitat within the project vicinity (http://ecos.fws.gov/ipac/).

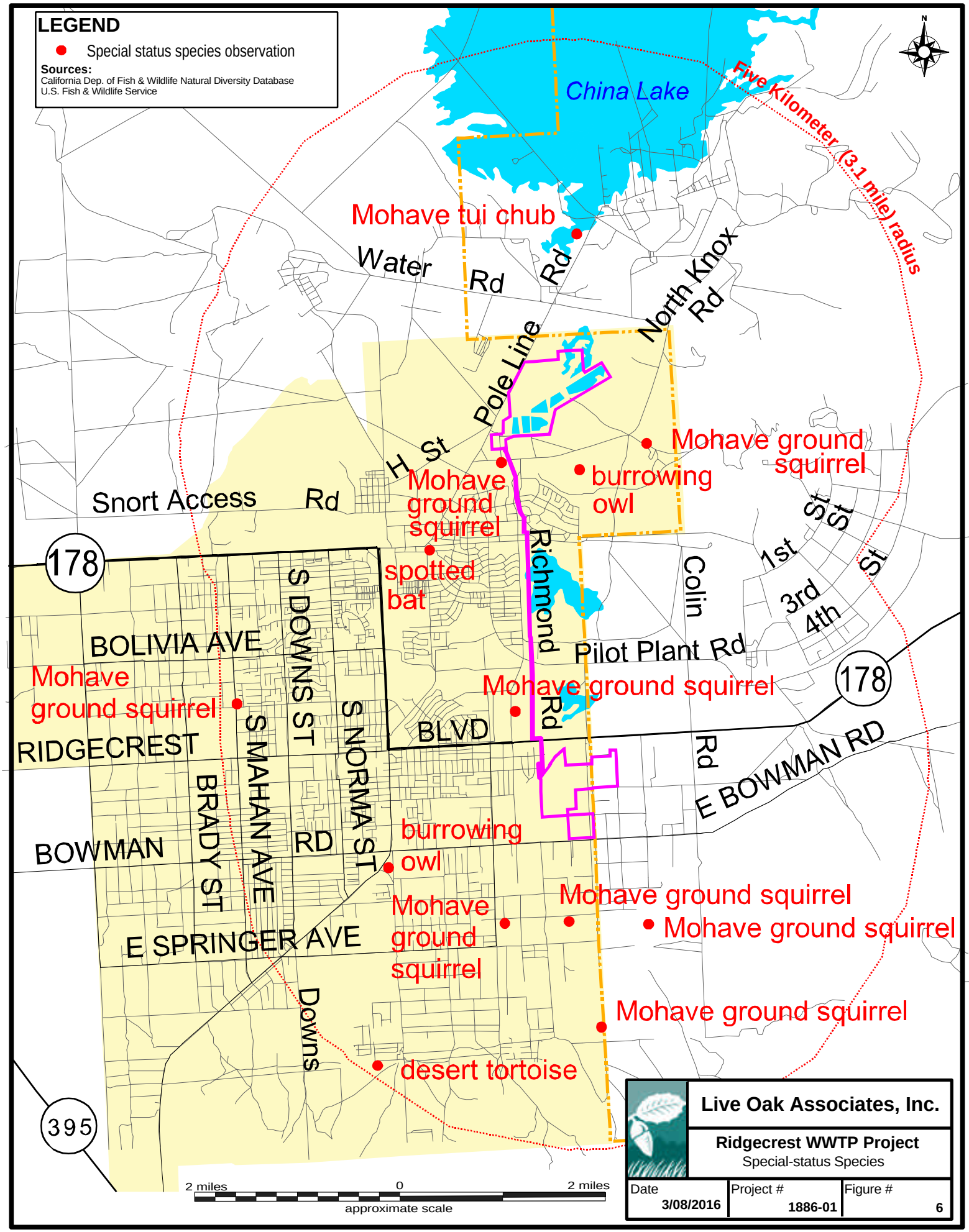

LEGEND
Special status species observation
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
China Lake
Five kilometer (3.1 mile) radius
Mohave tui chub
Water Rd
North Knox Rd
Pole Line
H St
Mohave ground squirrel
burrowing owl
Mohave ground squirrel
Snort Access Rd
spotted bat
Richmond Rd
Colin
1st St
3rd St
4th St
178
BOLIVIA AVE
S DOWNS ST
S NORMA ST
Mohave ground squirrel
RIDGECREST BLVD
Pilot Plant Rd
Mohave ground squirrel
178
E BOWMAN RD
S MAHAN AVE
BRADY ST
BOWMAN RD
burrowing owl
Mohave ground squirrel
Mohave ground squirrel
Mohave ground squirrel
E SPRINGER AVE
Mohave ground squirrel
Downs
desert tortoise
395
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Ridgecrest WWTP Project
Special-status Species
Date 3/08/2016
Project # 1886-01
Figure # 6

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2016 and CNPS 2016)

Special status plants listed as rare, threatened, or endangered by CNPS

Species	Status	Habitat	*Occurrence on Alternative 1 and Alternative 2 Project Sites
Clokey's Cryptantha (*Cryptantha clokeyi*)	CNPS 1B.2	Mojavean desert scrub. Found in sandy or gravelly soils in mountainous and hilly areas. Blooms in April.	**Unlikely.** Mountainous or hilly terrain required by this species is absent from the project sites.
Pale Yellow Layia (*Layia heterotricha*)	CNPS 1B.1	Occurs in alkaline or clay soils of pinyon juniper woodland, foothill woodland, and grassland between 980 – 5,250 ft. Blooms March – June.	**Absent.** Habitats and soils required by this species are absent from the project sites.
Charlottes phacelia (*Phacelia nashiana*)	CNPS 1B.2	Occurs in granitic soils within Joshua tree woodland, Mojavean desert scrub, pinyon juniper woodland. Prefers sandy or rocky areas in mountainous and hilly areas between 1,970-7,200 feet in elevation. Blooms March – June.	**Absent.** Mountainous or hilly terrain required by this species is absent from the project sites.

ANIMALS (adapted from CDFW 2016 and USFWS 2016)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Mohave tui chub (*Siphateles bicolor mohavensis*)	FE, CE	Endemic to the Mojave river basin, adapted to alkaline, mineralized waters. Requires deep pools, ponds, or slough-like areas with vegetation for spawning.	**Absent.** Suitable habitat is absent. A large population occurs approximately 2.0 miles northeast of the project site in two large seeps and associated canals.
Desert Tortoise (*Gopherus agassizii*)	FT, CT	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**Possible.** This species may occur in desert scrub areas of the project sites.
Inyo California Towhee (*Melozone crissalis eremophilus*)	FT, CE	Inhabits the west and east slope of the southern Argus Range from 2,680 to 6,200 ft. Breeds in small patches of dense thickets of willows and desert olive along stream sides, springs and seeps.	**Absent.** The project sites are outside the known range of this species.
California condor (*Gymnogyps californianus*)	FE, CE, CFP	Vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Nests in deep canyons that contain clefts in rocky walls.	**Absent.** Suitable habitat is absent from the project sites. Furthermore the site is outside the current range of the species.
Mohave ground squirrel (*Xerospermophilus mohavensis*)	CT	Open desert scrub, alkali scrub & Joshua tree woodland. Restricted to Mojave desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover and nesting.	**Possible.** Desert scrub areas of the project sites provide potential habitat for this species. Historic observations of this species are documented adjacent to the project sites.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS – cont'd.

State Species of Special Concern

Species	Status	Habitat	*Occurrence on Alternative 1 Project Site
Townsend's Big Eared Bat (*Corynorhinus townsendii*)	CCT	Found throughout California. Roosts most frequently in caves and cave-like structures, but has also been reported to utilize bridges, buildings, rock crevices, and hollow trees.	**Possible.** This species could conceivably forage over the sites. Suitable roosting habitat is absent within proposed development areas.
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**Possible.** Burrows of suitable size for burrowing owl occupation were not observed on the project site during LOA's reconnaissance survey. However, this species has the potential to occur in burrows not observed on the sites, or to move onto the sites at some point in the future.
Long-eared Owl (*Asio otus*)	CSC	Nests and roosts in riparian woodlands and forests. Forages in adjacent open lands.	**Possible.** The project sites are located outside this species breeding range. Potential roosting habitat occurs within stands of ornamental trees within the project sites and adjacent open lands provide potential foraging habitat.
Le Conte's thrasher (*Toxostoma lecontei*)	CSC	Desert resident primarily found in open desert washes, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Nests in dense spiny shrubs or branched cactus.	**Possible.** Potential breeding and foraging habitat occurs in desert scrub habitats of the project sites.
Spotted Bat (*Euderma maculatum*)	CSC	Frequents semi-arid to arid habitats from low desert habitats to high elevation conifer forests. Prominent rock features used for roosting.	**Possible.** This species may forage over the sites; roosting habitat is absent.
Pallid Bat (*Antrozous pallidus*)	CSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	**Possible.** This species may forage over the sites; suitable roosting habitat is absent within proposed development areas.
American Badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Absent.** Although no badger burrows or digs were observed during the LOA field survey, suitable habitat occurs within desert scrub habitats of the sites.
Desert Bighorn Sheep (*Ovis canadensis nelsoni*)	FP	Found in the dry, steep, rocky desert mountains of southeastern California. Prefers open terrain.	**Absent.** Suitable habitat in the form of mountainous terrain is absent from the project sites.

***Explanation of Occurrence Designations and Status Codes**

Present: Species observed on the sites at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the sites, but it could occur there from time to time.
Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Fully Protected
		CSC	California Species of Special Concern

CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

2.3 ENDANGERED, THREATENED, OR SPECIAL STATUS PLANT AND ANIMAL SPECIES MERITING FURTHER DISCUSSION

2.3.1 Desert Tortoise (*Gopherus agassizii*). Federal Listing Status: Threatened; State Listing Status: Threatened.

The most significant threats to the desert tortoise include urbanization, disease, habitat destruction and fragmentation, illegal collection and vandalism by humans, and habitat conversion from invasive plant species. Predation of young tortoises by ravens (often prolific in and near urban areas) is significant in some areas. Free ranging domestic dogs can also prey upon desert tortoise near urban areas. Desert tortoise populations in some areas have declined by as much as 90% since the 1980s.

Desert tortoises occur in a wide variety of habitats in arid and semiarid regions. They require friable soil for burrow and nest construction. Highest densities are achieved in creosote bush communities with extensive annual wildflower blooms, such as occur in the western Mojave. However, tortoises can be found in areas of extensive lava formations, alkali flats and most other desert habitats. Tortoises are herbivorous, eating annual forbs and grasses; many species are taken, but forbs are preferred over grasses and green vegetation is preferred over dry. Desert tortoises have been observed eating carrion and feces as well as excavating and eating calcium carbonate mineral deposits. This species normally excavates a burrow under bushes, overhanging soil or rock formations, or digs into the soil in the open. Burrows are most extensive in the northern part of the range where winter temperatures are coldest. On occasion, a tortoise will take cover under a bush or any natural shelter. The burrows are often crucial to survival, especially in hot weather when the direct rays of the sun can kill a tortoise in an hour or less.

Tortoises may be active at any time of year, but most activity takes place between March and June, and to a lesser extent in late summer in areas with summer rains (eastern Mojave). In early spring, tortoises may be active all day but by late spring, activity is reduced to less than an hour in early morning, 1 out of 4 days. Copulation begins shortly after the tortoises become active in late March or early April. Eggs are laid in early summer (late May to July). Clutches average 5 (range 2-9) eggs and take 3-4 months to hatch. Nests are often constructed at the entrance to burrows. Failure of rainfall and consequent scarcity of annual plants may result in reproductive failure (Zeiner et. al 1988-1990).

Potential to occur onsite. The project alternative sites occur at the northern edge of the desert tortoises range. There is one documented desert tortoise occurrence within three miles of both project alternatives (CDFW 2016). Desert scrub habitats on the two project alternative sites do not provide optimal desert tortoise habitat due to the low density of creosote bushes. The presence of ravens and domestic dogs associated with the urban environment of the City of Ridgecrest further diminish the suitability of habitat for desert tortoise on the project site, as these species are known to prey upon tortoises. However, it is possible that a desert tortoise may occur within desert scrub habitat of the project site. No evidence of desert tortoise was observed during LOA's site survey in June, 2015.

2.3.2 Mohave Ground Squirrel (*Xerospermophilus mohavensis*). State Listing Status: Threatened.

The Mohave ground squirrel is restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties from 1800-5000 feet in elevation. This species is rare throughout its range. Populations in southwestern San Bernardino County appear to be extirpated. Optimal habitats are open desert scrub, alkali desert scrub, and Joshua tree. Prefers sandy to gravelly soils; avoids rocky areas. Populations are reduced by urban development, off-road vehicle use, and agriculture.

Forages on the ground or in shrubs and Joshua trees where it eats a wide variety of green vegetation, seeds, and fruits. Uses burrows at the base of shrubs for cover. Nests are built in the burrow system, which may be as long as 6 m (20 ft), and as deep as 1 m (3.3 ft). This diurnal ground squirrel is active above ground in the spring and early summer. Emergence dates vary

from March to June, depending on elevation. Squirrels begin aestivation in July or August. Stored body fat is the principal source of energy for aestivation, although food is stored, and captive individuals are known to eat during intermittent periods of wakefulness (Zeiner et. al 1988-1990).

Potential to occur onsite. There are eight documented occurrences of Mohave ground squirrels within three miles of both project alternatives (CDFW 2016). Suitable Mohave ground squirrel habitat occurs within desert scrub habitats of both project alternatives. No evidence of this species was observed during LOA's site survey in June, 2015.

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, wetlands, and in some cases irrigation canals. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the CDFW, and the Regional Water Quality Control Boards (RWQCB). See Section 3.2.5 of this report for additional information.

At the time of the LOA field survey, a small ephemeral drainage was identified within the development footprint of Project Alternative 1. Water contributing to this drainage originates from nearby desert uplands. The drainage terminates in the Mirror Lake Basin. This basin is isolated with no hydrologic outlet and rarely becomes inundated. The onsite drainage is expected to carry flows only during very heavy rain events. This drainage would not meet the criteria of jurisdiction set forth by the USACE due to its isolation from known or potential waters of the U.S. However, the drainage would be considered a water of the State by the Lahonton RWQCB. The CDFW may also claim jurisdiction over this ephemeral drainage, in which a Stream Alteration Agreement would be issued after their review of a completed notification form.

2.5 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area(s) that contains features essential for

the conservation and recovery of a threatened or endangered species. Critical habitat may require special management and protection.

The two project alternatives are not located within designated critical habitat for any federally listed species.

2.6 NATURAL COMMUNITIES OF SPECIAL CONCERN

Natural communities of special concern are those that are of limited distribution, distinguished by significant biological diversity, home to special status species, etc. CDFW is responsible for the classification and mapping of all natural communities in California. Natural communities are assigned state and global ranks according to their degree of imperilment. Any natural community with a state rank of 3 or lower (on a 1-5 scale) is considered of special concern.

Natural Community of Special Concern are absent from the two project alternatives.

2.7 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

Terrestrial vertebrates occurring on the project alternative sites, whether they are resident species, migrants, or species using the site solely for foraging, move regularly through it. However, regular and predictable movements during migration and dispersal would not occur on the project sites. Typically, the types of movements made by terrestrial vertebrates on the project sites would be home range movements unique to each species and lacking geographic predictability.

3.0 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

Approval of general plans, area plans, and specific projects is subject to the provisions of CEQA. The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are carried out. CEQA is concerned with the significance of a proposed project's impacts. For example, a proposed development project may require the removal of some or all of a site's existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on the site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed.

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Specific project impacts to biological resources may be considered "significant" if they 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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make "mandatory findings of significance" if the project has the potential to:

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

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 General Plan Policies of the City of Ridgecrest and County of San Bernardino

The City of Ridgecrest General Plan (2030) and 2007 San Bernardino County General Plan (Amended 2014) provides the City and County direction in project planning and approval with respect to transportation, housing, energy, noise, safety, land use, open space, conservation, etc. These plans are implemented via a number of goals and corresponding policies. Goals and policies relevant to the current project are derived primarily from the Open Space and Conservation Elements of these two planning documents. These goals and policies are presented in Appendix D.

3.2.2 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the CDFW and the USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or

kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.3 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.4 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.2.5 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- All interstate waters including interstate wetlands.

- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.

- All impoundments of waters otherwise defined as waters of the United States under the definition.

- Tributaries of waters identified in the bulleted items above.

As determined by the United States Supreme Court in its 2001 *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (SWANCC) decision, channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. Similarly, in its 2006 consolidated *Carabell/Rapanos* decision, the U.S. Supreme Court ruled that a significant nexus between a wetland and other navigable waters must exist for the wetland itself to be considered a navigable and therefore jurisdictional water.

The USACE regulates the filling or grading of jurisdictional waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the RWQCB issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards.

The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Report of Waste Discharge with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these waters are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

3.3 ALTERNATIVE 1 POTENTIALLY SIGNIFICANT PROJECT IMPACTS AND MITIGATIONS

The project considered in this evaluation of impacts to biological resources is the development of wastewater treatment facilities on approximately7.4 acres of relatively undisturbed desert scrub lands west of the existing treatment facility at the NAWS site and the construction of 90 acres of treatment ponds at the City site. Additionally, some existing waste treatment facilities will be demolished. This action will result in permanent disturbance to approximately 80 acres of desert scrub habitat and approximately 50 acres of ruderal habitat at the City site and approximately 7.4 acres of desert scrub habitat at the NAWS site.

3.3.1 Project Related Mortality or Disturbance to Le Conte's Thrasher and Other Nesting Migratory Birds

Potential Impacts. The project site has the potential to be used for nesting by the Le Conte's thrasher and a number of other avian species protected under the federal Migratory Bird Treaty Act and related state laws. If any birds were to nest on the project site prior to construction, project-related activities could result in the abandonment of active nests or direct mortality to birds. Such an activity would constitute a violation of state and federal laws (see Section 3.2.3) and would be considered a significant impact under CEQA.

Mitigation. In order to minimize construction disturbance to Le Conte's thrasher and other migratory bird nests, the applicant will implement one or more of the following measure(s) as necessary, prior to project construction:

> ***Mitigation 3.3.1a* (*Avoidance*).** In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season, or between September 1 and January 31.

***Mitigation 3.3.1b* (*Pre-construction surveys*).** If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities.

***Mitigation 3.3.1c* (*Establish buffers*).** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will reduce potential project impacts to Le Conte's thrasher and other nesting migratory birds to a less than significant level under CEQA, and ensure that the project will be in compliance with state and federal laws protecting nesting birds.

3.3.2 Project Impacts to Desert Tortoise from Construction Mortality

Potential Impacts. The project site contains areas of relatively undisturbed desert scrub habitat. Much of the desert scrub habitat on the site provides relatively low quality desert tortoise habitat due to the low density of creosote bushes and the presence of nearby development that increases the chances of potentially harmful encounters with humans, ravens, and domestic dogs. Nonetheless, desert tortoise could potentially occur within this habitat on the project site. Ruderal lands of the project site are unlikely to support desert tortoise due to the lack of suitable vegetation for foraging and cover and regular human disturbance. Should a desert tortoise occur in desert scrub habitat at the time of construction, then construction related activities have the potential to cause desert tortoise mortality. Project related mortality of desert tortoise is a potentially significant impact under CEQA and would be a violation of state and federal laws protecting the species.

Mitigation. Prior to construction, the following measures adapted from the *U.S. Fish and Wildlife Service Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (December 2009) will be implemented.

Mitigation Measure 3.3.2a (Pre-construction Surveys). Pre-construction surveys will be conducted in suitable desert tortoise habitats on the project site prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS *Desert Tortoise Field Manual*.

Mitigation Measure 3.3.2b (Consultation and Permitting). Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses) consultation with the USFWS and CDFW will likely result in the requirement of "take authorization" in the form of a Biological Opinion (BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the project to lawfully proceed.

Mitigation Measure 3.3.2c (Permit Compliance). The project applicant will comply with all conditions of a BO and ITP issued for the project. Conditions of these permits generally include but are not limited to compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.

Implementation of these measures will reduce construction related impacts to the desert tortoise to a less than significant level under CEQA, ensure compliance with state and federal law, and minimize the risk that construction activities during project development would result in mortality to individual tortoises.

3.3.3 Project Impacts to Burrowing Owls from Construction Mortality

Potential Impacts. Evidence of past or present burrowing owl occupation of the project site was not observed during the survey conducted by LOA in June of 2015. In fact, suitable nesting habitat in the form of suitably sized burrows was also not observed during the field survey. However, if burrowing owls were to occur on or adjacent to the site prior to project construction, ground disturbance from construction related activities could result in the mortality of burrowing owls through burying of individual owls during earth moving activities or nest abandonment. These small raptors are protected under the federal Migratory Bird Treaty Act and Fish and Game Code. Mortality of individual birds would be a violation of state and federal law. Mortality of individual burrowing owls would constitute a potentially significant impact of the project under CEQA.

Mitigation. Prior to project construction one or more of the following measures will be implemented as necessary:

Mitigation Measure 3.3.3a (Take Avoidance Surveys). A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The survey

area will include all suitable habitat within and up to 500 feet outside of project impact areas, where accessible.

Mitigation Measure 3.3.3b (Avoidance of Active Nests). If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet should be established around all active owl nests. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

Mitigation Measure 3.3.3c (Passive Relocation of Resident Owls). During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development may be relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist. Passive relocation will be the preferred method of relocation.

Compliance with the above mitigation measures will reduce construction related impacts to burrowing owls to a less than significant level under CEQA, and ensure compliance with state and federal laws protecting nesting raptors and migratory birds.

3.3.4 Project Impacts to Mohave Ground Squirrel from Construction Mortality

Potential Impacts. Areas of the project site containing desert scrub habitat provide potential foraging and breeding habitat for the Mohave ground squirrel. This species has been documented in similar habitat adjacent to the project site. Ruderal and agricultural lands of the project site provide unsuitable to marginal Mohave ground squirrel habitat. If Mohave ground squirrel were present at the time of construction, then construction related activities have the potential to cause Mohave ground squirrel mortality. Project related mortality of Mohave ground squirrels is a potentially significant impact under CEQA and would be a violation of the state ESA.

Mitigation. Prior to construction, the following measures will be implemented.

Mitigation Measure 3.3.4a (Pre-construction Surveys). Protocol level surveys will be conducted in desert scrub habitats of the project site prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's *Mohave Ground Squirrel Survey Guidelines* (July 2010).

The surveys consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Negative results of these surveys are valid for one year.

Mitigation Measure 3.3.4b (Consultation and Permitting). Survey results will be submitted to the CDFW. Should surveys find Mohave ground squirrel on site, consultation with the CDFW will be required, and likely result in the requirement of "take authorization" in the form of a an Incidental Take Permit (ITP).

Mitigation Measure 3.3.4c (Permit Compliance). If an ITP is issued for the project, the project applicant will comply with all conditions of the ITP. Conditions of this permit generally include but are not limited to compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.

Implementation of these measures will reduce construction related impacts to the Mohave ground squirrel to a less than significant level under CEQA, ensure compliance with state law, and minimize the risk that construction activities during project development would result in mortality to individual Mohave ground squirrels.

3.3.5 Construction Mortality of the American Badger

Potential Impacts. Evidence of past or present American badger occupation of the project site in the form of suitably sized burrows or evidence of badger digging was not observed during the survey conducted by LOA in June of 2015. However, potentially suitable habitat occurs within desert scrub portions of the project site. If badgers were to occur on the project site prior to construction, ground disturbance from construction related activities could result in the mortality of American badgers. Mortality of individual badgers would constitute a potentially significant impact of the project under CEQA.

Mitigation. The following measures will be implemented to avoid and minimize the potential for project-related mortality of American badgers.

Mitigation Measure 3.3.5a (Preconstruction Surveys). A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the project site.

Mitigation Measure 3.3.5b (Avoidance). Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free

buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.

Implementation of these measures will reduce potential construction related project impacts to the American badger to a less than significant level.

3.4 ALTERNATIVE 1 LESS THAN SIGNIFICANT PROJECT IMPACTS

3.4.1 Loss of Habitat for Special Status Plants

Potential Impacts. Three special status vascular plant species are known to occur in the vicinity of the project site (see Table 1). These plant species are considered absent from the project site due to the absence of suitable habitat. Therefore, the proposed project would have no impact on regional populations of these special status plant species.

Mitigation. Mitigation measures are not warranted.

3.4.2 Loss of Habitat or Direct Impact to Special Status Animals Absent or Unlikely to Occur on the Site

Potential Impacts. Of the 13 special status animal species potentially occurring in the region, four species would be absent or unlikely to occur on the site due to the absence of suitable habitat, or the project's location outside the known range of the species. These species include the Mohave tui chub, Inyo California towhee, California condor, and desert bighorn sheep. Since there is little to no likelihood that these species would use the site, disturbance from future development of the project site would have no effect on these species.

Mitigation. No mitigations are warranted.

3.4.3 Loss of Habitat for Special Status Animals that may Occur on the Site as Occasional or Regular Foragers but Breed Elsewhere

Four species may utilize the site for foraging only. These species include the long-eared owl, Townsend's big-eared bat, spotted bat, and pallid bat. Similar and more suitable foraging habitat is abundant throughout the region. Furthermore, the air space above the completed project will continue to provide nearly the same foraging opportunity for bats due to the increase in water to the area that may result in greater numbers of flying insect. Therefore, the project would not

significantly reduce the amount or quality of foraging habitat currently available in the region for these four species.

Mitigation. No mitigations are warranted.

3.4.4 Loss of Habitat for Special Status Animals that may Breed and Forage on the Site

Five species may utilize desert scrub habitat on the site for breeding and foraging, of which approximately 87 acres would experience permanent impacts. These species include the desert tortoise, Le Conte's thrasher, burrowing owl, Mohave ground squirrel, and American badger. The habitat value of onsite desert scrub habitat is diminished by the close proximity of human development. None of these species were observed on the project site during the June field survey and no CNDDB occurrences of these species exist on the project site. Actual use of the project site by these species is unknown at this time. Many square miles of similar and more suitable foraging habitat is abundant throughout the region, including numerous acres of desert scrub habitat monitored and managed by the Department of the Navy located within the NAWS. For the reasons stated above, the project would not significantly reduce the amount or quality of foraging habitat currently available in the region for these five species.

Mitigation. No mitigations are warranted.

3.4.5 Project Impacts to Fish or Wildlife Movement Corridors

Potential Impacts. The project site contains no geographic elements characteristic of a movement corridor (i.e. ridge tops, significant drainages, riparian corridors, etc.) and does not serve as a fish or wildlife movement corridor. Because no part of the project site serves as a fish and wildlife movement corridor, the project will have no effect on regional fish or wildlife movements

Mitigation. Mitigation measures are not warranted.

3.4.6 Disturbance to Riparian Habitat or other Sensitive Habitats and Critical Habitat

Potential Impacts. No riparian or other sensitive habitats occur on the project site. Furthermore, no designated critical habitat occurs on or near the project site. Therefore, there will be no project effect on riparian, sensitive, or critical habitat.

Mitigation. Mitigations are not warranted.

3.4.7 Disturbance to Waters of the United States

Potential Impacts. Waters of the U.S. are absent from the project site and adjacent lands; therefore, there will be no project impacts to Waters of the U.S.

Mitigation. Mitigations are not warranted.

3.4.8 Degradation of Water Quality in Downstream Waters

Potential Impacts. Extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. However, hydrologic features are absent for the project site and surrounding lands. Furthermore, the project area is flat and receives very little rainfall. Therefore, project impacts to downstream waters are considered less than significant.

Mitigation Mitigations are not warranted.

3.4.9 Local Policies or Habitat Conservation Plans

Potential Impacts. The project will comply with the provisions of the 2030 City of Ridgecrest General Plan and 2007 County of San Bernardino General Plan policies (as amended in 2014) related to biological resources. These policies can be found in Attachment D. No habitat conservation plans are in effect for the project area.

Mitigation. Mitigations are not warranted.

3.5 ALTERNATIVE 2 POTENTIALLY SIGNIFICANT PROJECT IMPACTS AND MITIGATION

The project considered in this evaluation of impacts to biological resources is the development of wastewater treatment facilities on portions of 230 acres of City owned land that contain wastewater ponds, an off-road vehicle park and other ruderal lands, and vacant land containing desert scrub habitat. Proposed development would convert approximately 60 acres of ruderal lands and 80 acres of desert scrub habitat to new wastewater treatment facilities. Also, this project will entail the underground installation of approximately four miles of piping that will connect with the City of Ridgecrest WWTP with the NAWS WWTP. The pipeline installation will require an 80 foot wide temporary disturbance corridor along the length of the four-mile long pipeline. Habitats within the pipeline disturbance corridor include desert scrub, ruderal, and ephemeral drainage habitat. Elements of the existing NAWS waste treatment plant will be demolished.

3.5.1 Project Related Mortality or Disturbance to Le Conte's Thrasher and Other Nesting Migratory Birds

Potential Impacts. The project site has the potential to be used for nesting by the Le Conte's thrasher and a number of other avian species protected under the federal Migratory Bird Treaty Act and related state laws. If any birds were to nest on the project site prior to construction, project-related activities could result in the abandonment of active nests or direct mortality to birds. Such an activity would constitute a violation of state and federal laws (see Section 3.2.3) and would be considered a significant impact under CEQA.

Mitigation. In order to minimize construction disturbance to Le Conte's thrasher and other migratory bird nests, the applicant will implement one or more of the following measure(s) as necessary, prior to project construction:

> ***Mitigation 3.5.1a* (*Avoidance*).** In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season, or between September 1 and January 31.
>
> ***Mitigation 3.5.1b* (*Pre-construction surveys*).** If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities.

***Mitigation 3.5.1c* (*Establish buffers*).** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will reduce potential project impacts to Le Conte's thrasher and other nesting migratory birds to a less than significant level under CEQA, and ensure that the project will be in compliance with state and federal laws protecting nesting birds.

3.5.2 Project Impacts to Desert Tortoise from Construction Mortality

Potential Impacts. The project site contains areas of relatively undisturbed desert scrub habitat. Much of the desert scrub habitat on the site provides relatively low quality desert tortoise habitat due to the low density of creosote bushes and the presence of nearby development that increases the chances of potentially harmful encounters with humans, ravens, and domestic dogs. Nonetheless, desert tortoise could potentially occur within this habitat on the project site. Ruderal lands of the project site are unlikely to support desert tortoise due to the lack of suitable vegetation for foraging and cover and regular human disturbance. Should a desert tortoise occur in desert scrub habitat at the time of construction, then construction related activities have the potential to cause desert tortoise mortality. Project related mortality of desert tortoise is a potentially significant impact under CEQA and would be a violation of state and federal laws protecting the species.

Mitigation. Prior to construction, the following measures adapted from the *U.S. Fish and Wildlife Service Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (December 2009) will be implemented.

Mitigation Measure 3.5.2a (Pre-construction Surveys). Pre-construction surveys will be conducted in suitable desert tortoise habitats on the project site prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS *Desert Tortoise Field Manual*.

Mitigation Measure 3.5.2b (Consultation and Permitting). Survey results will be submitted to the USFWS and CDFW. Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses) consultation with the USFWS and CDFW will likely result in the requirement of "take authorization" in the form of a Biological Opinion

(BO) issued by the USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the project to lawfully proceed.

Mitigation Measure 3.5.2c (Permit Compliance). The project applicant will comply with all conditions of a BO and ITP issued for the project. Conditions of these permits generally include but are not limited to compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.

Implementation of these measures will reduce construction related impacts to the desert tortoise to a less than significant level under CEQA, ensure compliance with state and federal law, and minimize the risk that construction activities during project development would result in mortality to individual tortoises.

3.5.3 Project Impacts to Burrowing Owls from Construction Mortality

Potential Impacts. Evidence of past or present burrowing owl occupation of the project site was not observed during the survey conducted by LOA in June of 2015. In fact, suitable nesting habitat in the form of suitably sized burrows was also not observed during the field survey. However, if burrowing owls were to occur on or adjacent to the site prior to project construction, ground disturbance from construction related activities could result in the mortality of burrowing owls through burying of individual owls during earth moving activities or nest abandonment. These small raptors are protected under the federal Migratory Bird Treaty Act and Fish and Game Code. Mortality of individual birds would be a violation of state and federal law. Mortality of individual burrowing owls would constitute a potentially significant impact of the project under CEQA.

Mitigation. Prior to project construction one or more of the following measures will be implemented as necessary:

Mitigation Measure 3.5.3a (Take Avoidance Surveys). A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of project impact areas, where accessible.

Mitigation Measure 3.5.3b (Avoidance of Active Nests). If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet should be established around all active owl nests. The buffer areas should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

Mitigation Measure 3.5.3c (Passive Relocation of Resident Owls). During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development may be relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist. Passive relocation will be the preferred method of relocation.

Compliance with the above mitigation measures will reduce construction related impacts to burrowing owls to a less than significant level under CEQA, and ensure compliance with state and federal laws protecting nesting raptors and migratory birds.

3.5.4 Project Impacts to Mohave Ground Squirrel from Construction Mortality

Potential Impacts. Areas of the project site containing desert scrub habitat provide potential foraging and breeding habitat for the Mohave ground squirrel. This species has been documented in similar habitat adjacent to the project site. Ruderal and agricultural lands of the project site provide unsuitable to marginal Mohave ground squirrel habitat. If Mohave ground squirrel were present at the time of construction, then construction related activities have the potential to cause Mohave ground squirrel mortality. Project related mortality of Mohave ground squirrels is a potentially significant impact under CEQA and would be a violation of the state ESA.

Mitigation. Prior to construction, the following measures will be implemented.

Mitigation Measure 3.5.4a (Pre-construction Surveys). Protocol level surveys will be conducted in desert scrub habitats of the project site prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's *Mohave Ground Squirrel Survey Guidelines* (July 2010). The surveys consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Negative results of these surveys are valid for one year.

Mitigation Measure 3.5.4b (Consultation and Permitting). Survey results will be submitted to the CDFW. Should surveys find Mohave ground squirrel on site, consultation with the CDFW will be required, and likely result in the requirement of "take authorization" in the form of a an Incidental Take Permit (ITP).

Mitigation Measure 3.5.4c (Permit Compliance). If an ITP is issued for the project, the project applicant will comply with all conditions of the ITP. Conditions of this permit generally include but are not limited to compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.

Implementation of these measures will reduce construction related impacts to the Mohave ground squirrel to a less than significant level under CEQA, ensure compliance with state law, and minimize the risk that construction activities during project development would result in mortality to individual Mohave ground squirrels.

3.5.5 Construction Mortality of the American Badger

Potential Impacts. Evidence of past or present American badger occupation of the project site in the form of suitably sized burrows or evidence of badger digging was not observed during the survey conducted by LOA in June of 2015. However, potentially suitable habitat occurs within desert scrub portions of the project site. If badgers were to occur on the project site prior to construction, ground disturbance from construction related activities could result in the mortality of American badgers. Mortality of individual badgers would constitute a potentially significant impact of the project under CEQA.

Mitigation. The following measures will be implemented to avoid and minimize the potential for project-related mortality of American badgers.

Mitigation Measure 3.5.5a (Preconstruction Surveys). A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the project site.

Mitigation Measure 3.5.5b (Avoidance). Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.

Implementation of these measures will reduce potential construction related project impacts to the American badger to a less than significant level.

3.5.6 Degradation of Water Quality in Downstream Waters

Potential Impacts. Extensive grading often leaves the soils of construction zones barren of vegetation and, therefore, vulnerable to erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. Hydrologic features found on the study area consist of a small ephemeral drainage. Project construction may result in the deposition of sediment or pollutants into portions of this drainage. In addition, the project may result in the placement of fill or the deposition of sediment in the onsite ephemeral drainage, portions of which appear to meet the definition of a water of the state. Direct impacts to a water of the state require a Notification of Waste Discharge submitted to the RWQCB for review. The CDFW may also assert jurisdiction over this drainage, in which case a Stream Alteration Agreement would be issued by CDFW, upon review of a completed notification form. Such impacts are considered a potentially significant impact of the project under CEQA.

Mitigation. Prior to the start of construction, the applicant will implement the following mitigation measures.

> ***Measure 3.5.6a (Preparation of erosion control plan).*** Prior to the start of construction, an erosion control plan will be prepared, Typically, specified erosion control measures must be implemented prior to the onset of the rainy season. The site must then be monitored periodically throughout the rainy season to ensure that the erosion control measures are successfully preventing onsite erosion and the concomitant deposition of sediment in onsite and offsite drainages. Elements of this plan would address both the potential for soil erosion and non-point source pollution. At a minimum, elements of the erosion control plan will include the following:
>
> 1) Protection of exposed graded slopes from sheet, rill and gully erosion. Such protection could be in the form of erosion control fabric, hydromulch containing the seed of native soil-binding plants, straw mechanically imbedded in exposed soils, or some combination of the three.
>
> 2) Use of best management practices (BMPs) to control soil erosion and non-point source pollution. BMPs may include measures 1 above, but they may include any

number of additional measures appropriate for this particular site and this particular project, including grease traps in parking areas, regular site inspections for pollutants that could be carried by runoff into natural drainages, etc.

Implementation of an erosion control plan as discussed above will reduce impacts to water quality in downstream waters to a less than significant level.

3.6 ALTERNATIVE 2 LESS THAN SIGNIFICANT PROJECT IMPACTS

3.6.1 Loss of Habitat for Special Status Plants

Potential Impacts. Three special status vascular plant species are known to occur in the vicinity of the project site (see Table 1). These plant species are considered absent from the project site due to the absence of suitable habitat. Therefore, the proposed project would have no impact on regional populations of these special status plant species.

Mitigation. Mitigation measures are not warranted.

3.6.2 Loss of Habitat or Direct Impact to Special Status Animals Absent or Unlikely to Occur on the Site

Potential Impacts. Of the 13 special status animal species potentially occurring in the region, four species would be absent or unlikely to occur on the site due to the absence of suitable habitat, or the project's location outside the known range of the species. These species include the Mohave tui chub, Inyo California towhee, California condor, and desert bighorn sheep. Since there is little to no likelihood that these species would use the site, disturbance from future development of the project site would have no effect on these species.

Mitigation. No mitigations are warranted.

3.6.3 Loss of Habitat for Special Status Animals that may Occur on the Site as Occasional or Regular Foragers but Breed Elsewhere

Four species may utilize the site for foraging only. These species include the long-eared owl, Townsend's big-eared bat, spotted bat, and pallid bat. Similar and more suitable foraging habitat is abundant throughout the region. Furthermore, the air space above the completed project will continue to provide nearly the same foraging opportunity for bats due to the increase in water to

the area that may result in greater numbers of flying insect. Therefore, the project would not significantly reduce the amount or quality of foraging habitat currently available in the region for these four species.

Mitigation. No mitigations are warranted.

3.6.4 Loss of Habitat for Special Status Animals that may Breed and Forage on the Site

Five species may utilize desert scrub habitat on the site for breeding and foraging, of which approximately 80 acres would experience permanent impacts. These species include the desert tortoise, Le Conte's thrasher, burrowing owl, Mohave ground squirrel, and American badger. The habitat value of onsite desert scrub habitat is diminished by the close proximity of human development. None of these species were observed on the project site during the June field survey and no CNDDB occurrences of these species exist on the project site. Actual use of the project site by these species is unknown at this time. Many square miles of similar and more suitable foraging habitat is abundant throughout the region, including numerous acres of desert scrub habitat monitored and managed by the Department of the Navy located within the NAWS. For the reasons stated above, the project would not significantly reduce the amount or quality of foraging habitat currently available in the region for these five species.

Mitigation. No mitigations are warranted.

3.6.5 Project Impacts to Fish or Wildlife Movement Corridors

Potential Impacts. The project site contains no geographic elements characteristic of a movement corridor (i.e. ridge tops, significant drainages, riparian corridors, etc.) and does not serve as a fish or wildlife movement corridor. Because no part of the project site serves as a fish and wildlife movement corridor, the project will have no effect on regional fish or wildlife movements

Mitigation. Mitigation measures are not warranted.

3.6.6 Disturbance to Riparian Habitat or other Sensitive Habitats and Critical Habitat

Potential Impacts. No riparian or other sensitive habitats occur on the project site. Furthermore, no designated critical habitat occurs on or near the project site. Therefore, there will be no project effect on riparian, sensitive, or critical habitat.

Mitigation. Mitigations are not warranted.

3.6.7 Disturbance to Waters of the United States

Potential Impacts. Waters of the U.S. are absent from the project site and adjacent lands; therefore, there will be no project impacts to Waters of the U.S.

Mitigation. Mitigations are not warranted.

3.6.8 Local Policies or Habitat Conservation Plans

Potential Impacts. The project will comply with the provisions of the 2030 City of Ridgecrest General Plan and 2007 County of San Bernardino General Plan policies (as amended in 2014) related to biological resources. These policies can be found in Attachment D. No habitat conservation plans are in effect for the project area.

Mitigation. Mitigations are not warranted.

3.7 ALTERNATIVE 3 (NO ACTION ALTERNATIVE) PROJECT IMPACT STATEMENT

Under this alternative the City of Ridgecrest would continue to utilize the existing WWTP infrastructure at both the NAWS site and City site in the same manner as they currently do to treat City wastewater. This project alternative would result in no additional alterations to biotic habitats than currently occur during routine operations and maintenance activities associated with the NAWS and City WWTPs. Therefore, Project Alternative 3 impacts to sensitive or protected biological resources would be absent.

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APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

The plants species listed below were observed on the Ridgecrest WWTP Project Alternative sites during a survey conducted by Live Oak Associates, Inc. on June 8 and 9, 2015. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

AGAVACEAE – Agave Family		
Yucca sp.	Yucca	UPL
AMARANTHACEAE – Amaranth Family		
Amaranthus albus	Pigweed amaranth	FACU
APOCYNACEAE – Dogbane Family		
Nerium oleander	Oleander	UPL
ASTERACEAE – Sunflower Family		
Ambrosia acanthicarpa	Annual bursage	UPL
Ambrosia dumosa	White bur-sage	UPL
Camissonia campestris	Sun cups	UPL
Helianthus annuus	Annual sunflower	FACU
Lactuca serriola	Prickly lettuce	FACU
Lasthenia californica	Goldfields	FACU
Psathyrotes annua	Annual psathyrotes	UPL
Stephanomeria pauciflora	Wire lettuce	UPL
BORAGINACEAE – Borage Family		
Amsinckia tessellata	Fiddleneck	UPL
Cryptantha angustifolia	Narrow leaved cryptantha	UPL
Heliotropium curassavicum	Salt heliotrope	FACU
BRASSICACEAE – Mustard Family		
Lepidium fremontii	Bush peppergrass	UPL
Lepidium latifolium	Broadleaved peppergrass	FAC
Lepidium nitidum	Shinning peppergrass	FAC
Sisymbrium sp.	Mustard	
Stanleya pinnata	Prince’s plume	UPL
CACTACEAE - Cactus Family		
Cylindropuntia echinocarpa	Silver cholla	UPL
CHENOPODIACEAE – Goosefoot Family		
Atriplex polycarpa	Allscale	FACU

Atriplex serenana var. serenana	Bractscale	FAC
Atriplex spinifera	Mojave saltbush	FAC
Salsola tragus	Russian thistle	FACU
CONVOLVULACEAE – Morning Glory Family		
Cuscuta denticulata	Desert dodder	UPL
CUPRESSACEAE – Cypress Family		
Juniperus sp.	Juniper	UPL
CYPERACEAE – Sedge Family		
Bolboschoenus robustus	Sturdy bullrush	OBL
EUPHORBIACEAE - Spurge Family		
Chamaesyce albomarginata	Rattlesnake weed	UPL
Croton setiger	Turkey-mullein	UPL
FABACEAE – Legume Family		
Senna armata	Desert Senna	UPL
GERANIACEAE – Geranium Family		
Erodium cicutarium	Red-stemmed filaree	UPL
MALVACEAE – Mallow Family		
Malva sp.	Cheeseweed	UPL
MORACEAE – Mulberry Family		
Morus alba	White mulberry	UPL
MYRTACEAE – Bottlebrush Family		
Eucalyptus camaldulensis	Red gum	UPL
ONAGRACEAE – Evening Primrose Family		
Camissonia campestris	Mojave sun cups	UPL
PINACEAE – Pine Family		
Pinus eldarica	Afghan Pine	UPL
PLANTAGINACEAE – Plantain Family		
Plantago ovata	Desert plantain	FACU
POACEAE - Grass Family		
Bromus madritensis ssp. *rubens*	Red brome	UPL
Cynodon dactylon	Bermuda grass	FAC
Hordeum murinum ssp. *leporinum*	Barnyard garley	FACU
Polypogon monspeliensis	Rabbit’s foot grass	FACW
Schismus sp.	Schismus	UPL
POLYGONACEAE - Buckwheat Family		
Rumex crispus	Curly dock	FAC
RANUNCULACEAE - Buttercup Family		
Clematis ligusticifolia	Western virgin's bower	FAC
SALICACEAE – Willow Family		
Populus fremontii	Fremont cottonwood	UPL
SOLONACEAE – Nightshade Family		
Datura wrightii	Datura	UPL
TAMARICACEAE – Tamarisk Family		
Tamarix sp.	Tamarisk	FAC
ZYGOPHYLLACEAE - Caltrop Family		
Larrea tridentata	Creosote	UPL

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the Ridgecrest WWTP Project Alternative sites during surveys conducted by Live Oak Associates, Inc. on June 8 and 9, 2015 have been noted with an asterisk.

CLASS: REPTILIA (Reptiles)
ORDER: TESTUDINES (Turtles)
FAMILY: TESTUDINIDAE (True Land Tortoises)
Desert Tortoise (*Gopherus agassizii*)
ORDER: SQUAMATA (Lizards and Snakes)
FAMILY: EUBLEPHARIDAE (Eyelid Geckos)
Western Banded Gecko (*Coleonyx variegates*)
FAMILY: IGUANIDAE (Iguanids)
Desert Iguana (*Dipsosaurus dorsalis*)
FAMILY: CROTAPHYTIDAE (Collared and Leopard Lizards)
Long-Nosed Leopard Lizard (*Gambelia wislizenii*)
FAMILY: PHRYNOSOMATIDAE
Zebra-Tailed Lizard (*Callisaurus draconoide*s)
Western Fence Lizard (*Sceloporus occidentalis*)
Sagebrush Lizard (*Sceloporus graciosus*)
Common Side-Blotched Lizard (*Uta stansburiana*)
Desert Horned Lizard (*Phrynosoma platyrhinos*)
FAMILY: XANTUSIIDAE (Night Lizards)
Desert Night Lizard (*Xantusia vigilis*)
FAMILY: TEIIDAE (Whiptails and Relatives)
*Western Whiptail (*Aspidoscelis tigris*)
FAMILY: COLUBRIDAE (Colubrids)
Spotted Leaf-Nosed Snake (*Phyllorhynchus decurtatus*)
Red Racer (*Coluber flagellum*)
Desert Striped Whipsnake (*Masticophis taeniatus*)
Mohave Patch-Nosed Snake (*Salvadora hexalepis mojavensis*)
Gopher Snake (*Pituophis catenifer*)
Glossy Snake (*Arizona elegans*)
Common Kingsnake (*Lampropeltis getula*)
Long-Nosed Snake (*Rhinocheilus lecontei*)
Western Shovel-Nosed Snake (*Chionactis occipitalis*)
Night Snake (*Hypsiglena torquata*)
FAMILY: VIPERIDAE (Vipers)
Mojave Desert Sidewinder (*Crotalus cerastes cerastes*)
Northern Mojave Rattlesnake (*Crotalus scutulatus scutulatus*)

CLASS: AVES (Birds)

ORDER: GAVIIFORMES (Loons)

FAMILY: PODICIPEDIDAE (Grebes)

Pied-Billed Grebe (*Podilymbus podiceps*)

*Eared Grebe (*Podiceps nigricollis*)

ORDER: PELECANIFORMES (Tropicbirds, Pelicans and Relatives)

FAMILY: PHALACROCORACIDAE (Cormorants)

*Double-Crested Cormorant (*Phalacrocorax auritus*)

ORDER: CICONIIFORMES (Herons, Storks, Ibises and Relatives)

FAMILY: ARDEIDAE (Herons and Bitterns)

*Great Blue Heron (*Ardea herodias*)

*Green Heron (*Butorides virescens*)

FAMILY: THRESKIORNITHIDAE (Ibises and Spoonbills)

*White-Faced Ibis (*Plegadis chihi*)

FAMILY: CATHARTIDAE (New World Vultures)

*Turkey Vulture (*Cathartes aura*)

ORDER: ANSERIFORMES (Screamers, Ducks and Relatives)

FAMILY: ANATIDAE (Swans, Geese and Ducks)

Snow Goose (*Chen caerulescens*)

Canada Goose (*Branta Canadensis*)

Trumpeter Swan (*Cygnus buccinator*)

*Gadwall (*Anas strepera*)

American Wigeon (*Anas Americana*)

*Mallard (*Anas platyrhynchos*)

*Cinnamon Teal (*Anas cyanoptera*)

Northern Shoveler (*Anas clypeata*)

Northern Pintail (*Anas acuta*)

Green-Winged Teal (*Anas crecca*)

*Redhead (*Aythya Americana*)

Bufflehead (*Bucephala albeola*)

*Ruddy Duck (*Oxyura jamaicensis*)

ORDER: FALCONIFORMES (Vultures, Hawks and Falcons)

FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures and Harriers)

Northern Harrier (*Circus cyaneus*)

*Red-Tailed Hawk (*Buteo jamaicensis*)

FAMILY: FALCONIDAE (Caracaras and Falcons)

*American Kestrel (*Falco sparverius*)

ORDER: GALLIFORMES (Magapodes, Curassows, Pheasants and Relatives)

FAMILY: ODONTOPHORIDAE (New World Quail)

*California Quail (*Callipepla californica*)

ORDER: GRUIFORMES (Cranes, Rails and Relatives)

FAMILY: RALLIDAE (Rails, Gallinules and Coots)

*Virginia Rail (*Rallus limicola*)

*Common Moorhen (*Gallinula chloropus*)

*American Coot (*Fulica americana*)

ORDER: CHARADRIIFORMES (Shorebirds, Gulls and Relatives)

FAMILY: CHARADRIIDAE (Plovers and Relatives)
*Killdeer (*Charadrius vociferus*)
FAMILY: RECURVIROSTRIDAE (Avocets and Stilts)
*Black-Necked Stilt (*Himantopus mexicanus*)
*American Avocet (*Recurvirostra americana*)
FAMILY: COLOPACIDAE (Sandpipers and Relatives)
Greater Yellowlegs (*Tringa melanoleuca*)
Lesser Yellowlegs (*Tringa flavipes*)
Spotted Sandpiper (*Actitis macularia*)
Western Sandpiper (*Calidris mauri*)
Least Sandpiper (*Calidris minutilla*)
Long-Billed Dowitcher (*Limnodromus scolopaceus*)
*Wilson's Phalarope (*Phalaropus tricolor*)
Red-Necked Phalarope (*Phalaropus lobatus*)
FAMILY: LARIDAE (Skuas, Gulls, Terns and Skimmers)
Ring-Billed Gull (*Larus delawarensis*)
*California Gull (*Larus californicus*)
Black Tern (*Chlidonias niger*)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
*Rock Dove (*Columba livia*)
*Eurasian Collared-Dove (*Streptopelia decaocto*)
*Mourning Dove (*Zenaida macroura*)
ORDER: CUCULIFORMES (Cuckoos and Relatives)
FAMILY: CUCULIDAE (Typical Cuckoos)
Greater Roadrunner (*Geococcyx californianus*)
ORDER: STRIGIFORMES (Owls)
FAMILY: STRIGIDAE (Typical Owls)
*Great Horned Owl (*Bubo virginianus*)
Burrowing Owl (*Athene cunicularia*)
Long-Eared Owl (*Asio otus*)
ORDER: CAPRIMULGIFORME (Goatsuckers and Relatives)
FAMILY: CAPRIMULGIDAE (Goatsuckers)
*Lesser Nighthawk (*Chordeiles acutipennis*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: TROCHILIDAE (Hummingbirds)
Black-Chinned Hummingbird (*Archilochus alexandri*)
Anna's Hummingbird (*Calypte anna*)
Costa's Hummingbird (*Calypte costae*)
Rufous Hummingbird (*Selasphorus rufus*)
ORDER: PICIFORMES (Woodpeckers and Relatives)
FAMILY: PICIDAE (Woodpeckers and Wrynecks)
Red-Naped Sapsucker (*Sphyrapicus nuchalis*)
Ladder-Backed Woodpecker (*Picoides scalaris*)
Northern Flicker (*Colaptes auratus*)
ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)
Greater Pewee (*Contopus pertinax*)
Western Wood-Pewee (*Contopus sordidulus*)
Pacific-Slope Flycatcher (*Empidonax difficilis*)
Black Phoebe (*Sayornis nigricans*)
*Say's Phoebe (*Sayornis saya*)
Ash-Throated Flycatcher (*Myiarchus cinerascens*)
*Western Kingbird (*Tyrannus verticalis*)
FAMILY: LANIIDAE (Shrikes)
*Loggerhead Shrike (*Lanius ludovicianus*)
FAMILY: VIREONIDAE (Typical Vireos)
Warbling Vireo (*Vireo gilvus*)
FAMILY: CORVIDAE (Jays, Magpies and Crows)
*Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
*Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
Tree Swallow (*Tachycineta bicolor*)
Violet-Green Swallow (*Tachycineta thalassina*)
*Northern Rough-Winged Swallow (*Stelgidopteryx serripennis*)
Bank Swallow (*Riparia riparia*)
Cliff Swallow (*Petrochelidon pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
FAMILY: REMIZIDAE (Verdin)
Verdin (*Auriparus flaviceps*)
FAMILY: TROGLODYTIDAE (Wrens)
Cactus Wren (*Campylorhynchus brunneicapillus*)
Rock Wren (*Salpinctes obsoletus*)
Bewick's Wren (*Thryomanes bewickii*)
House Wren (*Troglodytes aedon*)
Marsh Wren (*Cistothorus palustris*)
FAMILY: REGULIDAE (Kinglets)
Ruby-Crowned Kinglet (*Regulus calendula*)
FAMILY: SYLVIIDAE (Old World Warblers and Gnatcatchers)
Blue-Gray Gnatcatcher (*Polioptila caerulea*)
FAMILY: TURDIDAE (Thrushes)
Western Bluebird (*Sialia mexicana*)
Mountain Bluebird (*Sialia currucoides*)
Hermit Thrush (*Catharus guttatus*)
American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
*Northern Mockingbird (*Mimus polyglottos*)
Sage Thrasher (*Oreoscoptes montanus*)
Le Conte's Thrasher (*Toxostoma lecontei*)
FAMILY: STURNIDAE (Starlings and Allies)
European Starling (*Sturnus vulgaris*)

FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubrescens*)
FAMILY: BOMBYCILLIDAE (Waxwings)
Cedar Waxwing (*Bombycilla cedrorum*)
FAMILY: PTILOGONATIDAE (Silky Flycatchers)
Phainopepla (*Phainopepla nitens*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
Orange-Crowned Warbler (*Vermivora celata*)
Yellow Warbler (*Dendroica petechia*)
Yellow-Rumped Warbler (*Dendroica coronata*)
Black-Throated Gray Warbler (*Dendroica nigrescens*)
Common Yellowthroat (*Geothlypis trichas*)
Wilson's Warbler (*Wilsonia pusilla*)
FAMILY: THRAUPIDAE (Tanagers)
Western Tanager (*Piranga ludoviciana*)
FAMILY: EMBERIZIDAE (Emberizines)
California Towhee (*Pipilo crissalis*)
Chipping Sparrow (*Spizella passerina*)
*Brewer's Sparrow (*Spizella breweri*)
*Black-Throated Sparrow (*Amphispiza bilineata*)
*Sage Sparrow (*Amphispiza belli*)
Savannah Sparrow (*Passerculus sandwichensis*)
Nelson's Sharp-Tailed Sparrow (*Ammodramus nelsoni*)
*Song Sparrow (*Melospiza melodia*)
Lincoln's Sparrow (*Melosp iza lincolnii*)
White-Crowned Sparrow (*Zonotrichia leucophrys*)
Dark-Eyed Junco (*Junco hyemalis*)
FAMILY: CARDINALIDAE (Cardinals, Grosbeaks and Allies)
Black-Headed Grosbeak (*Pheucticus melanocephalus*)
Lazuli Bunting (*Passerina amoena*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
Red-Winged Blackbird (*Agelaius phoeniceus*)
Western Meadowlark (*Sturnella neglecta*)
Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*)
Brewer's Blackbird (*Euphagus cyanocephalus*)
*Great-Tailed Grackle (*Quiscalus mexicanus*)
Brown-Headed Cowbird (*Molothrus ater*)
Bullock's Oriole (*Icterus bullockii*)
Scott's Oriole (*Icterus parisorum*)
FAMILY: FRINGILLIDAE (Finches)
House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)
Lawrence's Goldfinch (*Carduelis lawrencei*)
American Goldfinch (*Carduelis tristis*)
FAMILY: PASSERIDAE (Old World Sparrows)
House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Evening Bats)

Little Brown Myotis (*Myotis lucifugus*)
Fringed Myotis (*Myotis thysanodes*)
Long-Legged Myotis (*Myotis volans*)
California Myotis (*Myotis californicus*)
Western Small-Footed Myotis (*Myotis ciliolabrum*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Spotted Bat (*Euderma maculatum*)
Townsend's Big-Eared Bat (*Corynorhinus townsendii townsendii*)
Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (Free-tailed Bats)

Brazilian Free-Tailed Bat (*Tadarida brasiliensis*)

ORDER: LAGOMORPHA (Rabbits, Hares and Pika)

FAMILY: LEPORIDAE (Rabbits and Hares)

*Desert Cottontail (*Sylvilagus audubonii*)
*Black-Tailed Jackrabbit (*Lepus californicus*)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks and Marmots)

*White-Tailed Antelope Squirrel (*Ammospermophilus leucurus*)
Mohave Ground Squirrel (*Spermophilus mohavensis*)

FAMILY: GEOMYIDAE (Pocket Gophers)

Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)

Little Pocket Mouse (*Perognathus longimembris*)
Long-Tailed Pocket Mouse (*Chaetodipus formosus*)
Chisel-Toothed Kangaroo Rat (*Dipodomys microps*)
Panamint Kangaroo Rat (*Dipodomys panamintinus*)
Desert Kangaroo Rat (*Dipodomys deserti*)
Merriam's Kangaroo Rat (*Dipodomys merriami*)

FAMILY: MURIDAE (Mice, Rats and Voles)

Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
Canyon Mouse (*Peromyscus crinitus*)
Southern Grasshopper Mouse (*Onychomys torridus*)
Desert Woodrat (*Neotoma lepida*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves and Relatives)

Feral Dog (*Canis familiaris*)
*Coyote (*Canis latrans*)
Kit Fox (*Vulpes macrotis*
Gray Fox (*Urocyon cinereoargenteus*)

FAMILY: FELIDAE (Cats)

Feral Cat (*Felis catus*)
Bobcat (*Lynx rufus*)

APPENDIX C: SELECTED SITE PHOTOGRAPHS



Photo 1: Desert scrub habitat at the City site adjacent residential development in background.



Photo 2: Desert scrub habitat at the NAWS site.



Photo 3: Ruderal habitat at the City site.



Photo 4: Ruderal habitat at the City site.



Photo 5: Ruderal habitat at the NAWS site with ornamental trees.



Photo 6: Agricultural land at the City site utilized for disposing treated wastewater.



Photo 7: Wastewater pond at the City site.



Photo 8: Wastewater pond at the NAWS site.



Photo 9: Ephemeral drainage crossing the Alternative 2 pipeline alignment and surrounding desert scrub habitat.



Photo 10: Ephemeral drainage crossing the four-mile pipeline alignment crossing beneath Pilot Plant Road. Desert scrub habitat along the pipeline alignment is visible in background.



Photo 11: Ruderal habitat along the four-mile pipeline alignment.

APPENDIX D: GENERAL PLAN POLICIES

OSC-4.15 Local and State Programs

The City shall participate in local and state programs that encourage energy conservation and reduction methods. [New Policy]

OSC-4.16 Landscape Improvements

The City shall encourage the planting of shade trees along all City streets to reduce radiation heating. [New Policy]

OSC-4.17 Alternative Energy Vehicles

The City shall use alternative energy vehicles, where feasible, to provide public services. [New Policy]

Biological Resources

Goal OSC-5	To continue to make the Indian Wells Valley a desirable place to live, work, and enjoy leisure time, by maintaining the high level of environmental quality characteristic of the Indian Wells Valley. [Source: Conservation Element, Goal 5.1 - revised]

OSC-5.1 Off-Highway Vehicles

The City shall prohibit off-highway vehicle use in designated habitat preservation areas, as well as in ecologically important and sensitive lands. [Source: Modified Policy 5.1.8, Conservation Element]

OSC-5.2 Cerro Coso Community College

The City shall support the BLM's efforts to retain natural open space areas surrounding Cerro Coso Community College. [Source: Policy 4.3.8, Open Space Element and Policy 5.1.9, Conservation Element]

OSC-5.3 Maintain Biological Resource Database

The City shall maintain a current database of biological resources, including maps that identify the locations of specific environmentally-sensitive habitats and lists of special-status species. [New Policy]

OSC-5.4 Development Review

The City shall review development proposals in accordance with applicable Federal, State and local statues protecting special-status species and jurisdictional wetlands. [New Policy]

OSC-5.5 Requirements for Biological Studies

On sites that have the potential to contain special-species, critical / sensitive habitats or are within 100 feet of such areas, the City shall require the project applicant to have the site surveyed by a qualified biologist in order to determine the biological impact of the development. A report on the findings of the survey shall be submitted to the City as part of the application process. [New Policy]



OSC-5.6 Regional Habitat Conservation Plan

The City shall consider the adoption of the West Mojave Habitat Conservation Plan as the regional habitat conservation plan. [New Policy – R-508 JLUS]

OSC-5.7 Appropriate Mitigation Measures

The City shall consider using appropriate mitigation measures for future projects (i.e., specific plans or individual projects) based on mitigation standards or protocols adopted by the applicable statute or agency (e.g., USFWS, CDFG, etc.) with jurisdiction over any affected sensitive habitats or special status species. [New Policy]

OSC-5.8 New Development in Sensitive Areas

The City shall require that new development in areas that are known to have particular value for biological resources be carefully planned and where possible avoided so that the value of existing sensitive vegetation and wildlife habitat can be maintained. [New Policy]

Groundwater and Water Resources

Goal OSC-6	To ensure that a supply of acceptable quality water is available to meet the present and future needs of the City and the Indian Wells Valley. The City shall continue to support the Indian Wells Valley Water District [Source: Goal 5.2, Conservation Element]

OSC-6.1 Reduce Surface and Runoff

The City shall require a construction plan prior to the groundbreaking that uses site design and grading techniques to reduce the amount of impervious surface and runoff for all new urban commercial or residential developments proposed projects. [Source: Modified Policy 5.1.10, Conservation Element]

OSC-6.2 Solid and Liquid Waste Disposal

The City shall require the disposition of solid and liquid wastes in a manner consistent with state and federal regulations to prevent contamination of the aquifer. [Source: Modified Policy 5.1.11, Conservation Element]

OSC-6.3 Establish a Sustainable Yield of Groundwater

The City shall work in partnership with the Indian Wells Water Valley Water to establish a reasonable population limit for the City and Indian Wells Valley in order to reflect the basin's capacity for sustainable yield of groundwater for future studies. [Source: Policy 5.1.12, Conservation Element]

Biological Resources and Open Space Overlays to facilitate an accurate and current spatial data based on local, state, and federally protected species and their habitats.

1. BIOLOGICAL RESOURCES

GOAL CO 2. **The County will maintain and enhance biological diversity and healthy ecosystems throughout the County.**

POLICIES

CO 2.1 The County will coordinate with state and federal agencies and departments to ensure that their programs to preserve rare and endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs.

Programs

1. All County Land Use Map changes and discretionary land use proposals, for areas within the Biotic Resource Overlay or Open Space Mapping on the Resources Overlay, shall be accompanied by a report that identifies all biotic resources located on the site and those on adjacent parcels, which could be adversely affected by the proposal. The report shall outline mitigation measures designed to eliminate or reduce impacts to identified resources. An appropriate expert such as a qualified biologist, botanist, herpetologist or other professional "life scientist" shall prepare the report.

2. The County shall require the conditions of approval of any land use application to incorporate the County's identified mitigation measures in addition to those that may be required by state or federal agencies to protect and preserve the habitats of the identified species. This measure is implemented through the land use regulations of the County Development Code and compliance with the CEQA, CESA, ESA and related environmental laws and regulations.

3. The County shall coordinate with local, state, and federal agencies to create a specific and detailed wildlife corridor map for the County of San Bernardino. The map will identify movement

corridors and refuge area for large mammal, migratory species, and desert species dependent on transitory resource based on rainfall. The wildlife corridor and refuge area map will be used for preparation of biological assessments prior to permitting land use conversion within County jurisdictional areas. The mapping will be included in the Open Space and Biological Resource Overlays.

4. The County shall coordinate with state and federal agencies and departments to ensure that their programs to preserve rare and endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs. This coordination shall be accomplished by notification of development applications and through distributed CEQA documents.

5. The San Bernardino County Museum (Museum) will review and update the Biological Resources Overlay and Open Space Overlay to provide accurate and current spatial data based on rare, threatened, endangered species and the habitats that they rely on. An updated database that integrates CNDDB data with other occurrence data from the Museum and other sources such as the USFWS, CDFG, USFS, BLM, National Park Service, California Native Plant Society to identify areas where biological surveys are required. Overlay maps will identify movement corridors and refuge area for large mammal, migratory species, and desert species dependent on transitory resource based on rainfall. South Coast Wildlands Corridor Project and other data from the resource agencies will be consulted as an information reference base. The wildlife corridor and refuge area map will be used for preparation of biological assessments prior to permitting land use conversion within County jurisdictional areas. The mapping will be included in the Open Space and Biological Resource Overlays. As a federal or state agency revises its database of endangered, threatened, or sensitive species of flora and fauna, the County may publish new Biotic Resources Overlay Maps to reflect new species or a revised distribution of the species already included on the maps without requiring a General Plan Amendment to be adopted by the Board of Supervisors.

CO 2.2 Provide a balanced approach to resource protection and recreational use of the natural environment.

CO 2.3 In addition to conditions of approval that may be required for specific future development proposals, the County shall establish long-term comprehensive plans for the County's role in the protection of native species because preservation and conservation of biological resources are statewide, Regional, and local issues that directly affect development rights. The conditions of approval of any land use application approved with the BR overlay district shall incorporate the mitigation measures identified in the report required by Section 82.13.030 (Application Requirements), to protect and preserve the habitats of the identified plants and/or animals.

Programs

1. Prepare or participate in Habitat Conservation Plans when there is sufficient support of such plans, and adequate funding for their preparation, and a strong likelihood of success.

2. Establish a land ownership transfer program.

3. Establish a land conservation easement program.

4. The County shall work with local communities to improve trash collection, recycling programs, and reduce illegal dumping in unincorporated areas. The County shall sponsor mitigation efforts that minimize landfill growth, reduce trash haul routes that spread litter and increase predator species numbers (i.e., raven or crow in the Desert Region), and reduce illegal dumping of large bulk items (e.g., furniture, appliances, tires, batteries).

5. The County shall participate with Regional plans to improve water quality and habitat that are downstream but may be beyond County limits. The County shall coordinate with Regional plans to minimize degradation of water quality within the County that affects downstream resources and habitats.

CO 2.4 All discretionary approvals requiring mitigation measures for impacts to biological resources will include the condition that the mitigation measures be monitored and modified, if necessary, unless a finding is made that such monitoring is not feasible.

Programs

1. The monitoring program will be designed to determine whether the mitigation measures were implemented and effective.

2. The monitoring program will be funded by the project applicant to ensure compliance with and effectiveness of conditions of approval.

3. The County shall not permit land conversion until adequate mitigation is provided to reduce impacts to less than significant in cases where a Mitigated Negative Declaration is used for CEQA compliance. Direct and growth inducing impacts determined to cause a significant adverse effect on rare, threatened or endangered desert species shall be mitigated by avoidance, habitat restoration or compensated by off-site mitigation and evaluated through a project level EIR. Mitigation will be required for adverse impacts to critical areas around residential land conversion when it can be shown that the indirect effects of pets, associate human activity and other encroachments into sensitive habitats will be significant.

4. The County shall require all new roadways, roadway expansion, and utility installation within the wildlife corridors identified in the Open Space and Biological Resource Overlays to provide suitable wildlife crossings for affected wildlife. Design will include measures to reduce or prevent habitat fragmentation and provide wildlife a means of safe egress through respective foraging and breeding habitats. A qualified biologist will assist with the design and implementation of wildlife crossing including culverts, overcrossings, undercrossings, and fencing.

2. CULTURAL/PALEONTOLOGICAL RESOURCES

GOAL CO 3.	**The County will preserve and promote its historic and prehistoric cultural heritage.**

POLICIES

CO 3.1 Identify and protect important archaeological and historic cultural resources in areas of the County that have been determined to have known cultural resource sensitivity.

Appendix D
Cultural Resources Study

Cultural Resources Study for the City of Ridgecrest Wastewater Treatment Plant Project, Kern and San Bernardino Counties, California

Katie Asselin and Jay Lloyd

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March 2016

MANAGEMENT SUMMARY

The City of Ridgecrest (City) is proposing to construct new wastewater treatment facilities as part of its Wastewater Treatment Plant Project (Project) in Kern and San Bernardino Counties, California. The project requires compliance with the California Environmental Quality Act and Section 106 if the National Historic Preservation Act, which requires that impacts/adverse effects to cultural resources be considered in project planning and analysis.

To meet state and federal requirements, on behalf of the City and under subcontract to Provost and Pritchard Consulting Group, Applied EarthWorks, Inc. (Æ), provided cultural resources services in support of the Project. These services included an archaeological records search and background research, Native American consultation and outreach, archaeological pedestrian survey, documentation of any newly discovered cultural resources, and preparation of this technical report.

The inventory revealed two previously recorded resources - a transmission line (P-15-013824/P-36-021497) and a historic access road (P-15-017353). Four newly identified isolated resources were discovered within the Project's Area of Potential Effects. These include one historical glass fragment (AE-3182-ISO-01), two historic tin cans (AE-3182-ISO-02), and two spatially separate obsidian flakes (AE-3182-ISO-03 and AE-3182-ISO-04).

Neither of the two previously recorded resources has been evaluated for inclusion on either the federal or state registers. However, as currently designed, the project will not impact of effect either resource and no further management is recommended. By convention, the four isolated artifacts are not considered significant resources and are, therefore, not eligible for inclusion in the California Register of Historical Resources or National Register of Historic Places. No further management of these resources is recommended.

A copy of this report and the associated cultural resource records will be transmitted to the Southern San Joaquin Valley Information Center at California State University, Bakersfield and the South Central Coastal Information Center at California State University, Fullerton for inclusion in the California Historical Resources Information System. Field notes and photographs are on file at Æ office in Fresno, California.

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1
INTRODUCTION

The City of Ridgecrest (City) is proposing to construct new wastewater treatment facilities as part of its Wastewater Treatment Plant (WWTP) Project (Project) in Kern and San Bernardino Counties, California (Figure 1-1). The Project will consist of new influent pumps, headworks, operations and maintenance buildings, sludge handling and disposal facilities, and effluent disposal sites which encompass the two project alternatives discussed in the Environmental Impact Report (EIR). However, all the areas encompassed by each alternative are covered by one Areas of Potential Effects (APE) for the purposes of this inventory. The APE encompasses a seven acre area on the Naval Air Weapons Station (NAWS) China Lake just west of the current City WWTP facilities, a 240 acre area of land to the south on City property surrounding the current WWTP facilities, fairgrounds, and adjacent vacant parcels, and a corridor encompassing approximately three miles of existing pipeline that currently connect the northern and southern WWTP facilities where a new pipeline is proposed. The entire APE is 312 acres and includes land in Kern and San Bernardino Counties. The Project lies within Township 26 South, Range 40 East, Sections 14, 23, 26, and 35 and Township 27 South, Range 40 East, Sections 1 and 2 of the Mt. Diablo Base Meridian as depicted on the Ridgecrest North, CA and Ridgecrest South, CA U.S. Geological Survey (USGS) 7.5-minute quadrangles (Figure 1-2).

The project requires compliance with the California Environmental Quality Act and Section 106 if the National Historic Preservation Act, which requires that impacts/adverse effects to cultural resources be considered in project planning and analysis.

To assist the City with their compliance efforts, Applied EarthWorks, Inc. (Æ), under subcontract to Provost and Pritchard Consulting Group, conducted a cultural resources study for the Project. These services included an archaeological records search and background research, Native American consultation and outreach, archaeological pedestrian survey, documentation of any newly discovered cultural resources, and preparation of this technical report.

Æ Senior Archaeologist Jay Lloyd (M.A.), a Registered Professional Archaeologist (RPA), served as project manager, providing technical and administrative oversight for all aspects of the cultural resource investigations. Associate Archaeologist Katie Asselin (M.A., RPA) supervised the cultural resources survey and is the primary author of the technical report. Résumés for key personnel are provided in Appendix A.

The archaeological work documented in this report was carried out to satisfy the requirements of the CEQA and NHPA, and the results are presented in accordance with *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* (Office of Historic Preservation 1990). Following this introduction, Chapter 2 provides information about the natural and cultural setting of the APE. Methods employed to identify cultural resources are discussed in Chapter 3, and Chapter 4 presents the results of Æ's background research and field investigations. A summary of findings and recommendations are offered in Chapter 5. A bibliography of references cited throughout the report is provided in Chapter 6. Personnel

qualifications are detailed in Appendix A. Results of the records search are provided in Appendix B. Details of the Native American outreach efforts are provided in Appendix C. Appendix D contains the record forms for cultural resources discovered during fieldwork.



Figure 1-1 Project vicinity in Kern and San Bernardino Counties, California

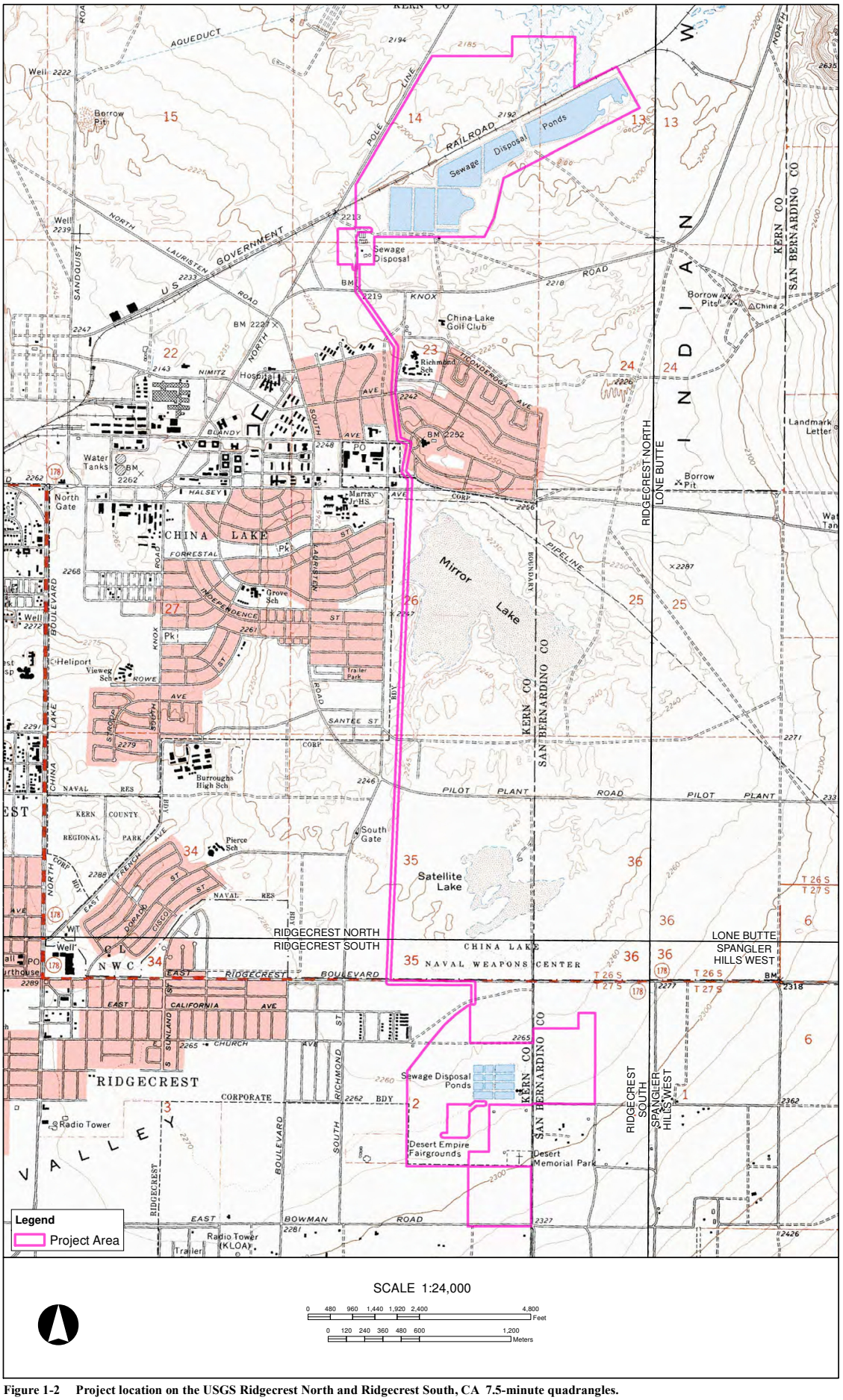


Figure 1-2 Project location on the USGS Ridgecrest North and Ridgecrest South, CA 7.5-minute quadrangles.

2
SETTING

2.1 ENVIRONMENTAL SETTING

The project lies within the northern Mojave Desert, a triangle shaped area bounded by the southern extent of the Sierra Nevada, Garlock Fault, Owens Valley and the Great Basin province to the north and west with the San Andras fault as the boundary to the south (Norris and Webb 1990; Schoenherr 1992). The Mojave extends east into Nevada and Arizona. Average elevation is approximately 3500 feet (1200 meters); however, Death Valley, the lowest elevation in the United States is contained with the Mojave. Vegetation of the area is characterized by Joshua Trees, Creosote Bush and various cacti at warmer, lower elevations with more cold resistant sagebrush and pinyon pine at higher elevations (Schoenherr 1992). Cold resistant vegetation continues into the Great Basin; however, warm weather flora tends to only occur in the Mojave (Schoenherr 1992). The Mojave is a hot desert with very little precipitation, which occurs primarily in the winter months. The dry climate and sandy coarse soils mean vegetation is very drought resistant. This Project is located in the City of Ridgecrest, which lies in the Indian Wells Valley, bounded by the Coso Range to the north, which separates it from the Owens Valley to the north with the El Paso Mountains bounding it to the south.

Although ecologically the Mojave Desert is distinct from the Great Basin, geologically in California the Basin and Range province has also included the area of the eastern Sierra Nevada extending to the Nevada stateline, encompassing both regions (Norris and Webb 1990).

2.2 PREHISTORY AND ARCHAEOLOGY

Various cultural chronologies have been proposed for the Mojave Desert, Western Great Basin, and Sierra Nevada, all of them somewhat applicable to the APE and vicinity. These schemes generally overlap, although regional and local differences make concordance difficult. In order to facilitate discussions of regional prehistory, this document follows Sutton and others (2007) in dividing prehistory up by geologic periods (Pleistocene, Early Holocene, Middle Holocene, and Late Holocene) and using the terms for cultural phases and complexes only when these are useful for noting change within a time period. In keeping with both Sutton and others (2007) and Moratto (1984), Owens Valley is treated culturally as a part of the larger Mojave and Great Basin province, and the terminology for these regions will be given preference over Sierra Nevada terminology.

2.2.1 Terminal Pleistocene (12,000–10,000 B.P.)

Although evidence of earlier occupation is accumulating, the earliest confirmed evidence of humans in much of the Americas comes in the form of Clovis points, distinctive fluted projectile points, identified throughout the Americas. Clovis points are generally recovered from contexts dating to approximately 10,000–8000 B.C. Clovis points have been discovered in the Great Basin, Mojave, and Sierra Nevadas, and on the beaches of Owens Lake (Busby et al. 1980; Moratto 1984; Rondeau 2009). Clovis points in the Mojave and Great Basin are often found in

dry lakebeds, including Owens Lake, and near streams (Rondeau 2009; Sutton et al. 2007). Dating cultural remains to the Terminal Pleistocene is often difficult as most of the recovered Clovis points are isolated occurrences and many of the sites lack datable organic materials or obsidian. Due to these data limitations, it is difficult to say much about the people who inhabited the region during this time, other than that they were likely highly mobile hunter-gatherers, leaving behind little in the way of material remains.

2.2.2 Early Holocene (10,000–8500 B.P.)

Mojave and Great Basin sites dating to the period are typically marked by Lake Mojave and Silver Lake projectile points, numerous bifaces, unifacial tools, crescents, cobble-core tools and ground stone implements (Busby et al. 1980; Sutton et al. 2007). Sometimes referred to as Lake Mojave Culture sites, Early Holocene sites include tools manufactured from a wide range of materials (Basgall and McGuire 1988; Sutton et al. 2007), suggesting that either raw materials were gathered during annual foraging far away from the home base, or raw materials were moved through exchange networks. Marine shell beads appear in the archaeological record, indicating a broad exchange network (Sutton et al. 2007). The type and designs of Early Holocene tools are consistent with long-term curation and transport. Researchers have proposed, variously, that Early Holocene peoples in the region were focused on hunting (and that hunting itself focused on different types of game) or on the gathering of plant materials (Busby et al. 1980; Sutton et al. 2007). It is likely that there was considerable regional variation in subsistence regimes during this period. Data from excavations at the Lubkin Creek site (CA-INY-30), south of Lone Pine, suggest a reliance on large game hunting and high residential mobility during the Early Holocene stretching into the Middle Holocene (Basgall and McGuire 1988).

2.2.3 Middle Holocene (8500–4000 B.P.)

A transition from Early Holocene to Middle Holocene adaptations appears to have occurred during the period from 7000 to 6000 B.C., but for simplicity's sake, the separation between these periods is set at 6000 B.C. Middle Holocene sites conforming to the Pinto Complex cultural pattern are widespread throughout the Mojave Desert and Great Basin by 6000 B.C. These sites exhibit a general continuity of flaked stone tool manufacture and use, although the switch to Pinto points may indicate a shift from reliance on projectiles such as darts to a reliance on thrusting spears (Sutton et al. 2007: 238). Ground stone is relatively common in Middle Holocene sites, indicating that plant foods were increasingly important, though there is evidence of local variation. Sites located near perennial water sources tend to be large, with well-developed middens. These findings may indicate the development of a collector-type subsistence strategy focused on lacustrine and riparian locations, with reliance on logistical forays into the surrounding area and into the Sierra Nevadas (Moratto 1984: 333; Sutton et al. 2007:238–239; Warren 2002).

Data from Basgall and McGuire's excavations at the Lubkin Creek site indicate that the Early Holocene practices, including high residential mobility and a focus on the hunting of large game to the exclusion of plant resources, may have continued through the Middle Holocene in Inyo County, and specifically in the northern Owens Valley (Basgall and McGuire 1988). Bettinger (1975a; 1976) proposed that 3500 B.C. marked the beginning of the Clyde Phase (which Bettinger placed as occurring between 3500 B.C. and 1200 B.C.) in the Owens Valley, during

which base camps were settled on the rivers, with vital resources being collected at logistical camps in the uplands (Garfinkel 1976).

Traditionally, researchers have argued for a hiatus in occupation of the Owens Valley between 6000 and 4000 B.C., but it is likely that this apparent hiatus may reflect a lack of data rather than an actual occupation hiatus (Busby et al. 1980). Interestingly, Sutton and others (2007:241) suggest that there may have been a general hiatus in occupation of the Mojave ca. 3000 to 2000 B.C., a period during which there is evidence of increasing cultural change in the Owens Valley (Basgall and McGuire 1988; Bettinger 1976; Busby et al. 1980). The relationship, if any, between these hiatuses is unclear.

2.2.4 Late Holocene (4000 B.P. to Present)

Sutton and others (2007) describe the Gypsum Complex as the earliest known cultural complex in the northern and western Mojave Desert, dating to ca. 2000 B.C. through A.D. 200. However, Lanning (1963) identifies the onset of the Little Lake phase in the Owens Valley at 3000 B.C. Little Lake sites contain Pinto, Lake Mojave, and Silver Lake projectile points; chipped stone disks, stone saws, core tools, leaf-shaped knives, narrow round-based drills, and milling stones (Moratto 1984:375–376). As described above, Bettinger (1976) identified the onset of an Owens Valley Late Holocene cultural phase that he called the Clyde phase somewhat earlier, in 3500 B.C.

Sutton and others (2007) describe northwestern Mojave (inclusive of Inyo County) sites from this period as being more numerous, but generally smaller in size, than earlier sites. Settlements dating to this period appear to have been centered on drainages. An elaboration of ritual life is attested to by the presence of quartz crystal, paint, and rock art (and a good deal of rock art, specifically petroglyph panels, is present in the volcanic tablelands near Bishop [BLM n.d.; Chalfant 1922]). Large and small game continued to be important to the people of the Mojave (Sutton et al. 2007). Within the Owens Valley, sites dating to this period show continuity with the earlier Little Lake sites, though there is a drop-off in the volume of core tools after 1500 B.C. Around 500 B.C., central California "Middle Horizon" shell beads appear in the Owens Valley, accompanied by pumice shaft smoothers and slate tablets. Accompanying these artifacts are also the Rose Spring projectile points, chipped ovals, and expanding base drills, suggesting changes in the manufacture of goods (Moratto 1984:376). Bettinger (1975b; 1977; see also Garfinkel 1976) argued that the people of the Owens Valley began to more intensively exploit dry land rather than riparian habitats beginning around 1200 B.C. (a period that he termed the Cowhorn Phase, lasting until ca. A.D. 600).

After A.D. 200, the bow and arrow diffused across the western United States (probably ca. A.D. 500 [Justice 2002]), and it appears that populations increased, producing sites based near springs, drainages, and lakeshores. Sites occupied in the period following A.D. 200 typically contain well-developed middens and the remains of residential and utilitarian structures. A variety of artifacts has been recovered from these sites including Eastgate and Rose Spring projectile points (made primarily out of chert or Coso obsidian), stone knives, drills, pipes (possibly indicating changes to ritual activity), bone awls, and an array of milling tools (possibly indicating a greater reliance on a broad range of vegetal foods). Core tools essentially vanished from the toolkit, and

cobble pestles and both steatite and split and punched *Olivella* beads appeared (Moratto 1984:376; Sutton et al. 2007).

Locally, pinyon exploitation appears to have become more important around A.D. 600, and may have been used to compensate for a growing population (Bettinger 1976; Busby et al. 1980:207). Hunting focused on lagomorphs and rodents, possibly indicating that the increased human population had depleted larger game (Busby et al. 1980:205–207; Sutton et al. 2007). The presence of marine shell in sites dating to this period indicates that the study area was part of a large exchange network leading all the way to the coast (Sutton et al. 2007:241). The onset of the Medieval Climatic Anomaly ca. A.D. 950 resulted in the dessication of lakes and the drying of once active drainages (Sutton et al. 2007:242). The changing climate may have pushed populations out of the northern Mojave Desert and into other regions, including the study area (Bouey 1979; Busby et al. 1980:205).

Hester (1973:127) holds that the Late Prehistoric complex (or, more accurately, complexes, as pointed out by Sutton and others [2007:242]) marks the migration of Numic speaking peoples into the northern Mojave area and expanding north and east. This hypothesis is supported by linguistic studies that indicate the arrival of Numic speakers into the Project vicinity ca. A.D. 1000 (Busby et al. 1980:207; Sutton et al. 2007:243). Sites dating to this time contain brownware ceramics, Desert Side-notched and Cottonwood projectile points, and trade beads (Busby et al. 1980:206–207).

Post-A.D. 1000, there is evidence that pinyon increased in importance as a staple food, and that intensification of pinyon use resulted in the re-organization of society around nuclear families by A.D. 1400 (Eerkens 2004; Santy and Eerkens 2010). Winter pinyon-gathering camps dating from A.D. 1300 through the nineteenth century have been identified in the Inyo Mountains (Bettinger 1975a). Further evidence of economic change includes the appearance of broad triangular and leaf-shaped knives, as well as expanded base drills at around A.D. 1300 (Moratto 1984:376).

Additional changes occurred at about A.D. 1840, likely resulting from both the further intrusion of European settlers into California and concurrent social change among the native populations. Artifacts imported from outside Owens Valley, including shell beads, represent late prehistoric types. There is evidence of the entrance into the valley of a small number of Native Californians fleeing European encroachment (Chalfant 1922).

Prehistoric archaeological sites and features that might be expected within the APE include flaked stone scatters (primarily obsidian and chert), ceramic scatters, irrigation structures, hunting blinds, rock art (both pictograms and petroglyphs), and residential sites with well-developed middens.

The Coso Range to the north of the APE is the site of numerous petroglyphs and prehistoric resources, depicting anthropomorphic figures and bighorn sheep (Grant 1968). Site CA-IYN-5491 is also located in the Coso Range and contains the only archaeological deposit of wooden bows known in California and the Great Basin (Hildebrant and Ruby 2004). These were recovered at a small habitation site and were located chached underneath a granite ledge. Dating suggests that these artifacts were approximately 300 years old, being cached at the site before contact with Euro-American settlers (Hildebrandt and Ruby 2004).

Approximately 70 miles to the south of the APE is Antelope Valley where numerous sites could offer more of a context for archaeology in the Mojave Desert. CA-LAN-192, the Lovejoy Springs site, is a deeply stratified large village site that has been extensively excavated and studied (Price et al. 2007). This site shows associations with cultures on the south coast of California. One burial located at the site, dated to 2,700 B.P., is of a child buried with 3,000 *Olivella* shell beads, which are associated with the Santa Barbara Channel (Price et al. 2007). There is also obsidian at the site that is sourced to the Coso volcanic field and dating to 2,700 B.P., suggesting associations and trade networks to the north (Price et al. 2007).

Approximately 35 miles to the southwest of the APE is Kelso Valley located in southeastern Kern County is nestles just to the east of the Sierra Nevada. Two sites were recorded here and contained midden and milling features, pictograph and petroglyph panels, and obsidian (Lloyd 2005). Although the milling features are likely associated with acorn subsistence, which would not be seen further north in the Mojave and Great Basin contexts, the other features could be similar to resources and show associations to sites further north in the project vicinity.

2.3 ETHNOGRAPHY

The project lies within the traditional territory of the Koso, an area that stretches from the Sierra Nevada crest in the west 1,500 miles across the deserts of California and into Nevada. It is one of the largest areas, yet the least populated (Krober 1976). The boundaries are not well defined, but it appears that Ownes Lake was the northern boundary of their territory with the Mono to the north (Kroeber 1976:589). To the south were the Kawaiisu, who occupied a similar habitat, that of the barren resource scarce Mojave Desert, as the Koso (Kroeber 1976). Krober notes that the Coso Range, to the north of the APE, was one of the four successive ranges in the area (Kroeber 1976:590).

Primary subsistence was from the Nevada pine nut and desert sand grass with various seeds and cacti known to be processed and eaten (Kroeber 1976:591-592). Subsistence from local fauna was rare and would have consisted of rabbits, rats, lizards and birds (Kroeber 1976:592).

There has been detailed research conducted within the Coso Range regarding pinyon pine nut explotation (Hildebrant and Ruby 2006). The archaeological record indicated that subsistence reliant on pine nut occurred later in the Owens Valley than other places in the Great Basin, and it has been suggested that this is due to other resources being depleted and population growth (Bettinger 1991). The detailed analysis considered numerous previous studies (Bettinger 1976; 1989; Delacourt 1990; Reynolds 1997), which suggested that subsistence was based on hunting large game during the Newberry period (4,000-1,350 B.P.) and less on pine nut procurement. Hildebrant and Ruby (2006) compare the archaeological assemblages identified during survey efforts in 1998, which included numerous diagnostic projectile points and pinyon pine nut processing features, the dates of which suggest that pine nut processing and subsistence was much more significant during the Newberry period than is suggested by previous studies. Additionally, it appears that pine nut procurement and subsistence continued later into the Haiwee period (1,350-650 B.P.) possibly due to the exploitation of the large game population (Hildebrandt and Ruby 2006).

2.4 HISTORY

Joseph Rutherford Walker was an explorer and expedition leader across the west, becoming the first Euro-American to traverse the Sierra Nevada, over the pass that bears his name, and proceeded into Indian Wells Valley in 1834 (Gilbert 1985). He used this route many times, including in 1843, when he led the Joseph B. Chiles emigrant party, with the first covered wagons to come to California from the east (Di Pol 2013). Walker also served as the guide for Captain John Charles Frémont's expedition that came over Walker Pass (Di Pol 2013).

In the last quarter on the 19th century, Indian Wells Valley was dotted with various stage and freight routes. The first permanent settlement was in 1873 at Coyote Holes; however, the first land patent was not filed until 1894 (Di Pol 2013). In 1905, the announcement was made that Los Angeles aqueduct would be built between 1908 and 1913 and subsequently, the Southern Pacific Railroad built a line from Mojave to Indian Wells Valley in 1909 (Di Pol 2013; Weals 2001).

In 1912, the Robertson family became the first settlers in the Ridgecrest area. After World War I there was an increase in settlers and land patents filed in the area. This influx was focused around the plan to create an irrigation district to bring water into Indian Wells Valley from Mono Lake, as part of the City of Los Angeles' Mono Extension Project (Di Pol 2013).

In 1943, the U.S. Navy established the Naval Ordnance Test Station (NOTS), later to become China Lake Naval Air Weapons Station (NAWS) and the settlement of Ridgecrest grew as a result (Di Pol 2013). The Indian Wells Valley was relatively sparsely populated during the latter half of the 19th century and into the 20th century. Historically, growth in the area was influenced greatly by military installations at China Lake and Inyokern in the last 70 years.

3
METHODS

3.1 RECORDS SEARCH

On June 11, 2015, Æ requested a records search of the California Historical Resources Information System through the Southern San Joaquin Valley Information Center at California State University, Bakersfield and the South Central Coastal Information Center at California State University, Fullerton. The request included any previously recorded sites and cultural resource studies within the APE and 0.5 mile vicinity.

Information Center staff consulted cultural resource location and survey base maps, reports of previous investigations, cultural resource records, the National Register of Historic Places Historic Property Data File (3/18/13), California Historical Landmarks, the California Register of Historical Resources, the California Inventory of Historical Resources, and the California Points of Historic Interest (Appendix B).

3.2 NATIVE AMERICAN OUTREACH

Æ sent a request to the Native American Heritage Commission (NAHC) on June 11, 2015 for a Sacred Lands File search to identify any known Native American Resources in the APE. Æ additionally requested a list of parties that may have interest in the project or knowledge of any unrecorded Native American resources in the area.

On July 1, 2015, Æ sent a letter describing the project and its location to each of the following contacts identified by the NAHC:

- Julie Turner, Secretary, Kern Valley Indian Council;
- Robert Robinson, Co-chairperson, Kern Valley Indian Council;
- Delia Dominguez, Chairperson, Kitanemuk and Yowlumne Tejon Indians;
- John Valenzuela, Chairperson, San Fernando Band of Mission Indians; and,
- Katherine Montes Morgan, Chairperson, Tejon Indian Tribe.

A contact log and copies of the Native American outreach documentation are included in Appendix C.

3.3 PEDESTRIAN SURVEY

Æ Associate Archaeologist Katie Asselin led the pedestrian survey assisted by archaeologists Mark King, Josh Tibbet, Chuck Pansarosa, and Kathleen Jernigan on June 8, 2015, between July 13 and 16, 2015, and on July 22, 2015. The crew surveyed the APE using parallel and meandering transects spaced no more that 15-20 meters apart. The surveyors photographed the APE and survey conditions with a digital camera and collected Global Positioning System (GPS)

data using a Trimble unit. They documented their observations and findings on survey record forms. Copies of photographs, field notes, and GPS data are on file at Æ's office in Fresno, California.

3.4 CULTURAL RESOURCE DOCUMENTATION

When an artifact was encountered that appeared to be of historic age (i.e., 50 years old or older), surveyors marked its position and closely examined the surrounding area for associated artifacts or features. Once the extent of the resource was determined, it was assigned a temporary number and recorded on the appropriate California Department of Parks and Recreation (DPR) forms (523 series). Æ photographed each resource using a digital camera and collected GPS data using a Trimble unit. Copies of the DPR forms are provided in Appendix D.

4
FINDINGS

4.1 RECORDS SEARCH

In its June 24, 2015 response to Æ's records search request, the SSJVIC identified a number of previous cultural resource studies (12) and sites (10) within the APE and 0.5 mile vicinity in Kern County. The SCCIC responded to Æ's records search request on July 1, 2015 and identified four projects and two resources within the APE and 0.5 mile vicinity in San Bernardino County.

When the results were cross referenced, it was deduced that in total there are two previously recorded resources within the Project's APE and nine previously recorded resources within the 0.5 mile vicinity (Table 4-1 and 4-2). The two previously recorded resources include a historic transmission line that has been maintained and still in operation extending through the APE at its southern end in both Kern and San Bernardino Counties (P-15-013824/P-36-021497). The other site is a historic access road leading to the WWTP facilities located on the NAWS China Lake base, adjacent to the northern end of the APE (P-15-017353). This road is still utilized, maintained and is currently paved.

Table 4-1
Previously Recorded Resources within the Ridgecrest WWTP APE

Identifier	Date Recorded	Temporal Association	Type
P-15-013824; P-36-021497	2010	Historic	Structure; Other, transmission line
P-15-017353	2012	Historic	Site; Roads/trails/railroad grades

Table 4-2
Previously Recorded Resources within 0.5 miles of the Ridgecrest WWTP APE

Identifier	Date Recorded	Temporal Association	Type
P-15-011152	2003	Prehistoric	Site; Trail
P-15-011153	2003	Prehistoric	Site; Lithic scatter
P-15-012768	2007	Historic	Site; Privies/dumps/trash scatters
P-15-014686	2011	Prehistoric	Site; Lithic scatter
P-15-014687	2011	Prehistoric/ Historic	Site; Lithic scatter; Historic trash scatter
P-15-015209	1999	Historic	Site; Roads/trails/railroad grades
P-15-017203	2009	Prehistoric/Historic	Site; Privies/dumps/trash scatters (historic); Isolated obsidian flake (prehistoric)
P-15-017778	2012	Historic	Building; Educational building
P-36-004134	1975	Prehistoric	Site; Lithic scatter

Additionally, there are six previously cultural resource studies within the APE and nine previous studies within the 0.5 mile vicinity (Table 4-3). These projects appear to mainly be cultural resources inventories associated with projects on the China Lake NAWS base.

Table 4-3
Previous Cultural Resources Studies within the Ridgecrest WWTP APE and 0.5 Mile of the APE

Report No.	Report Author(s)	Report Date	Report Title
Within APE			
KE-00144	Weaver	1992	Negative archaeological survey report DOT-9-KERN-178, PM 0.0/0.16, 103.51/104.6, Charge Unit 140, EA 212300
KE-02054	Love and Tang	1997	Cultural Resources Overview: Water System Gerneral Plan, Indian Wells Valley Water District, Kern and San Bernardino Counties, CA
KE-02976; SB-05828	Deis and Underwood	2004	Cultural Resources Survey and Evaluation, South Range and Mainsite Management Unit, Naval Air Weapons Station China Lake, CA
KE-04199	Baskerville	2009	South China Lake Solar Farm Project NAWS Cultural Project Number: NAWS-2009-16
KE-04384	Duran, Trevino, and Johnson	2010	Downs Substation Cultural Resources Survey, San Bernardino and Kern Counties, California, Vols. I and II
SB-00278	Panlaqui	1975	Environmental Impact Statement: Archaeological Values, Tract 5875
Within 0.5 Mile of APE			
KE-01547	--	1994	Review of Building Conditions of "Old North Duplexes" – Historic Resource Inventory
KE-02140	Shepherd	1997	Survey, Inventory, and Evaluation of Buildings and Structures at Naval Air Weapons Station, China Lake, Kern County
KE-02736	Shepherd	1999	Demolition of 18 Miles of Abandoned Railroad Track, Naval Air Weapons Station, China Lake, Kern County
KE-03551	Hudlow	2007	A Phase I Cultural Resource Survey for Property, East of Gateway Boulevard, APNs 343-01-27 and 31, Ridgecrest, Kern County, CA
KE-04416	McKenna	2013	Archaeological Survey Report Public Safety Improvements for Three School Sites in the City of Ridgecrest, Kern County, California
KE-04541	Neal	2012	Cultural Resources Inventory Negative Report – High Energy Laser Laboratory, NAWS China Lake
KE-04568	Snow	2012	Murray Middle School Historic Resource Assessment
SB-02762	Weaver	1992	Richmond Road 4-Lane Project
SB-05827	D'Arcangelo	2004	Archaeological Survey of the Southern and Western Portions of the Security Perimeter Fence Line, Naval Air Weapons Station, China Lake.

4.2 NATIVE AMERICAN OUTREACH

In its July 1, 2015 response to Æ's request for information, the NAHC stated that the search of the Sacred Lands File did not indicate the presence of resources within the APE (see Appendix C). Also on July 1, 2015, Æ sent letters describing the Project to the five individuals identified in the NAHC response. These letters were followed up with telephone contact.

On August 5, 2015, Æ received a letter from Colin Rambo the Tribal Historic Preservation Officer of the Tejon Indian Tribe. Mr. Rambo requested that the Tejon be notified if any resources were identified as part of the cultural resources survey and recommends Cultural Resources Sensitivity Training for the Project.

On September 23, 2015, Æ followed up outreach with telephone calls to each of the remaining on the list provided by the NAHC. There have been no additional responses to date. A summary of the Native American outreach efforts and documentation is provided in Appendix C.

4.3 PEDESTRIAN SURVEY

Pedestrian survey was conducted of the entire APE, apart from a small area that was fenced off adjacent to the City of Ridgecrest animal shelter and one of the alfalfa fields that was being irrigated with effluent water. The total area surveyed was 312 acres (Figure 4-1). Survey consisted of parallel and meandering transects spaced no more that 15-20 meters apart.

The survey area was primarily either developed land that had structures, buildings, and/or cultivation on the land, or was typical desert landscape associated with the northern Mojave (Figure 4-2). Ground visibility was highly variable throughout the APE, with some areas heavily vegetated or cultivated (Figure 4-3), with less than five percent visibility; to areas that had excellent visibility between 80-90 percent (Figure 4-4), where the vegetation was sparse and land undeveloped. Vegetation consisted primarily of sagebrush, creosote bush, and low lying desert grasses and weeds. There was an occasional cactus or yucca, but these were very sparse. Soils were sandy and gravely with very few cobbles.

Much of the land situated on China Lake NAWS and associated with pipeline was undeveloped; however, these areas have been impacted by activities on the base and it was noted that there was plenty of modern debris and trash. The lands adjacent to the current City WWTP facilities, west of San Bernardino Boulevard, have been heavily impacted. Much of this area includes effluent disposal facilities, modern dumped debris, and the fairground facilities that appear to have been developed for dirt bike racing (Figures 4-5, 4-6, and 4-7)

The land in San Bernardino County, to the east of San Bernardino Boulevard, and the plot of land on APN 343-014-22 was relatively undisturbed, although there was plenty of modern and borderline historic trash and debris noted throughout (Figure 4-8). Considering this land is adjacent to the local cemetery and a modern housing development, the refuse is a likely a result of modern littering.

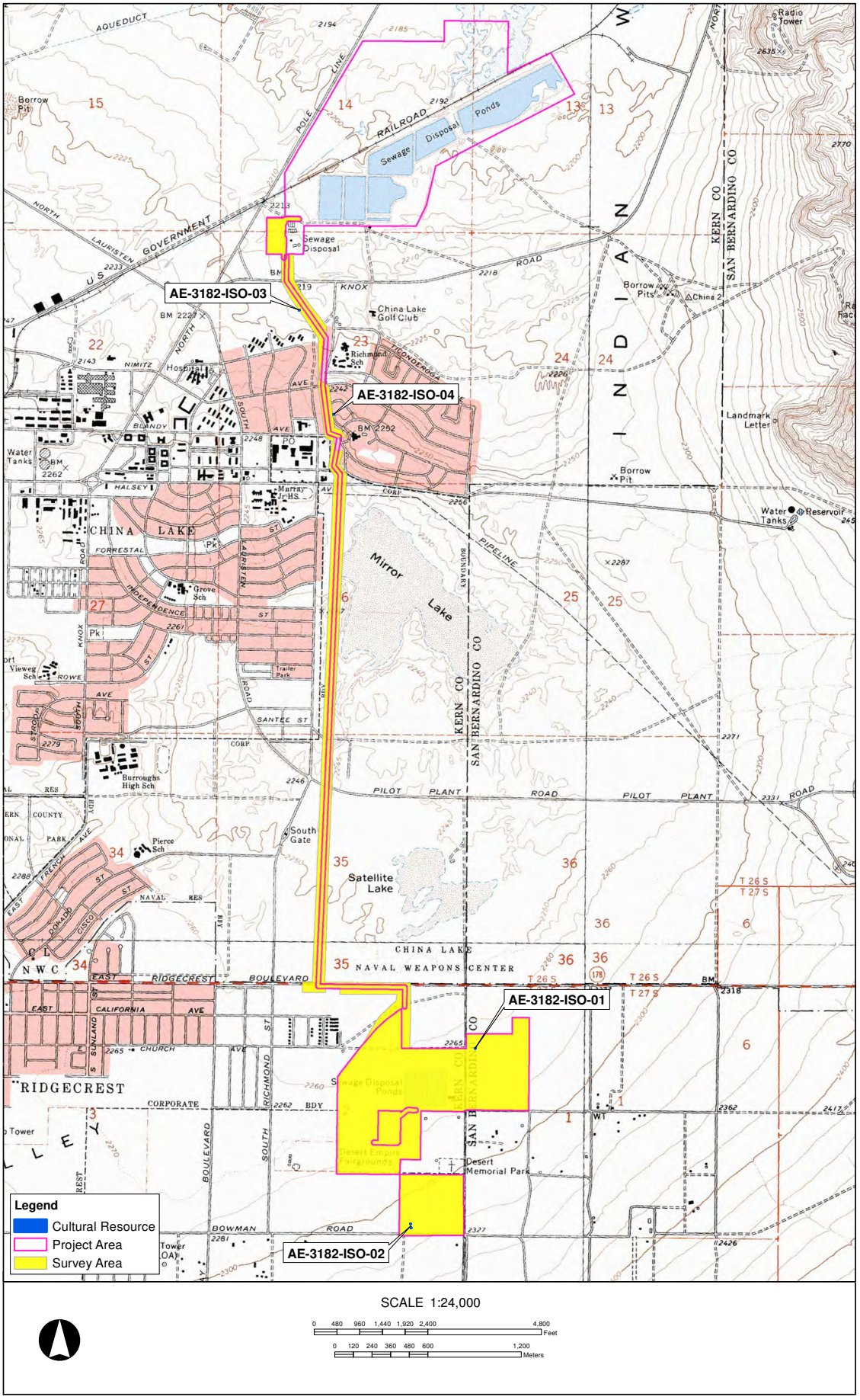


Figure 4-1 Survey coverage and resource locations on the USGS Ridgecrest North and Ridgecrest South, CA 7.5-minute quadrangles.



Figure 4-2 Overview of survey conditions adjacent to the China Lake NAWS WWTP facilities, facing south.



Figure 4-3 Overview of alfalfa field with poor visibility, facing east. These fields were being irrigated with effluent water from the existing City of Ridgecrest WWTP facilities.

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Figure 4-4 Overview of survey conditions on the China Lake NAWS along the pipeline alignment, facing south.



Figure 4-5 Overview of empty ponding basins adjacent to the full basins at the City of Ridgecrest WWTP facilities, facing northwest.



Figure 4-6 Overview of fairgrounds area developed into a dirt bike racing facility, facing west.



Figure 4-7 Overview of typical debris/riprap deposited throughout the APE in the south, adjacent to the City's WWTP facilities, facing north.



Figure 4-8 Overview of survey conditions in the parcels of land in San Bernardino County, east of the City's current WWTP facilities, facing east.

4.4 CULTURAL RESOURCES

The two previously recorded sites identified by the records search were located and brief notes taken, discussed below in section 4.4.1. Æ identified four newly discovered resources during the pedestrian survey (Figure 4-1). All four resources were isolated artifacts and are discussed below in section. Further information is provided on the cultural resources records provided in Appendix D.

4.4.1 P-15-013824/P-36-021497

The Inyokern-Searles-McGen No. 2 115kV transmission line was recorded in 2010 and is composed of T-type utility poles with two cross-members. It runs through the southern portion of the APE, along the east side of County Line Road, and then turns and runs west along the northern project boundary and then bisecting the APE, before continuing west out of the APE.

The resource location was verified in the field as is accurate. As the resource was recently recorded (5/20/2010) and the documentation is still accurate, the site record was not updated. The site record is included as part of the records search results in Appendix B. The transmission line is currently in working order and had been subject to routine maintenance. This resource has not been evaluated for either the California or National Registers.

4.4.2 P-15-017353

This historic road was recorded in 2013 and is a paved access road, orientated north-south, still used to access the current WWTP facilities on NAWS China Lake. The site is 1,265 feet long and has undergone routine maintenance throughout the years; therefore, no original segment of the road has been left undisturbed. It first appears on 1944 engineering drawings for the installation.

The resource location was verified in the field and is accurate; however, since it was recently recorded (8/5/2013) and the site record is still accurate, the site record was not updated. The site record is included as part of the records search results in Appendix B. Additionally, this resource has not been evaluated for either the California or National Registers.

4.4.3 AE-3182-ISO-01

The artifact is a colorless glass base bottle fragment (Figure 4-9). Embossed on the bottom is: "T 120 277/AG[makers mark]/14 A411". The fragment measures 2 ½ inches in diameter and is a ¼ inch thick. It is very weathered and sand blasted and no other artifacts were found in the vicinity. This artifact was located in an area of natural desert with sagebrush and creosote bush and was immediately south of a dirt access road running through the area.



Figure 4-9 Detail of AE-3182-ISO-01, colorless glass bottle base fragment.

4.4.4 AE-3182-ISO-02

This resource consists of two isolated cans dating between 1930 and 1975 (Figure 4-10). Artifact 1 is a vent hole can, with stamped ends and an internal rolled seam. It has been knife cut opened

and measures 2 15/16 inches in diameter by 3 15/16 inches tall, typical of a Carnation brand condensed or evaporated milk can dating between 1930-1975 (Simonis 1997). Artifact 2 is a Hills Brother Coffee can with a key opening and re-closable lid; however, the lid was missing. Some lithography was still visible, namely the "HILLS" name in impact font and all capitalized, which dates this can between 1945-1963 (Lanford and Mills 2006). The can measures 5 inches in diameter by 3 ¼ inches tall.

These two artifacts were located approximately 25 meters apart and there was a sparse array of other tin cans in a 30 by 30 meter area; however, these additional cans all appeared to date to the 1960s-70s and were not considered to be part of any deep historical assemblage. The maximum density of cans was three cans per square meter with the average density of one can per five meters squared. There were various cans noted throughout this parcel and it appears as if these deposits are all a result of casual littering. Additionally, there were no other artifacts, such as glass or ceramic, associated with these can that would indicate it as a historical refuse scatter that was utilized over a long period of time; however, these artifacts have been recorded to indicate that these types of resources (borderline historic cans) are located in the area.



Figure 4-10 Location overview, AE-3182-ISO-02, facing south.

4.4.5 AE-3182-ISO-03

This resource is an isolated obsidian biface thinning flake with a snap fracture (Figure 4-11). Its dimensions are 2.3 x 1.3 x 0.2 centimeters. It was located in an area of natural desert vegetation, primarily sagebrush with sparse grasses and a few creosote bushes. It was adjacent to residential houses to the south and a recreational vehicle park to the east and it appears this entire area has been disturbed from these adjacent developments. No other artifacts were observed in the vicinity.

4.4.6 AE-3182-ISO-04

This resource is an isolated obsidian biface thinning flake fractured down the middle (Figure 4-12). Its dimensions are 4.3 x 2.5 x 0.6 centimeters. It appears large for a secondary flake and it could have been a primary flake, but there is no cortex present. Additionally, one edge may have been utilized. It was located approximately 10 meters east of a paved road and in an area dominated by tumbleweed and that appears to have been previously disturbed with push piles and debris present. No other artifacts were observed in the vicinity.



Figure 4-11 Detail AE-3182-ISO-03, obsidian biface thinning flake.



Figure 4-12 Detail AE-3182-ISO-04, obsidian biface thinning flake.

5
SUMMARY AND RECOMMENDATIONS

5.1 SUMMARY OF INVESTIGATIONS

The City proposed to build new waste water treatment facilities and possibly three miles of pipeline in the city of Ridgecrest in northeastern Kern County and San Bernardino County. The Project is subject to CEQA and Section 106 of the NHPA. Accordingly, Æ conducted background research, requested and reviewed the archaeological records search, contacted the Native American Heritage Commission, and performed a pedestrian survey to identify cultural resources within the APE.

A records search of the California Historical Resources Information System performed by the regional information centers revealed that approximately 80 percent of the APE has been previously surveyed. The records search also revealed that there were two previously recorded resources within the APE, the Inyokern-Searles-McGen No. 2 115kV transmission line (P-15-013824/P-36-021497) and a historic road (P-15-017353). Æ's pedestrian survey identified and documented four previously unrecorded resources, all isolated artifacts: one historical glass fragment (AE-3182-ISO-01), two historic tin cans (AE-3182-ISO-02), and two spatially separate obsidian flakes (AE-3182-ISO-03 and AE-3182-ISO-04).

5.2 MANAGEMENT RECOMMENDATIONS

5.2.1 Previously Recorded Resources

Neither the Inyokern-Searles-McGen No. 2 115kV transmission line (P-15-013824/P-36-021497) or the historic road (P-15-017353) have been evaluated for eligibility to the California Register of Historical Resources. Although both resources intersect with the APE, neither will be impacted or effected by the project. The pipeline will pass under P-15-013824/P-36-021497 and will not alter its location or setting. As noted in Chapter 4, P-15-017353 is currently used to access the existing treatment plant. As currently designed, the project will continue to use the road to access the plant but will not alter its configuration or location. Further, as noted on the Primary form "No portion of this road is left undisturbed, as decades of road maintenance has been taking place on the paved road itself and its dirt road shoulders." Because neither resource will be impacted or effected by the project, no further management is required.

5.2.2 Isolated Artifacts

Isolated artifacts by themselves are not eligible for listing in the CRHR because they lack association and context with other archaeological materials. Recording the physical description and location exhaust their research potential. Therefore, isolates AE-3182-ISO-01, AE-3182-ISO-02, AE-3182-ISO-03, and AE-3182-ISO-04 are not considered eligible for listing on the California Register of Historical Resources.

5.2.3 Human Remains

If human remains are uncovered, or in any other case where human remains are discovered, the Kern or San Bernardino (where applicable) County Coroner is to be notified to arrange their proper treatment and disposition. If the remains are identified – on the basis of archaeological context, age, cultural associations, or biological traits – as those of a Native American, California Health and Safety Code 7050.5 and Public Resource Code 5097.98 require that the coroner notify the NAHC within 24 hours of discovery. The NAHC will then identify the Most Likely Descendant who will be afforded an opportunity to make recommendations regarding the manner in which the remains are treated.

6
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2005 *Final Eligibility and Effects Assessment at CA-LAN-192, Stephen Sorenson Park, Los Angeles County, California.* Applied EarthWorks, Inc., Fresno, California. Prepared for Rincon Consultants, Inc., Ventura, California. Submitted to Community Development Commission of the County of Los Angeles, Monterey Park, California.

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APPENDIX A

Personnel Qualifications

JAY B. LLOYD

Senior Archaeologist

Areas of Expertise

- Cultural resources management
- California archaeology
- Inventory and excavation strategies

Years of Experience

- 18

Education

M.A., Linguistics, University of California, Santa Cruz, 2000

B.A., Anthropology, California State University, Fresno, 1998

B.A., Linguistics, California State University, Fresno, 1998

Registrations/Certifications

- Register of Professional Archaeologists (2006)
- Paleontologic Site Monitor Certification, Fossil Discovery Center (2011)

Permits/Licensure

- Principal Investigator, California BLM Statewide Cultural Resources Use Permit CA-15-29

Professional Affiliations

- Society for American Archaeology
- Society for California Archaeology
- Fresno County Archaeological Society

Professional Experience

2000–	Senior Archaeologist (2007–), Staff Archaeologist (2001–2007), Archaeological Technician (2000–2001), Applied EarthWorks, Inc., Fresno, California
2000	Adjunct Faculty Member, Reedley College, Reedley, California
1997–1998	Archaeological Field Technician for various cultural resource management firms throughout California

Technical Qualifications

Mr. Lloyd has been involved in cultural resources management throughout California for 18 years. As a senior archaeologist, he manages numerous simultaneous projects throughout the state. In this capacity, Mr. Lloyd ensures compliance with federal and state laws and regulations, and directs the work of technical staff and subcontractors. Additionally, he is responsible for project design and management; data acquisition; field supervision; technical reporting; and Native American coordination and consultation. Mr. Lloyd has worked on dozens of archaeological projects throughout California, including the Sierra Nevada and Cascade ranges, Central Valley, Central Coast, and Mojave Desert regions. He has supervised survey, extended survey, testing and evaluation, and data recovery projects at both prehistoric and historical sites. Additionally, Mr. Lloyd has authored and contributed to numerous National Historic Preservation Act Section 106 and California Environmental Quality Act compliance documents. He is proficient in laboratory sorting, cataloging, and artifact classification and has particular experience with the typologies of *Olivella* and *Haliotis* beads and ornaments.

KATIE ASSELIN

Associate Archaeologist

Areas of Expertise

- California archaeology
- Field survey and methodology
- Cultural resource management
- Wildland fire and fire effects on cultural resources
- Great Basin archaeology

Years of Experience

- 7

Education

M.A., Archaeology, University of Manchester, 2009

B.A., Anthropology, University of California, Berkeley, 2006

Registrations/Certifications

- Register of Professional Archaeologists (2014)

Permits/Licensure

- Field Director, California BLM Statewide Cultural Resources Use Permit CA-15-29

Professional Affiliations

- Society for California Archaeology

Professional Experience

2014–	Associate Archaeologist, Applied EarthWorks, Inc., Fresno, California
2012–2014	Archaeological Technician/Crew Leader, USDA Forest Service, Eldorado National Forest, Camino, California
2011–2012	Archaeological Technician, Great Basin Institute, Reno, Nevada
2008–2011	Field Technician, Kautz Environmental Consultants, Inc., Reno, Nevada
2006	Lab Volunteer, Archaeological Research Facility, University of California, Berkeley

Technical Qualifications

Katie Asselin has been involved in California archaeology since 2004 and has worked as a professional archaeologist since 2008. She has extensive experience with historic and prehistoric resources of the Sierra Nevada and Great Basin. Ms. Asselin has served as field supervisor, archaeologist, crew chief, and field technician for projects throughout California. She has been responsible for overseeing fieldwork, developing research designs, and preparing technical reports. Additionally, Ms. Asselin has completed the Federal Law Enforcement Training Center's Archaeological Resource Protection Program and is knowledgeable about Archaeological Resource Preservation Act regulations, violations, and writing damage assessments. While with the USDA Forest Service, she was a qualified firefighter and acted as an archaeologist protecting sites on the fire line and assessing post-burn conditions to recommend emergency mitigation measures. Currently, Ms. Asselin is completing her post-baccalaureate certificate in Geographic Information Systems and is well-versed in GIS and its applications in cultural resource management.

APPENDIX B

Records Search Results

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

FRESNO KERN KINGS MADERA TULARE

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 46 MEC
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289 FAX (661) 654-2415
E-mail: ssjvic@csub.edu

6/24/2015

Mary Baloian
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

Re: Ridgecrest Waste Water Treatment Plant
Records Search File No.: 15-250

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Ridgecrest North and Ridgecrest South USGS 7.5' quads. The following reflects the results of the records search for project area the 0.5 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☐ shapefiles ☒ hand-drawn maps

Resources within project area:	P-15-013824, 017353
Resources within 0.5 mile radius:	P-15-011152, 011153, 012768, 014686, 014687, 015209, 017203, 017778
Reports within project area:	KE-00144, 02054, 02976, 04199, 04384
Reports within 0.5 mile radius:	KE-01547, 02140, 02736, 03551, 04416, 04541, 04568

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Resource Digital Database Records:	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Report Digital Database Records:	☒ enclosed	☐ not requested	☐ nothing listed	☐ not available
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed	
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed	
OHP Historic Properties Directory:	☒ enclosed	☐ not requested	☐ nothing listed	
Archaeological Determinations of Eligibility:	☒ enclosed	☐ not requested	☐ nothing listed	
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed	

Caltrans Bridge Survey: Not available at SSJVIC; please see http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC

Shipwreck Inventory: Not available at SSJVIC; please see http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Celeste M. Thomson
Coordinator

South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395 / FAX 657.278.5542
sccic@fullerton.edu
California Historical Resources Information System
Orange, Los Angeles, and Ventura Counties

7/1/2015 Records Search File No.: 15182.1233

Mary Baloian
Applied EarthWorks, Inc
1391 W Shaw Ave, Ste.C
Fresno CA 93711

Re: Ridgecrest Waste Water Treatment Plant, 1 Administrative Circle, Ridgecrest, CA

The South Central Coastal Information Center received your records search request for the project area referenced above, located on the Lone Butte, CA; Ridgecrest North, CA; Ridgecrest South, CA; and Spangler Hills West, CA USGS 7.5' quadrangles. The following reflects the results of the records search for the project area and a ½-mile radius:

As indicated on the data request form, the locations of reports and resources are provided in the following format: ☒ custom GIS maps ☐ shape files

Resources within project area: 1	30-021497
Resources within ½-mile radius: 1	SEE ATTACHED LIST
Reports within project area: 1	SB278
Reports within ½-mile radius: 3	SEE ATTACHED LIST

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Digital Database (spreadsheet):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database (spreadsheet):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Historic Properties Directory:	☐ enclosed	☐ not requested	☒ nothing listed

Archaeological Determinations of Eligibility:	☐ enclosed ☐ not requested ☒ nothing listed
Historical Maps:	☒ enclosed ☐ not requested ☐ nothing listed
Ethnographic Information:	☒ not available at SCCIC
Historical Literature:	☒ not available at SCCIC
GLO and/or Rancho Plat Maps:	☒ not available at SCCIC
Caltrans Bridge Survey:	☒ not available at SCCIC; please go to http://www.dot.ca.gov/hq/structur/strmaint/historic.htm
Shipwreck Inventory:	☒ not available at SCCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp
Soil Survey Maps: (see below)	☒ not available at SCCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System,

Lindsey Noyes
Lead Staff Researcher

Enclosures:

(X) Custom Maps – 2 pdf pages

(X) Resource Database Printout (list) – 1 pdf page

(X) Resource Database Printout (details) – 2 pdf pages

(X) Resource Digital Database (spreadsheet) – 2 lines

(X) Report Database Printout (list) – 1 pdf page

(X) Report Database Printout (details) – 4 pdf pages

(X) Report Digital Database (spreadsheet) –4 lines

(X) Resource Record Copies (all) – 22 pdf pages

(X) Historical Maps – 1 pdf page

(X) Invoice #15182.1233

APPENDIX C

Native American Consultation

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

June 29, 2015

Jay Lloyd
Applied Earthworks, Inc.
1391 West Shaw Avenue, Suite C
Fresno, CA 93711

Sent by Fax: (559) 229-2019
Number of Pages: 2

Re: Ridgecrest Waste Water Treatment Plant, Kern County.

Dear Mr. Lloyd,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

Native American Contact List
Kern County
June 26, 2015

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
115 Radio Street
Bakersfield , CA 93305
deedominguez@juno.com
(626) 339-6785

Yowlumne
Kitanemuk

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
P.O. Box 401
Weldon , CA 93283
brobinson@iwvisp.com
(760) 378-4575 Home
(760) 549-2131 Work

Tubatulabal
Kawaiisu
Koso
Yokuts

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax

Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Tejon Indian Tribe
Katherine Montes Morgan, Chairperson
1731 Hasti-acres Drive, Suite
Bakersfield , CA 93309
kmorgan@tejontribe.net
(661) 834-8566

(661) 834-8564 Fax

Yowlumne
Kitanemuk
Kawaiisu

Kern Valley Indian Council
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, CA 93240
(661) 366-0497
(661) 340-0032 Cell

Southern Paiute
Kawaiisu
Tubatulabal
Koso
Yokuts

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Ridgecrest Waste Water Treatment Plant, Kern County.

Applied EARTHWORKS Inc.

1391 W. Shaw Ave., Suite C
Fresno, CA 93711-3600
O: (559) 229-1856 | F: (559) 229-2019

EXAMPLE

July 1, 2015

Katherine Montes Morgan, Chairperson
Tejon Indian Tribe
1731 Hasti Acres Drive #108
Bakersfield, CA 93309

RE: City of Ridgecrest Waste Water Treatment Plant Project, Kern and San Bernardino Counties, California.

Ms. Katherine Montes Morgan,

Applied EarthWorks, Inc. (Æ), under contract to Provost and Pritchard Consulting Group, is providing cultural resources services to the City of Ridgecrest (City) in support of improvements to the local wastewater treatment plant, just east of the city in Kern and San Bernardino Counties, California. The project has two alternatives. Alternative 1 consists of a new treatment facility being constructed on approximately 5 acres of land on the China Lake Naval Air Weapons Station (NAWS) base. Alternative 2 is located on City and San Bernardino County land and consists of a new treatment facility, waste water treatment ponds, and approximately 3 miles of pipeline to connect this new facility with the existing facilities on the China Lake NAWS base. On behalf of the City of Ridgecrest, we are conducting Native American consultation and performing a cultural resources inventory for the project, which includes the areas encompassed in both alternatives. This project is subject to the requirements of the California Environmental Quality Act (CEQA).

The project area lies within Township 26 South, Range 40 East, Sections 14, 23, 26, 35, and 36 and Township 27 South, Range 40 East, Sections 1 and 2 as depicted on the Ridgecrest North, CA and Ridgecrest South, CA 7.5-minute USGS quadrangles (see attached map). A search of the Native American Heritage Commission (NAHC) Sacred Lands File identified no known resources within the project area. A records search of the California Historic Resources Information System was requested for the project. There were 10 cultural resources identified within the project area and 0.5 mile vicinity. Of these 10 resources, two (2) were located within the project area and both of these resources are historic. Of the remaining eight (8) resources that are within 0.5 miles of the project area, three (3) are historic, four (4) are prehistoric, and one (1) contained both historic and prehistoric elements.

The NAHC provided your name and address as someone who might have information on sacred or special sites in the project area. If you have any information on the location and character of Native American cultural resources in the area, have any questions about the project, or would like more information, please do not hesitate to contact me by phone (559) 229-1856, email (kasselin@appliedearthworks.com), or send a letter to my attention. I would appreciate any information

you might provide. Be assured that any locations of archaeological sites, cemeteries, or sacred places will be treated confidentially, as required by law, and not disclosed in any document available to the general public. Thank you.

Sincerely,



Katie Asselin, M.A., RPA
Associate Archaeologist

encl.: Project Location Map

Organization	Title	Name	Position	Letter	E-mail	Phone	Summary of Contact
Native American Heritage Commission	Ms.	Katy Sanchez	Program Analyst	6/11/2015			In a letter dated 6/29/15, the NAHC stated that there are no known resources within the project area. The NAHC also sent us a list of five Native American contacts.
Kern Valley Indian Council	Mr.	Robert Robinson	Co-Chairperson	7/1/2015		9/23/2015	Called and was unable to leave a message.
Kern Valley Indian Council	Ms.	Julie Turner	Secretary	7/1/2015		9/23/2015	Called and left a message. No response to date.
Kitanemuk and Yowlumne Tejon Indians	Ms.	Delia Dominguez	Chairperson	7/1/2015		9/23/2015	Called and left a message. No response to date.
San Fernando Band of Mission Indians	Mr.	John Valenzuela	Chairperson	7/1/2015		9/23/2015	Called and was unable to leave a message.
Tejon Indian Tribe	Ms.	Katherine Montes Morgan	Chairperson	7/1/2015			Letter was received on 8/5/15 from Mr. Colin Rambo on behalf of Tejon. The tribe would like to be informed if any resource were identified as part of the survey and recommends cultural resource sensitivity training for the project.

TEJON
INDIAN TRIBE

5 August 2015

Katie Asselin, M.A., RPA
Associate Archaeologist
Applied Earthworks, Inc.
1391 W Shaw Ave., Suite C
Fresno, California 93711-3600

RE: City of Ridgecrest Waste Water Treatment Plant Project, Kern and San Bernardino Counties, California

Dear Ms. Asselin,

My name is Colin Rambo, and I was hired by the Tejon Indian Tribe ("Tejon") for the purpose of establishing their Tribal Historic Preservation Office ("THPO"). Further, Tejon's Chairperson, Kathryn Montes Morgan, has delegated to me the authority to represent Tejon in any tribal consultation concerning cultural resources.

Thank you for inviting Tejon to comment on the City of Ridgecrest Waste Water Treatment Plan Project (the "Project") proposed by the Provost and Pritchard Consulting Group either within the City of Ridgecrest or within the boundaries of the China Lake Naval Air Weapons Station ("NAWS") base, with the City of Ridgecrest serving as lead agency for the purposes of the California Environmental Quality Act ("CEQA").

Tejon is not presently aware of any undocumented Tribal Cultural Resources[1] ("TCRs") within or near the Project Area that could be considered potentially eligible for listing on the California Register of Historical Resources ("CRHR"). Since the Project's California Historical Resource Information System ("CHRIS") records search identified 4 prehistoric and 1 multicomponent resources within a 0.5-mile radius of the Project Area, **Tejon would very much like to know if any potential TCRs were identified during Applied Earthwork's Phase I Survey/Inventory (providing Tejon with a copy of the survey report would suffice).** Furthermore, thank you for informing us of the negative results of the California Native American Heritage Commission ("NAHC") Sacred Lands File search.

While our records and GIS sensitivity models indicate that the greater Ridgecrest area is moderately to highly sensitive (based on a 3-point scale from low to moderate to high) for TCRs, it is apparent that a large portion of the Project Area has been heavily disturbed from urban and/or military development. Nevertheless, portions of the Project Area also appear to be previously undeveloped. Subsequently, the potential to inadvertently unearth potential TCRs and Native American human remains during the Project still exists. Subsequently, **Tejon would appreciate it if Applied Earthworks would be willing to mention and/or recommend our Cultural Resource Sensitivity Training ("CRST") program to the Project proponent and/or lead agency**.

[1] Tribal Cultural Resources ("TCRs") are defined in California State Assembly Bill 52 (which was signed into law by Governor Brown on 25 September 2014) as: "Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe".

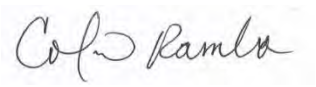
Incidentally, Tejon was recently awarded an Institute of Museum and Library Services ("IMLS") grant to build an archaeological collections repository (pursuant to 36 CFR 79), which we expect to have operational by 2 November 2015. The driving force behind our CRST program is the fact that it provides a forum for Tejon's THPO staff to *personally* encourage construction personnel to report any potential TCRs to project archaeologists and Tejon so that they can be properly recorded and curated at Tejon's future repository. Moreover, Tejon's repository will serve as the foundation for a future Tejon Museum/Cultural Center, and we are hoping to grow our collection via the culturally appropriate and cost-free curation of inadvertently discovered TCRs that might otherwise be looted. While Tejon is committed to curating inadvertently discovered TCRs for free, we do charge a flat-rate fee of $300 per CRST course to cover the expenses of providing the course.

Tejon's CRST courses have been interpreted by previous participants as "environmental/cultural resource regulation compliance liability insurance for construction crews," and have been received very favorably for their ability to provide hands-on training for TCR-identification. Tejon's CRST courses provide a basic, enjoyable, and easy-to-understand "instruction manual" for construction crews that: (1) defines cultural resources and TCRs with reference pictures coupled with a sample artifact collection; (2) provides a brief historical overview of Kern County that spans the lifeways of the local indigenous peoples (i.e. the prehistoric or archaeological context), through the period of European contact with the local indigenous peoples (i.e. the ethnohistoric or protohistoric context), and concludes with a brief overview of the historic context of Kern County; (3) summarizes all federal, state, and local laws, executive orders, and environmental regulations that pertain to cultural resources, TCRs, and/or require tribal consultation; and, most importantly, (4) provides a protocol for construction personnel to follow in the event that TCRs and/or human remains are unearthed during a construction project, which ensures that a project remains in compliance with the applicable environmental regulations concerning the inadvertent discovery of cultural resources and/or human remains. Our CRST courses typically last one hour and are usually conveyed in-person by Tejon's THPO Staff to construction personnel either at a given project site or at a preconstruction or environmental health and safety meeting prior to construction.

Please let me know if the Project proponent and/or lead agency express an interest in having Tejon provide a CRST course for the Project; alternatively, they can feel free to contact me directly. Additionally, we hope that Applied Earthworks will consider curating any future collections (especially prehistoric/ethnohistoric collections originating from South-Central California) at our soon-to-be operational repository. Should anyone from Applied Earthworks have any questions about our repository, please have them contact me.

Thank you for including Tejon in the consultation process. I look forward to working with your office in the future. Please do not hesitate to contact me if you have any questions, comments, or concerns.

Respectfully,



Colin Rambo, B.A.
Tribal Historic Preservation Technician
Tejon Indian Tribe
colin.rambo@tejontribe.net

APPENDIX D

Cultural Resource Record Forms

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # P-15-013824
HRI #
Trinomial CA-KER-7729H
NRHP Status Code

Other Listings
Review Code Reviewer Date

*Resource Name or #: SCE-R-2

P1. Other Identifier: Inyokern-Searles-McGen No. 2 115kV
*P2. Location: ☒ Not for Publication ☐ Unrestricted
*a. County: Kern, San Bernardino and (P2b and P2c or P2d. Attach a Location Map as necessary.)
*b. USGS 7.5' Quad: See continuation.
c. Address: N/A City: N/A Zip: N/A
d. UTM: See continuation sheet. (G.P.S.).
e. Other Locational Data:

*P3a. Description: The line is composed of T-type utility poles with two cross-members. The observed pole, along with several neighboring poles, leans slightly to the east. The upright is creosoted and has a basal diameter of approximately 13 inches. The cross-members are a lighter color, and may be newer than the upright. The line has a total of six conductors: one with four ceramic insulator disks at either end and above the top cross-member, one with four insulator disks mounted on a bracket on the east side of the top of the upright, one at either end and above the lower cross-member with two ceramic insulator disks, and one attached directly to the east side of the pole about half way from the surface to the lower cross-member. Both cross-members are braced with steel braces. Braces and cross-members are both attached on the south side of the pole. Both cross-members are labeled "HIGH VOLTAGE" on both sides near the middle of their span. The signs are black text on a yellow field. The spacing between poles is approximately 280 feet. The observed pole has an identification tag numbered "89607" and a date nail marked "45".

*P3b. Resource Attributes: AH16. Other
*P4. Resources Present: ☐Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)



P5b. Description of Photo:
Single pole overview; view due north; frame number 0161.

*P6. Date Constructed/Age and Sources:
☒Historic ☐Prehistoric ☐Both

*P7. Owner and Address:
Bureau of Land Management,
300 South Richmond Ave.,
Ridgecrest, CA 93555

*P8. Recorded by:
O. Ford, G. Burns, J. Grounds
Epsilon Systems Solutions, Inc.
901 N. Heritage Dr., Ste. 204
Ridgecrest, CA 93555

*P9. Date Recorded: 5-20-2010

*P10. Survey Type: Pedestrian; see Remarks (A14)

*P11. Report Citation: *Downs Substation Project Cultural Resources Survey, San Bernardino and Kern Counties, California*, by Christopher A. Duran (2010).

*Attachments: ☐NONE ☒ Location Map ☐Sketch Map ☒Continuation Sheet ☐Building, Structure, and Object Record
☐ Archaeological Record ☐District Record ☒Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # P-15-013824
HRI #
Trinomial CA-KER-7729H

 Resource Name or #: SCE-R-2

L1. Historic and/or Common Name: Inyokern-Searles-McGen No. 2 115kV
L2a. Portion Described: ☐ Entire Resource ☐ Segment ☒ Point Observation **Designation:** Pole 89607
b. Location of point or segment: Third pole on line after line direction changes south from substation on State Highway 178.

L3. Description: The line is composed of T-type utility poles with two cross-members. The observed pole, along with several neighboring poles, leans slightly to the east. The upright is creosoted and has a basal diameter of approximately 13 inches. The cross-members are a lighter color, and may be newer than the upright. The line has a total of six conductors: one with four ceramic insulator disks at either end and above the top cross-member, one with four insulator disks mounted on a bracket on the east side of the top of the upright, one at either end and above the lower cross-member with two ceramic insulator disks, and one attached directly to the east side of the pole about half way from the surface to the lower cross-member. Both cross-members are braced with steel braces. Braces and cross-members are both attached on the south side of the pole. Both cross-members are labeled "HIGH VOLTAGE" on both sides near the middle of their span. The signs are black text on a yellow field. The spacing between poles is approximately 280 feet. The observed pole has a identification tag numbered "89607" and a date nail marked "45".

L4. Dimensions:
a. Top Width: 9 feet 5 inches
b. Bottom Width: 13 inches
c. Height or Depth: Approximately 38 feet.
d. Length of Segment:

L5. Associated Resources:
Runs parallel to SCE-R-1, and located south of the Southern California Edison substation on SH 178.

L6. Setting: The utility line runs through creosote bush scrub community heavily dominated by creosote (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*). The area is flat with sandy soil.

L4e. Sketch of Cross-Section (include scale) **Facing:** North



L7. Integrity Considerations: The utility poles are subject to regular maintenance. Poles are marked with aluminum tags indicating that they were last treated with chemical preservative in 1995.



L8b. Description of Photo, Map, or Drawing
Pole 89607, facing south.

L9. Remarks:

L10. Form Prepared by:
O. Ford, G. Burns, J. Grounds
Epsilon Systems Solutions, Inc.
901 N. Heritage Dr., Ste. 204
Ridgecrest, CA 93555

L11. Date: 5-20-2010

*Recorded by: Christopher Duran *Date: 5-20-10 ☒ Continuation ☐Update

P2b. USGS Quads:

Trona West (1983)
Westend (1973)
Lone Butte (1973)
Sprangler Hills West (1973)
Ridgecrest South (1973)

P2b. PLSS:

San Bernardino County
T26S R43E Sec. 18, 19, 30, 31
T26S R43E Sec. 6
T26S R42E Sec. 1
T26S R42E Sec. 12, 13, 14, 15, 22, 28, 29, 30,
T26S R41E Sec. 25, 26, 27, 32, 33, 34
T26S R41E Sec. 5, 6
T27S R40.5 Sec. 6
T27S R40E Sec. 1

Kern County
T27S R40E Sec. 2, 3, 4

P2d. UTM:

All UTMs in NAD 83, Zone 11
Point A. 465171mE/ 3958044mN
Point B. 463681mE/ 3953280mN
Point C. 461921mE/ 3948834mN
Point D. 458353mE/ 3945736mN
Point E. 456092mE/ 3945068mN
Point F. 452761mE/ 3944738mN
Point G. 446954mE/ 3942878mN
Point H. 444565mE/ 3942221mN
Point I. 440948mE/ 3941840mN
Point J. 437665mE/ 3942252mN

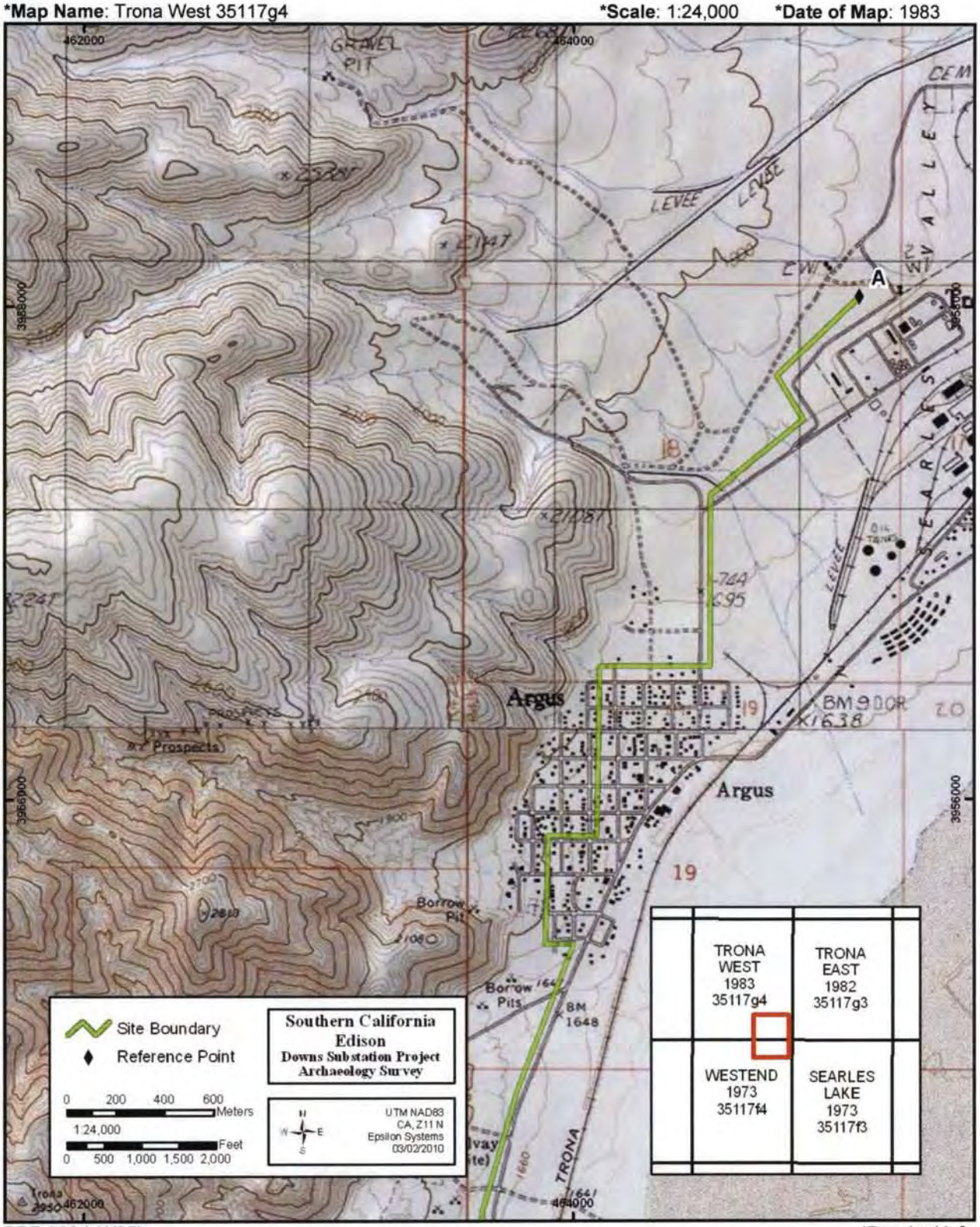
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

*Resource Name or #: SCE-R-2

*Map Name: Trona West 35117g4 *Scale: 1:24,000 *Date of Map: 1983



DPR 523J (1/95)

*Required information

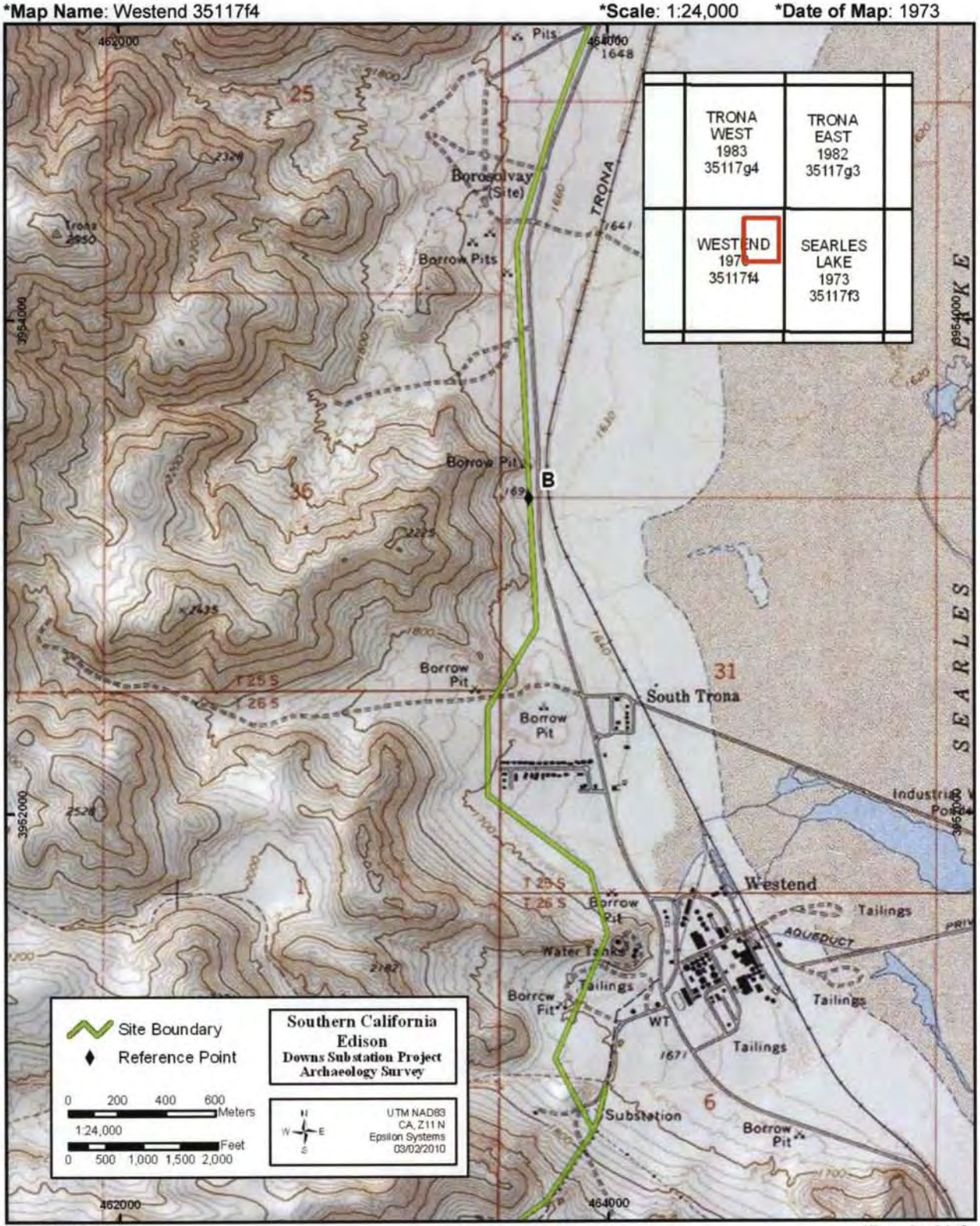
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # HRI# P-15-013824
Trinomial CA-KER-7729H

 *Resource Name or #: SCE-R-2

*Map Name: Westend 35117f4 *Scale: 1:24,000 *Date of Map: 1973



*Required information

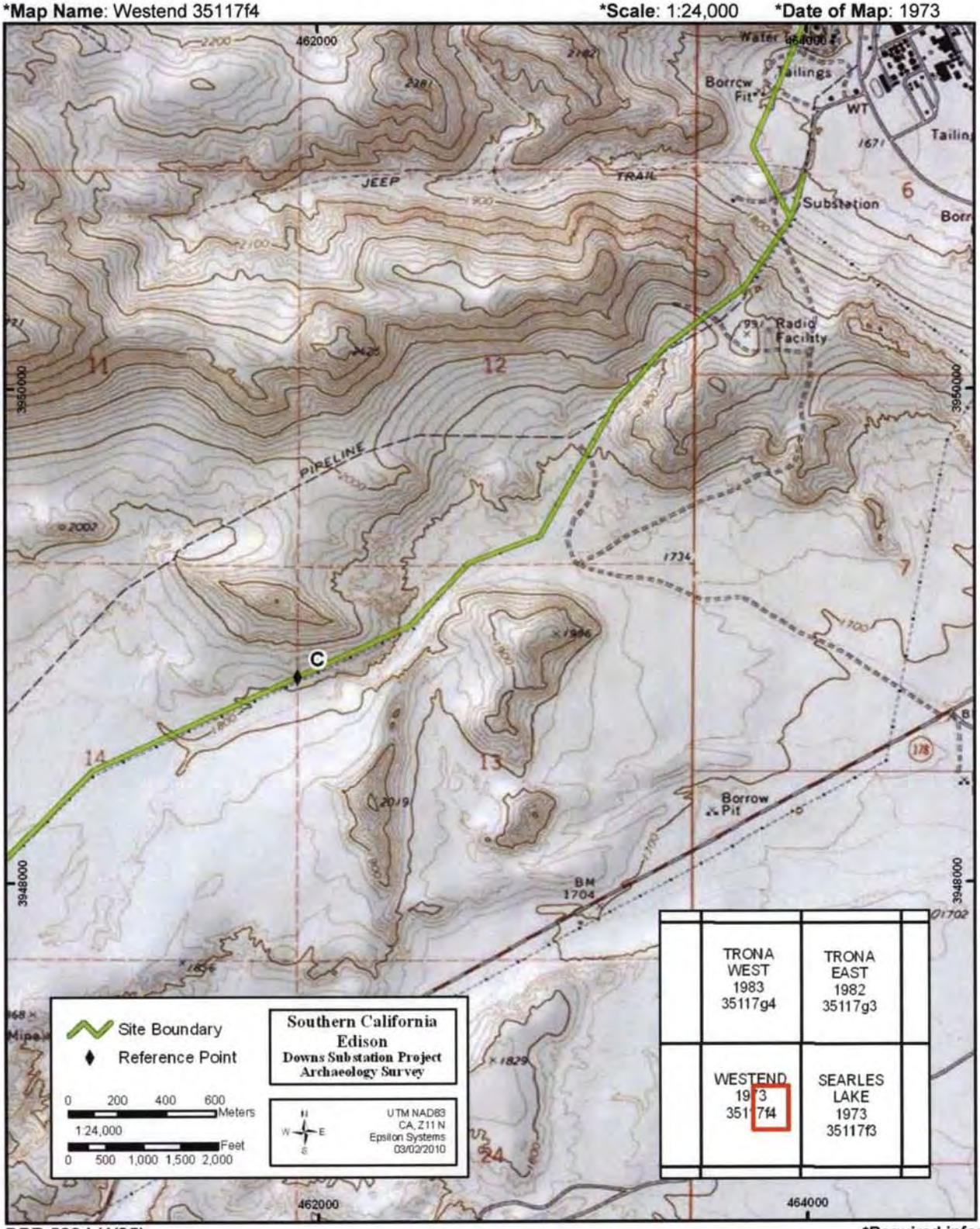
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

*Resource Name or #: SCE-R-2

*Map Name: Westend 35117f4 *Scale: 1:24,000 *Date of Map: 1973



DPR 523J (1/95)

*Required information

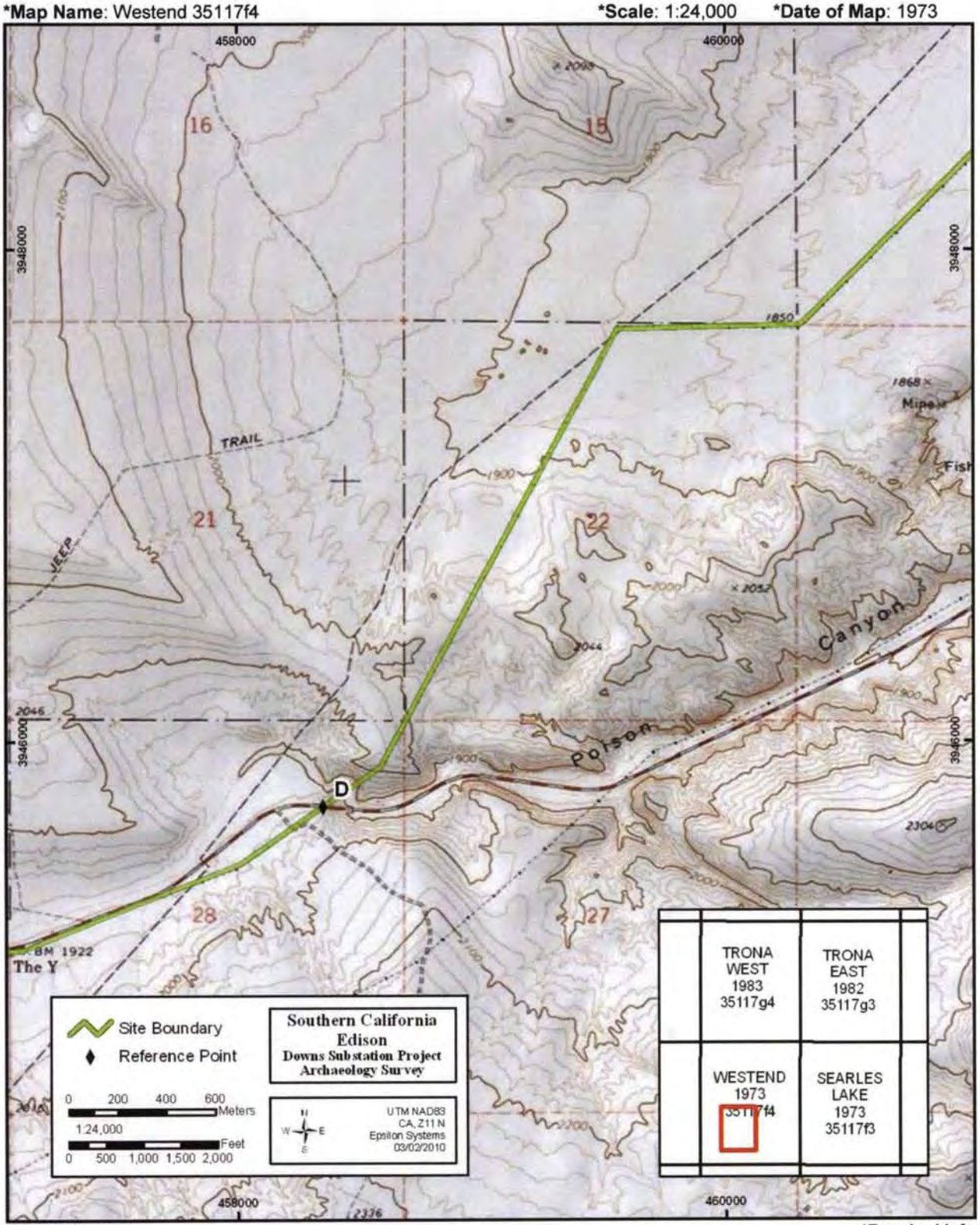
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

*Resource Name or #: SCE-R-2

*Map Name: Westend 35117f4 *Scale: 1:24,000 *Date of Map: 1973



*Required information

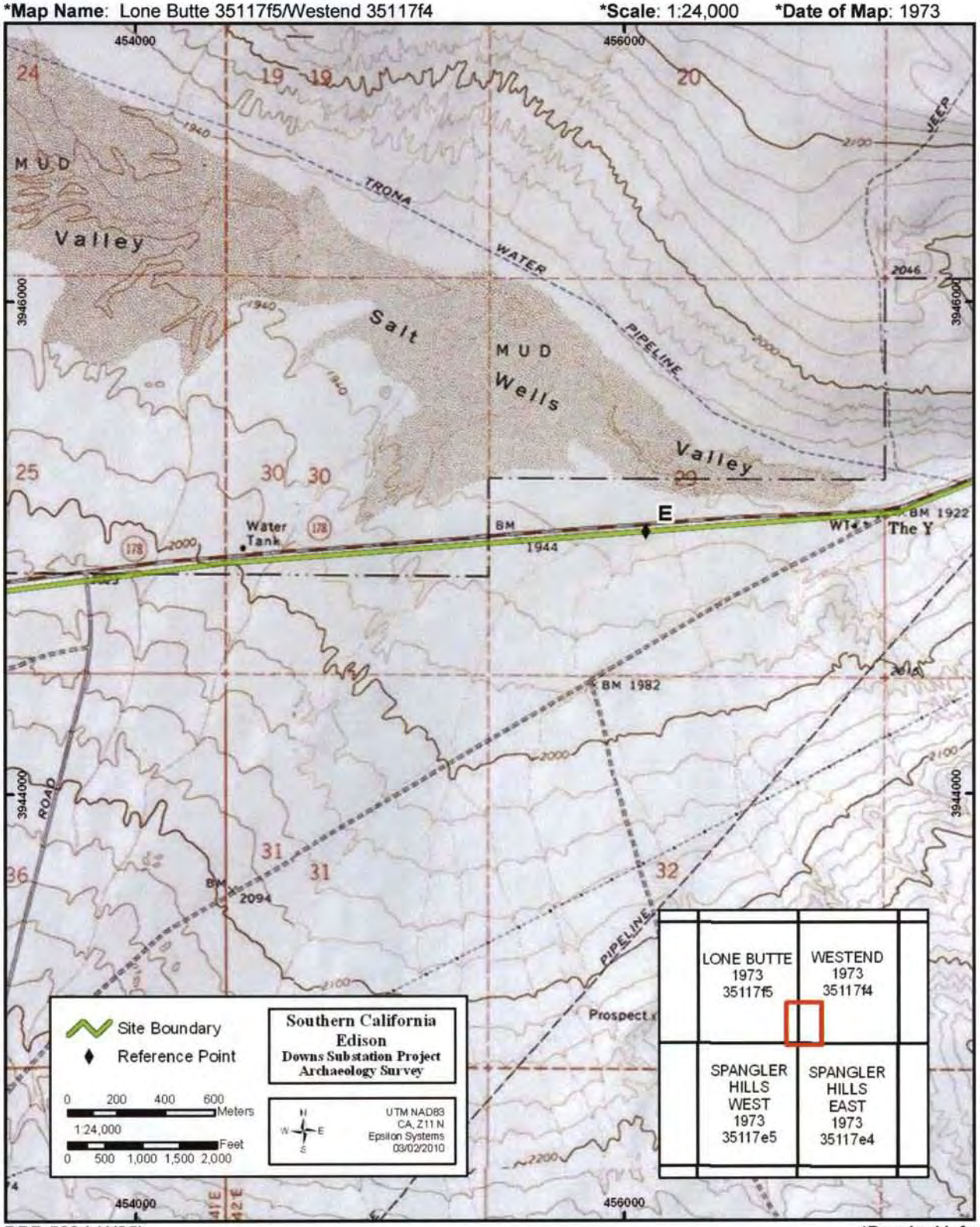
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

 *Resource Name or #:

*Map Name: Lone Butte 35117f5/Westend 35117f4 *Scale: 1:24,000 *Date of Map: 1973



DPR 523J (1/95)

*Required information

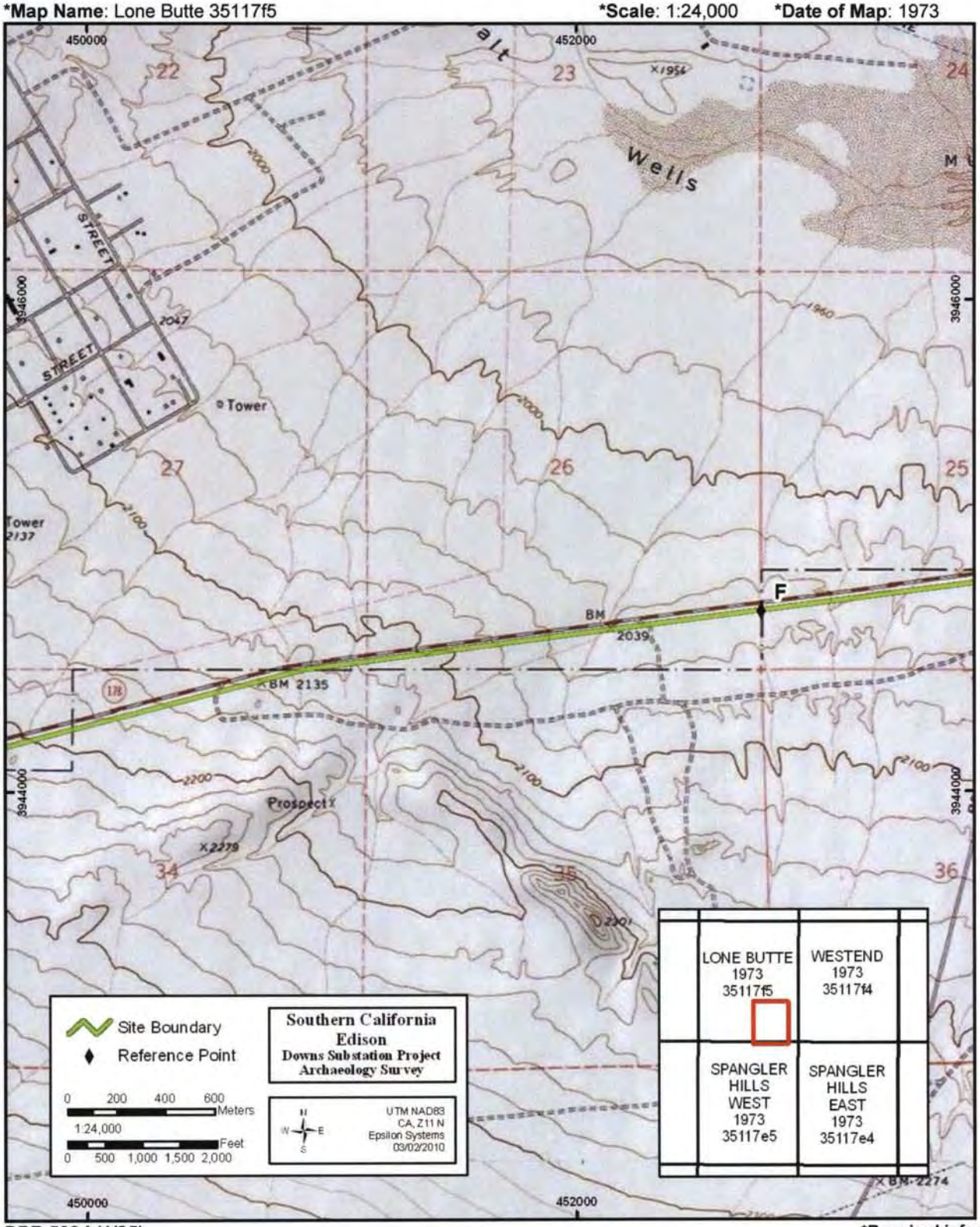
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

*Resource Name or #: SCE-R-2

*Map Name: Lone Butte 35117f5 *Scale: 1:24,000 *Date of Map: 1973



*Required information

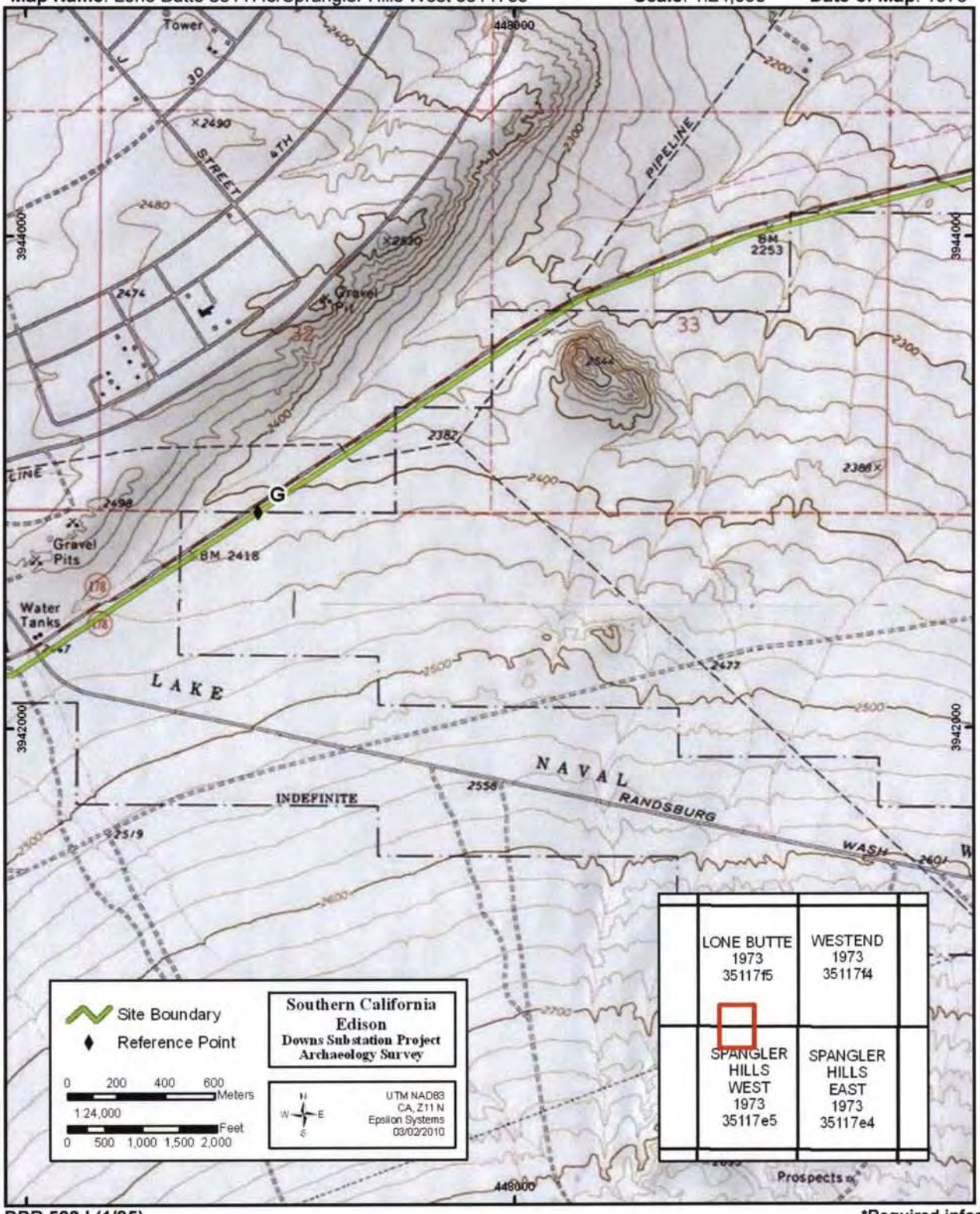
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

 *Resource Name or #: SCE-R-2

*Map Name: Lone Butte 35117f5/Sprangler Hills West 35117e5 *Scale: 1:24,000 *Date of Map: 1973



DPR 523J (1/95)

*Required information

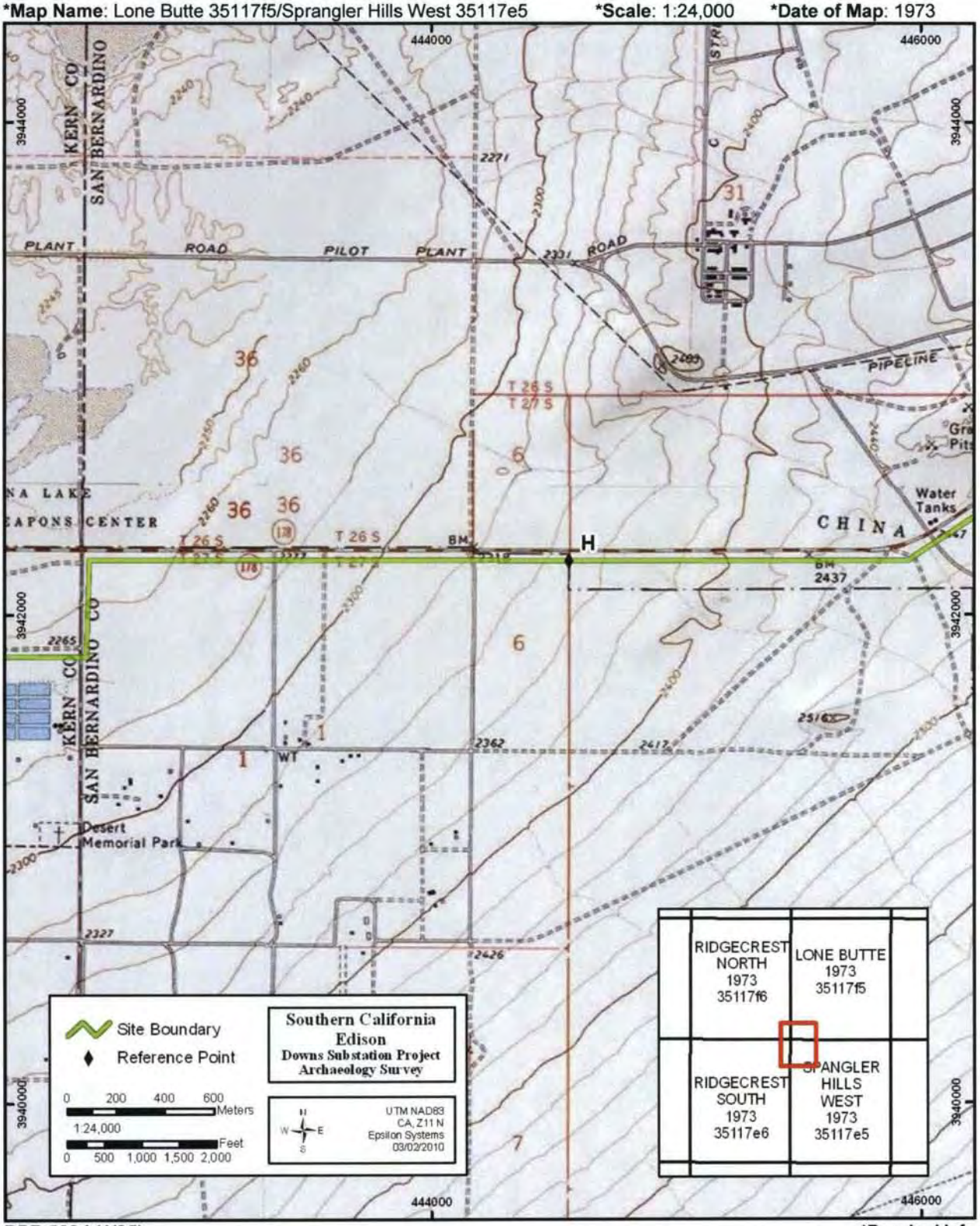
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

*Resource Name or #: SCE-R-2

*Map Name: Lone Butte 35117f5/Sprangler Hills West 35117e5 *Scale: 1:24,000 *Date of Map: 1973



*Required information

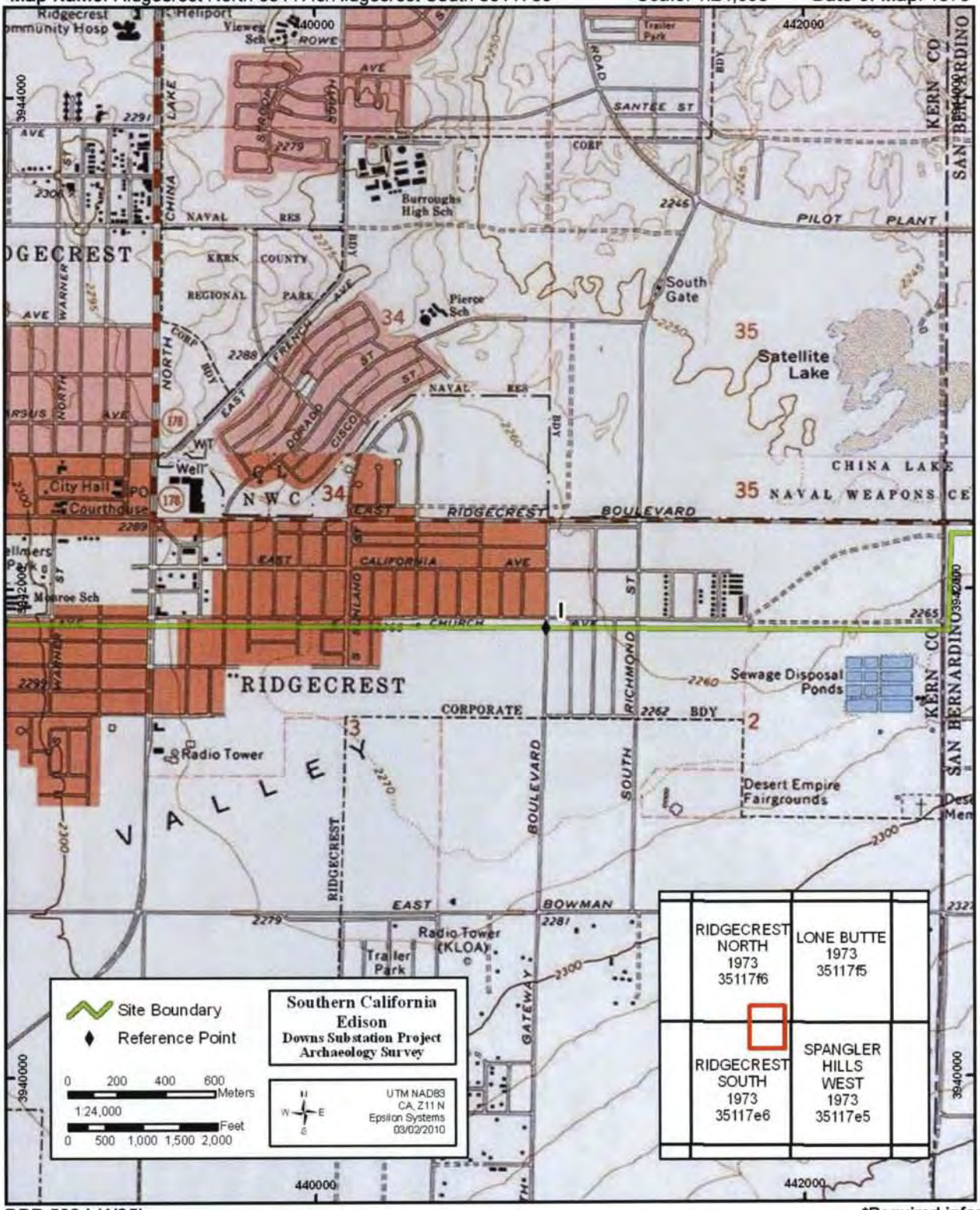
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

 *Resource Name or #: SCE-R-2

*Map Name: Ridgecrest North 35117f6/Ridgecrest South 35117e6 *Scale: 1:24,000 *Date of Map: 1973



DPR 523J (1/95)

*Required information

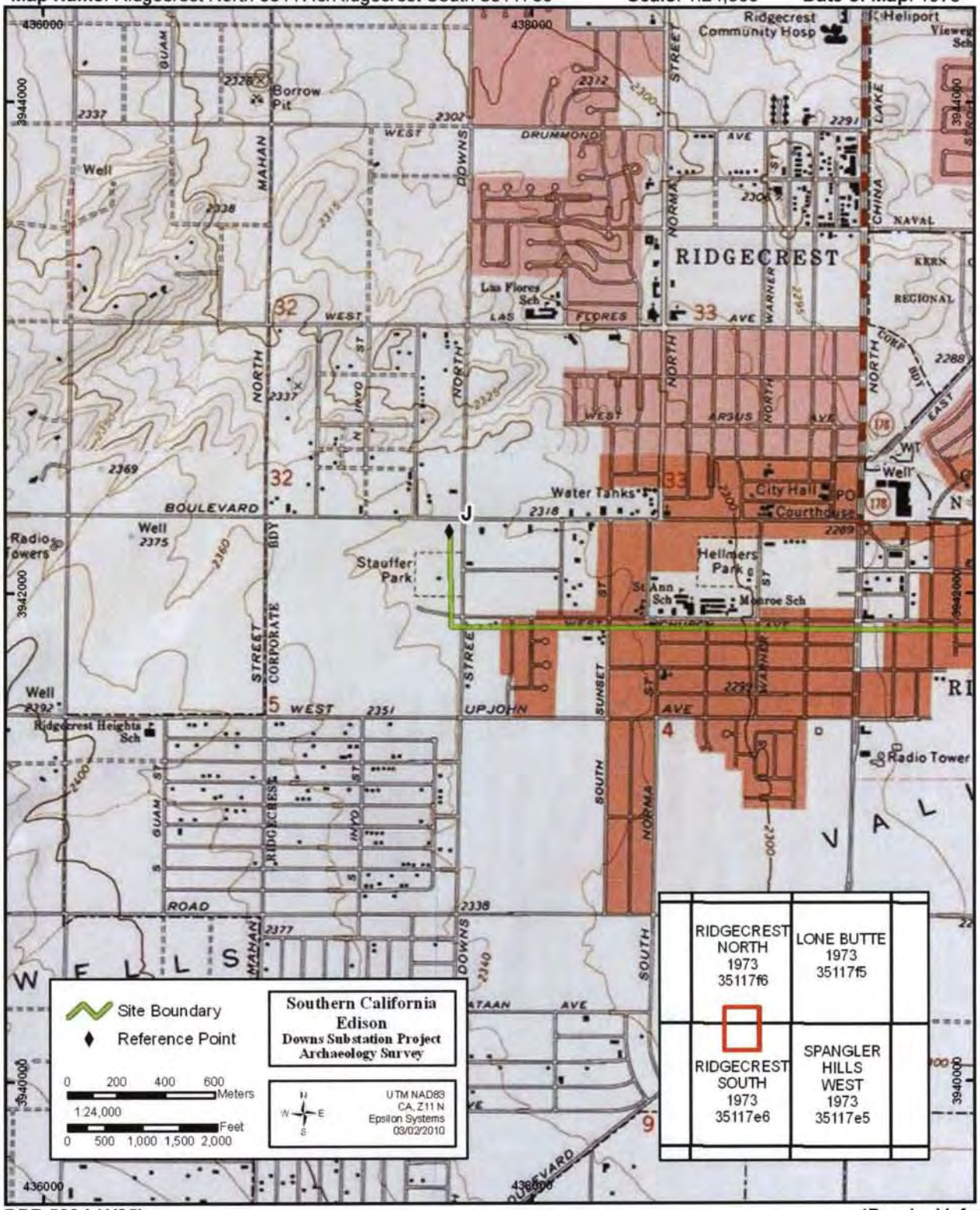
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-15-013824
HRI#
Trinomial CA-KER-7729H

*Resource Name or #: SCE-R-2

*Map Name: Ridgecrest North 35117f6/Ridgecrest South 35117e6 *Scale: 1:24,000 *Date of Map: 1973



DPR 523J (1/95)

*Required information

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

NRHP Status Code
Other Listings
Review Code _____ Reviewer _____ Date

Primary # 15-017353
HRI #
Trinomial CA-KER-9517H

 *Resource Name or #: SW-1

P1. Other Identifier:
P2. Location: ☒ Not for Publication ☐ Unrestricted
*a. County: Kern
*b. USGS 7.5' Quad: Ridgecrest North Date: 1973;
T.26S R.40E, NW ¼ of Sec. 23
T.26S R.40E, SW ¼ of Sec. 14; MD B.M.
c. Address: Naval Air Weapons Station City: China Lake Zip: 93555
d. UTM: Zone 11, Recorded full extent: **southern end** = 441386 mE, 3946821 mN; **northeast end** = 441460 mE, 3947141 mN; See Linear Feature Record (NAD 1983)
e. Other Locational Data: Proceed along Lauritsen road until the range checkpoint is reached. Once through the range checkpoint proceed until Pole Line Road is reached. Turn right on Pole Line Road and immediately merge right onto Knox Road. After merging the site begins 470 meters on the north side of the road.

*P3a. **Description:** These site forms address a segment of an historic paved access road leading to the sewage disposal plant, is frequently traveled, and is located adjacent to Main Site within NAWS China Lake. The site in its entirety is 1, 265 feet long. This road segment has undergone regular maintenance on the road shoulders and paved road surface over the years. It trends north/south, and at its widest point measures 54 feet. This road was planned, designed and built in a specific manner and served to connect Knox Road with the sewage disposal plant. No portion of this road is left undisturbed, as decades of road maintenance has been taking place on the paved road itself and its dirt road shoulders. This road appears on 1944 "As-Built" engineering drawings for the installation, the "*Holmes and Narver 1948 Master Site Map, 1:5,000 scale"* and also appears on a historic map "*U.S. Naval Ordnance Test Station, 1953 Range Roads & Landmarks*" illustrating its historic significance. This historic road segment has a low to moderate level of integrity resulting from continuous road maintenance.

*P3b. Resource Attributes: (AH7)--Roads/trails/railroad grades

*P4. Resources Present: ☐ Building ☐ Structure ☐ Object ☒ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)



P5b. Description of Photo: (view, date, accession#) Site overview of recorded road (Frame # 118-1289) taken at 30°

*P6. Date Constructed/Age and Source: ☒ Historic ☐ Prehistoric ☐ Both

*P7. Owner and Address: Naval Air Weapons Station (NAWS), China Lake, CA 93555.

*P8. Recorded by: NAWS Archaeologist: S. Sampson.

*P9. Date Recorded: 8/5/2013

*P10. Survey Type: Intensive pedestrian survey with 15 meter spacing off each side of the road surveyed.

*P11. Report Citation: S. Sampson (2013). Road Maintenance-Iwo Jima, Mountain Springs Canyon, Plate Range, Pole Line, and Sewage Pond Roads, Kern, Inyo, and San Bernardino Counties, California. NAWS China Lake, CA. NAWS 2014-003.

*Attachments: ☒Archaeological Record ☒Linear Feature Record ☒Continuation Sheet ☒Photograph Record ☒ Location Map

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
ARCHAEOLOGICAL SITE RECORD

Primary # 15-017353
Trinomial CA-KER-9517H

 *Resource Name or # (Assigned by Recorder) SW-1

*A1. **Dimensions:** a. Length N/A b. Width N/A
Method of Measurement: ☐ Paced ☒ Taped ☐ Visual estimate ☒ Other: GPS
Method of Determination (Check any that apply): ☐ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☒ Other (Explain): Historic maps, visible road alignments
Reliability of Determination: ☒ High ☐ Low Explain: High surface visibility
Limitations (Check any that apply): ☒ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined ☐ Disturbances ☐ Vegetation ☒ Other (Explain): The site is accessible by passing through the Lauritsen range checkpoint.

A2. **Depth:** ☐ None ☒ Unknown Method of Determination: Not tested, the road is a paved military access road.

*A3. **Human Remains:** ☐ Present ☒ Absent ☐ Possible ☐ Unknown (Explain): No human remains were encountered

*A4. **Features**: This site consists of an historic access road directly north of main site. See the linear feature record for additional details.

*A5. **Cultural Constituents:** N/A

*A6. **Were Specimens Collected?** ☒ No ☐ Yes:

*A7. **Site Condition:** ☐ Good ☒ Fair ☐ Poor: This road segment has been subjected to regular road maintenance (paving and road shoulder) over the years; however the alignment of this road segment has remained the same. Existing alterations consist of the current pavement road surface, as the original road surface has been altered continuously based on need. Grading the road shoulders have resulted in the eventual widening of the road (dirt berm to dirt berm) from continuous shoulder grading. No disturbances were noted within this site due to this site being the main paved thoroughfare to the sewage plant and maintained by road maintenance crews on a regular basis.

*A8. **Nearest Water:** The nearest permanent water source is Lark Seep, which is two miles to the northeast.

*A9. **Elevation:** The elevation is 675 to 676 meters (~2,213 to 2, 219 feet).

A10. **Environmental Setting:** The vegetation consists of creosote scrub brush community, with saltbush scrub, and various small grasses. The site is located on the floor of the Indian Wells Valley. Soils consist of light tan brown sand that is poorly sorted, with subangular granules.

A11. **Historical Information:**

*A12. **Age:** ☐ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☒ 1914-1945 ☒ Post 1945 ☐ Undetermined
Describe position in regional prehistoric chronology or factual historic dates if known:

A13. **Interpretations:** This road segment was created in 1944 based off reviewing the "As-Built" engineering drawings, and known historic military resources that surround it.

A14. **Remarks:**

A15. **References:**

Holmes and Narver
1948 *MASTER SITE MAP, Southern Portion of Station, Kern and San Bernardino Counties, 1:5,000 Scale.* Map on file at Naval Air Weapons Station China Lake, California.

U.S. Naval Ordnance Test Station
1953 *Range Roads & Landmarks.* Map on file at Naval Air Weapons Station China Lake, California.

A16. **Photographs** See photographic record
Original Media/Negatives Kept at: NAWS China Lake Curation Facility

*A17. **Form Prepared by:** Seth Sampson **Date:** 8/5/2013
Affiliation and Address: NAWS China Lake, China Lake, CA 93555

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LINEAR FEATURE RECORD

Primary # 15-017353
HRI #
Trinomial CA-KER-9517H

 *Resource Name or # (Assigned by recorder) SW-1

*Recorded by: S. Sampson *Date 8-5-2013 ☒ Continuation ☐ Update

L1. Historic and/or Common Name:
L2a. Portion Described: ☒ Entire Resource ☐ Segment ☐ Point Observation **Designation:**

b. Location of point or segment: The south end of the road segment within the project area is 441386 mE/3946821 mN and extends northeast to 441460 mE/3947141 mN.

L3. Description: This road was created using standard road paving techniques and its appearance suggests it is subjected to regular road maintenance. This road segment is a paved road with no unique historic construction techniques evident. No features, or archaeological sites were documented in association with this road.

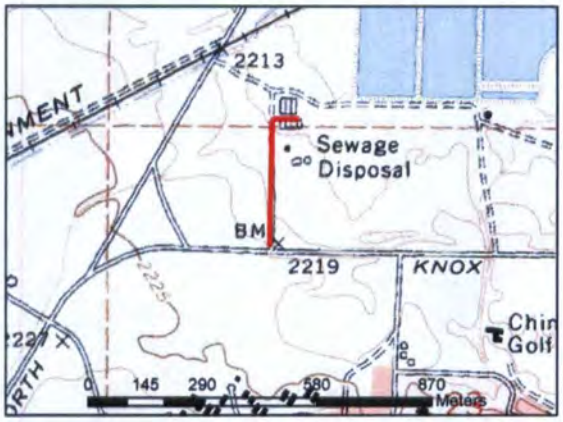
L4. Dimensions
a. Top Width: 54 ft
b. Bottom Width: N/A
c. Height or Depth: N/A
d. Length of Segment: 1, 078 ft (329 m)

L5. Associated Resources: None

L6. Setting: The vegetation consists of creosote scrub brush community, with saltbush scrub, and various small grasses. The site is located on the floor of the Indian Wells Valley. Soils consist of light tan brown sand that is poorly sorted, with subangular granules.

L7. Integrity Considerations: This segment of historic road is maintained, in current use, and no longer retains integrity in terms of workmanship, and feeling. At a minimum this road segment retains integrity of location, design, setting, and materials. At this time it is not known if the road segment retains integrity of association. The entire road segment has been modified through continuous road maintenance.

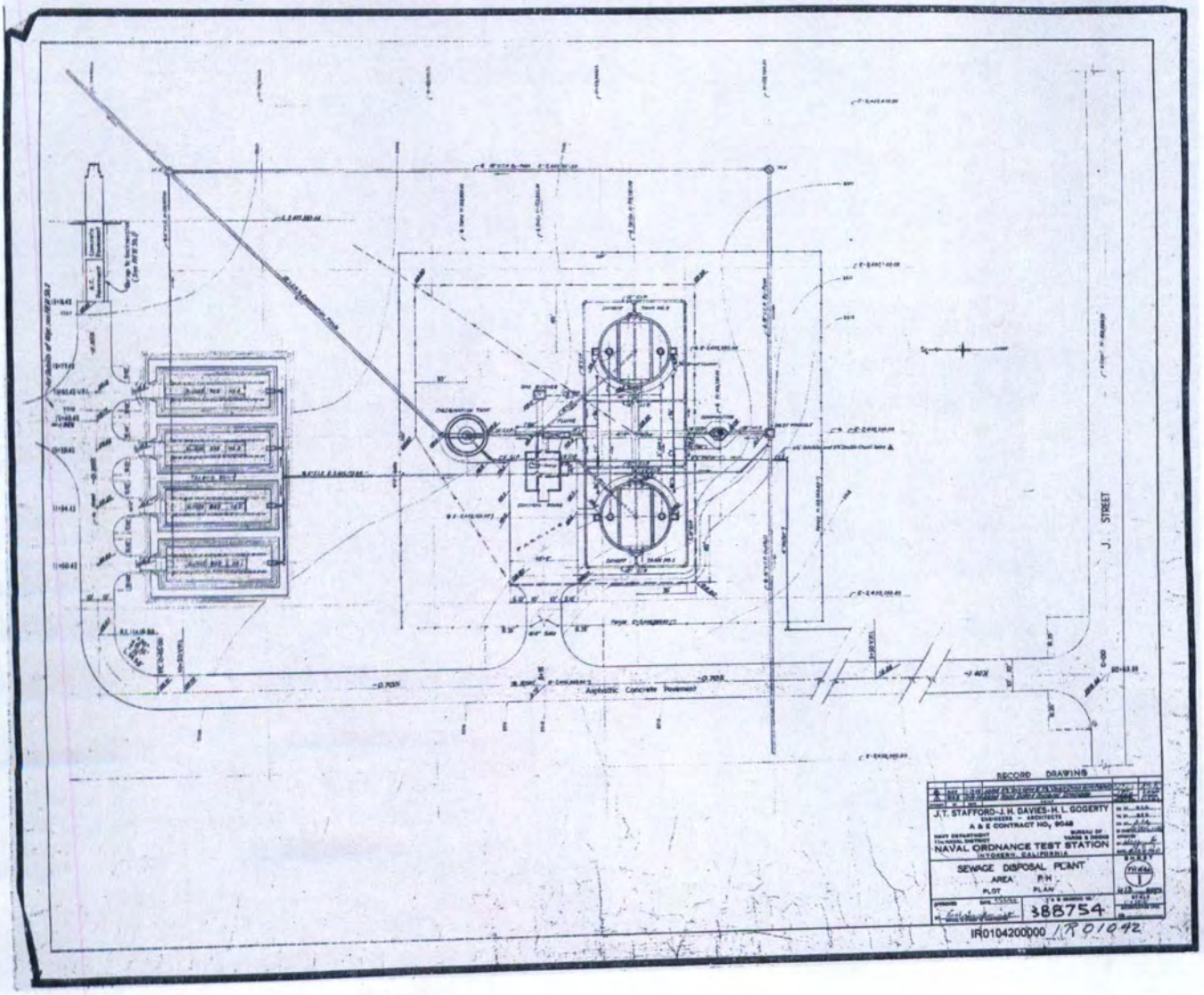
L8b. Description of Photo, Map, or Drawing: Road plotted on the Ridgecrest North 7.5 Minute USGS Quadrangle.

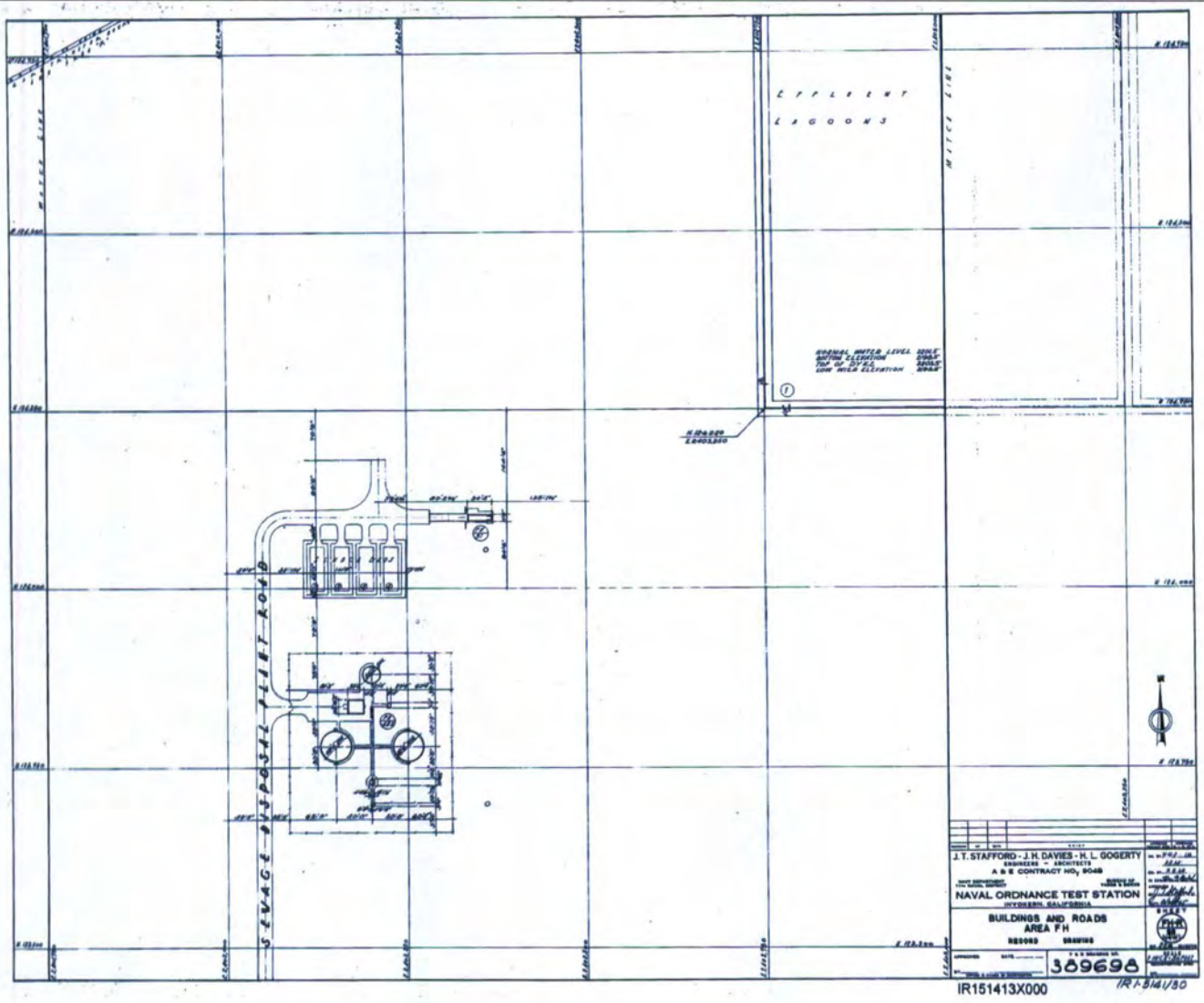


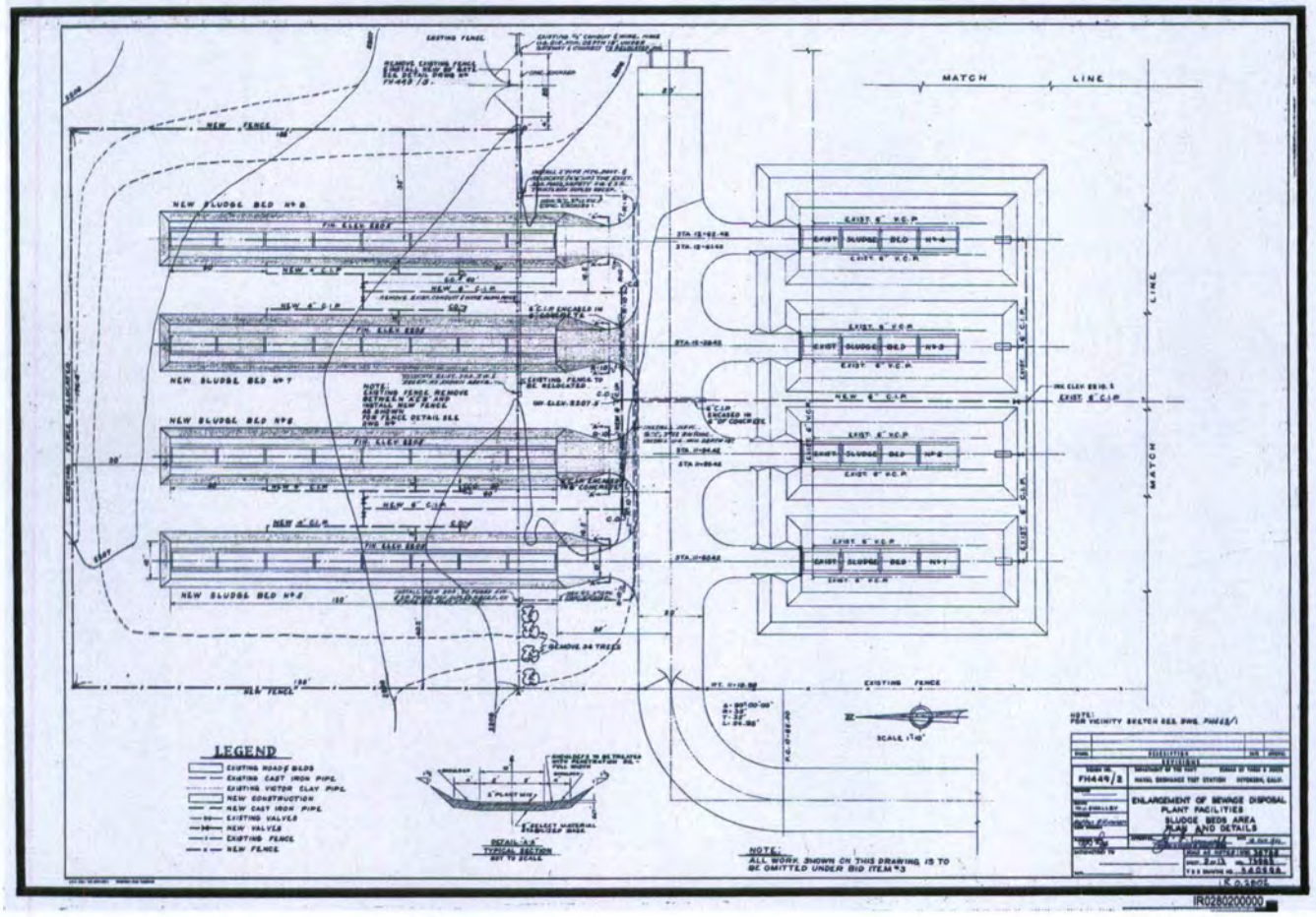
L9. Remarks: A perimeter fence for the Sewage Disposal Plant bisects the site leaving only a small portion of the road within the plant itself. No previous effort has been made to document this road; however the engineering maps provided should be consulted for the historic layout. A window survey was performed for the portion of this site within the disposal plant, as sewage sludge beds surround this portion prohibiting a pedestrian survey.

L10. Form Prepared by: Seth Sampson

L11. Date: 8/5/2013


J. STREET
Asphaltic Concrete Pavement
RECORD DRAWING
J.T. STAFFORD-J. H. DAVIES-H. L. GOGERTY
NAVAL ORDNANCE TEST STATION
INYOKERN, CALIFORNIA
SEWAGE DISPOSAL PLANT
AREA P/H
PLOT PLAN
88754
IR0104200000 IR01042


EFFLUENT LAGOONS
J. T. STAFFORD - J. H. DAVIES - H. L. GOGERTY
NAVAL ORDNANCE TEST STATION
INYOKERN, CALIFORNIA
BUILDINGS AND ROADS
AREA F H
389698
IR151413X000


MATCH LINE
NEW SLUDGE BED No 8
NEW SLUDGE BED No 7
NEW SLUDGE BED No 6
NEW SLUDGE BED No 5
EXISTING FENCE
NEW FENCE
LEGEND
EXISTING ROADS BEDS
EXISTING CAST IRON PIPE
EXISTING VICTOR CLAY PIPE
NEW CONSTRUCTION
NEW CAST IRON PIPE
EXISTING VALVES
NEW VALVES
EXISTING FENCE
NEW FENCE
NOTE:
ALL WORK SHOWN ON THIS DRAWING IS TO BE OMITTED UNDER BID ITEM #3
ENLARGEMENT OF SEWAGE DISPOSAL PLANT FACILITIES
SLUDGE BEDS AREA
PLAN AND DETAILS
IR0280200000

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PHOTOGRAPH RECORD

Primary # 15-017353
HRI #
Trinomial CA-KER-9517H

Project Name: Road Maintenance-Mountain Springs Canyon, Iwo Jima, Plate Range, Pole Line, and Sewage Pond Roads

Year: 2013 **Camera Format:** Digital **Negatives Kept At:** China Lake Curation Facility

Mo.	Day	Site	Exp./Frame	Subject/Description	View Toward
7	15	PR-1	0002	Road Overview	120°
7	15	PR-1	0003	Road Overview	200°

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

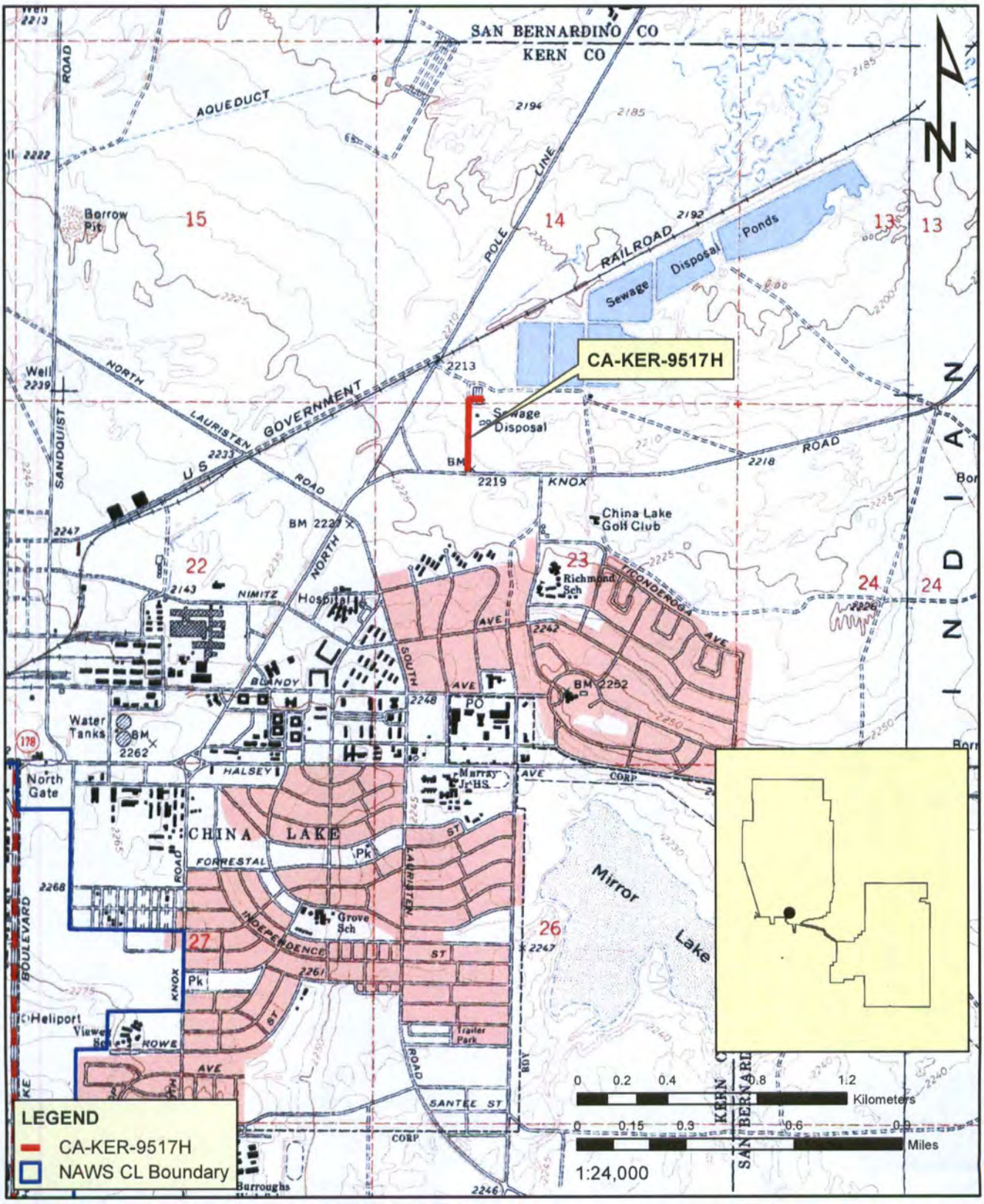
LOCATION MAP

Primary # 15-017353
HRI #
Trinomial: CA-KER-9517H

Page 8 of 8
*Scale: 1:24,000

*Resource Name or #: SW-1
*Date of map: 8-5-2013

*Map Name: *Ridgecrest North 1973, 7.5 Minute USGS Quad*



DPR 523J (1/95)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

 Resource Name or # AE-3182-ISO-01

P1. Other Identifier:

***P2. Location: a. County:** San Bernardino ☒ **Not for Publication** ☐ **Unrestricted**

b. USGS 7.5′ Quad: Ridgecrest North, CA **Date:** 07/15/2015 T 27S, R40E ; NW ¼ **of** NW ¼ **of** Section 1 **B.M.**

c. Address: N/A

d. UTM: NAD, 83 Zone; 11N 442617 **mE /** 3941864 **mN**

e. Other Locational Data: From the intersection of County Line Road/San Bernardino Blvd. and Church Ave. in the city of Ridgecrest, the resource is located approximately 184 feet to the east, situated on the north side of an unnamed dirt access road.

***P3a. Description:** The artifact is a colorless glass base bottle fragment. Embossed on the bottom is: "T 120 277/AG[makers mark]/14 A411". The fragment measures 2 ½ inches in diameter and is a ¼ inch thick. It is very weathered and sand blasted and no other artifacts were found in the vicinity.

***P3b. Resource Attributes:** HP39. Other (Isolated Historic Glass)

***P4. Resources Present:** ☐ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☒ Other: Isolate

***P5a. Photograph or Drawing:**



P5b. Description of Photo: Detail of AE-3182-ISO-01 showing embossing on colorless glass bottle base fragment.

***P6. Date Constructed/Age and Sources:** ☐ Prehistoric ☒ Historic ☐ Both

***P7. Owner and Address:**
San Bernardino County
APN 048320223

***P8. Recorded By:**
K. Asselin, K. Jernigan, C. Pansarosa
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

***P9. Date Recorded:** 7/15/15

***P10. Survey Type:** ☒ Intensive ☐ Reconnaissance ☐ Other
Describe: 15-20 meter parallel and meandering transects

***P11.Report Citation:**
Asselin, Katie, and Jay Lloyd
2016 *Cultural Resources Study for the City of Ridgecrest Wastewater Treatment Plant Project, Kern and San Bernardino Counties, California.* Applied EarthWorks, Inc., Fresno, California. Prepared for Provost and Pritchard Consulting Group, 130 N. Garden Street, Visalia, CA, 93291.

***Attachments:**
☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet
☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record
☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Photograph Record ☐ Other (list):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

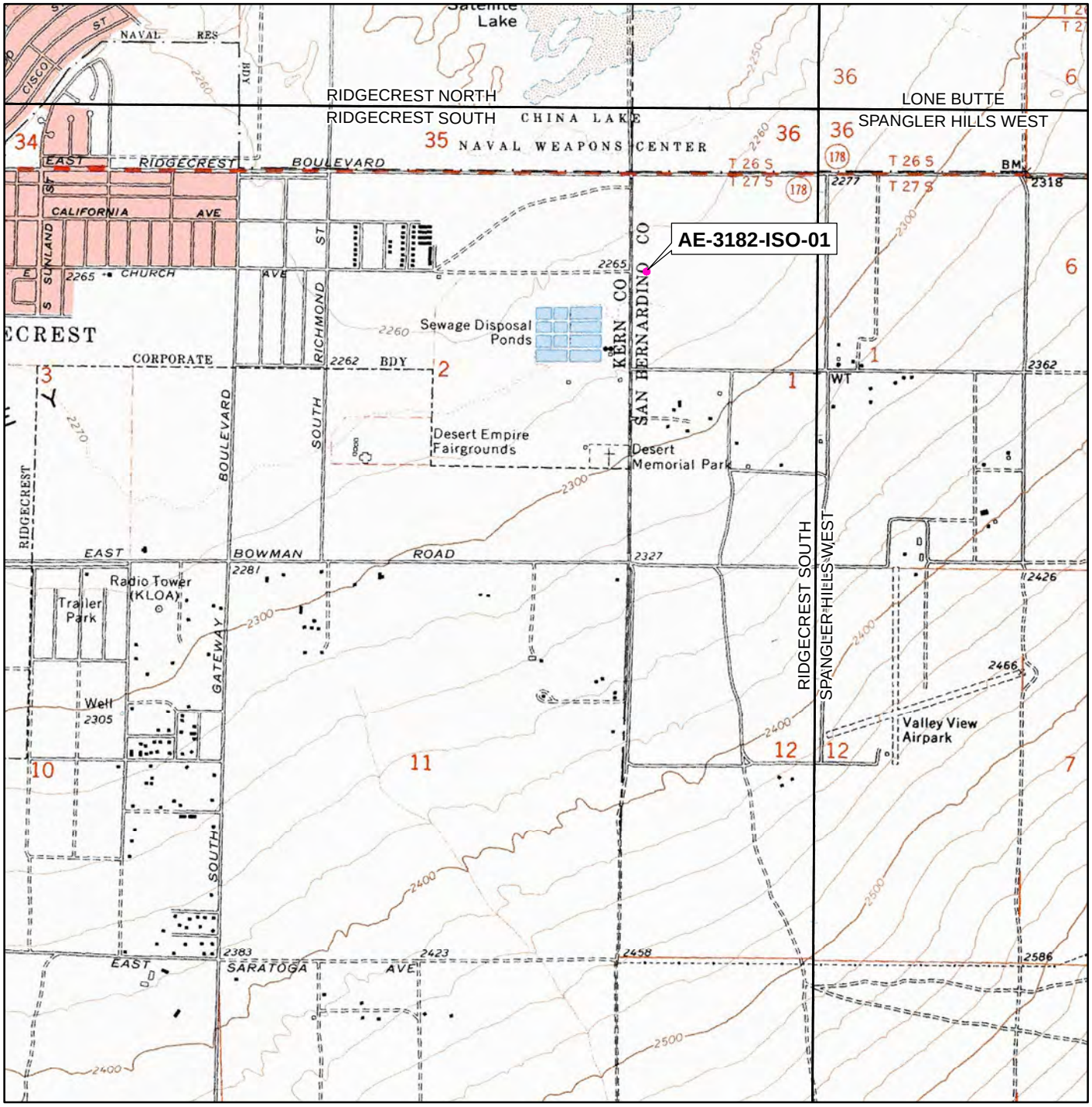
Primary #
HRI#
Trinomial

Resource Name or #: AE-3182-ISO-01

Scale: 1:24,000

Map Name: Ridgecrest South, CA, USGS 7.5' quadrangle

Date: 1973



SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

TRUE NORTH

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**
PRIMARY RECORD
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 Resource Name or # AE-3182-ISO-02

P1. Other Identifier: --

***P2. Location: a. County:** Kern ☒ **Not for Publication** ☐ **Unrestricted**

b. USGS 7.5′ Quad: Ridgecrest South, CA **Date:** 07/16/2015 T 27S , R 40E ; SW ¼ **of** SE ¼ **of** Section 2 **B.M.**

c. Address: N/A

d. UTM: NAD, 83 Zone; 11N 442200 **mE /** 3940733 **mN** (Artifact 1)
UTM: NAD, 83 Zone; 11N 442205 **mE /** 3940708 **mN (**Artifact 2)

e. Other Locational Data: From the intersection of Richmond Rd. and E. Bowman Rd. in Ridgecrest, head east on E. Bowman Rd. for 0.5 mile to the property corner at parcels APN 343-014-22 and APN 343-014-29, on the north side of the road. The resource is located on Parcel APN 343-014-22, approximately 70 meters northeast of this property corner, with APN 343-014-29 to the west.

***P3a. Description:** This resource consists of two isolated can dating between 1930 and 1975. Artifact 1 is a vent hole can, with stamped ends and an internal rolled seam. It has been knife cut opened and measures 2 15/16 inches in diameter by 3 15/16 inches tall, typical of a Carnation brand condensed or evaporated milk can dating between 1930-1975 (Simonis 1997). Artifact 2 is a Hills Brother Coffee can with a key opening and re-closable lid; however, the lid was missing. Some lithography was still visible, namely the "HILLS" name in impact font and all capitalized, which dates this can between 1945-1963 (Lanford and Mills 2006). The can measures 5 inches in diameter by 3 ¼ inches tall. See Continuation Sheet (page 2) for more information.

***P3b. Resource Attributes:** (HP39) Historic cans, other.

***P4. Resources Present:** ☐ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☒ Other: Isolate

***P5a. Photograph or Drawing:**



P5b. Description of Photo: Overview of location of AE-3182-ISO-02, facing south.

***P6. Date Constructed/Age and Sources:**
☐ Prehistoric ☒ Historic ☐ Both

***P7. Owner and Address:**
City of Ridgecrest
APN 343-014-22

***P8. Recorded By:**
K. Asselin, K. Jernigan, C. Pansarosa
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

***P9. Date Recorded:** 7/16/15

***P10. Survey Type:** ☒ Intensive
☐ Reconnaissance ☐ Other
Describe: Pedestrian survey, 15-20 meter parallel and meandering transects.

***P11.Report Citation:**
Asselin, Katie, and Jay Lloyd
2016 *Cultural Resources Study for the City of Ridgecrest Wastewater Treatment Plant Project, Kern and San Bernardino Counties, California.* Applied EarthWorks, Inc., Fresno, California. Prepared for Provost and Pritchard Consulting Group, 130 N. Garden Street, Visalia, CA, 93291.

***Attachments:**
☐ NONE ☒ Location Map ☐ Sketch Map ☒ Continuation Sheet
☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record
☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Photograph Record ☐ Other (list):

***P3a. Description:** *(Continued from Page 1)*

These two artifacts were located approximately 25 meters apart and there was a sparse array of other tin cans in a 30 by 30 meter area; however, these additional cans all appeared to date to the 1960s-70s and were not considered to be part of any deep historical assemblage. The maximum density of cans was three cans per square meter with the average density of one can per five meters squared. There were various cans noted throughout this parcel and it appears as if these deposits are all a result of casual littering. Additionally, there were no other artifacts, such as glass or ceramic, associated with these can that would indicate it as a historical refuse scatter that was utilized over a long period of time; however, these artifacts have been recorded to indicate that these types of resources (borderline historic cans) are located in the area.

Lanford, Steve and Robin Mills

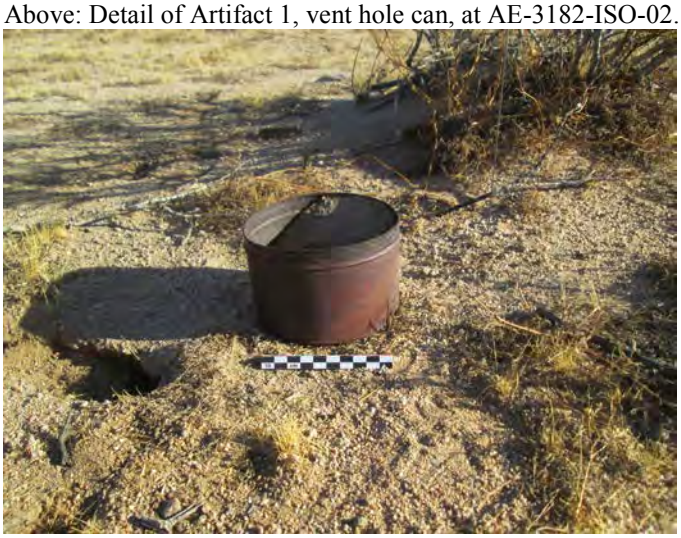
2006 *HILLS BROS. Coffee Can Chronology Field Guide.* BLM – Alaska Open File Report 109. U.S. Department of Interior Bureau of Land Management. Fairbanks, Alaska.

Simonis, Don

1997 Simonis Milk Can Guide. *Newsletter of the New Mexico Archaeological Council* 4. Albuquerque, New Mexico.



Above: Detail of Artifact 1, vent hole can, at AE-3182-ISO-02.



Above: Detail of Artifact 2, Hills Bros. coffee tin, at AE-3182-ISO-02.

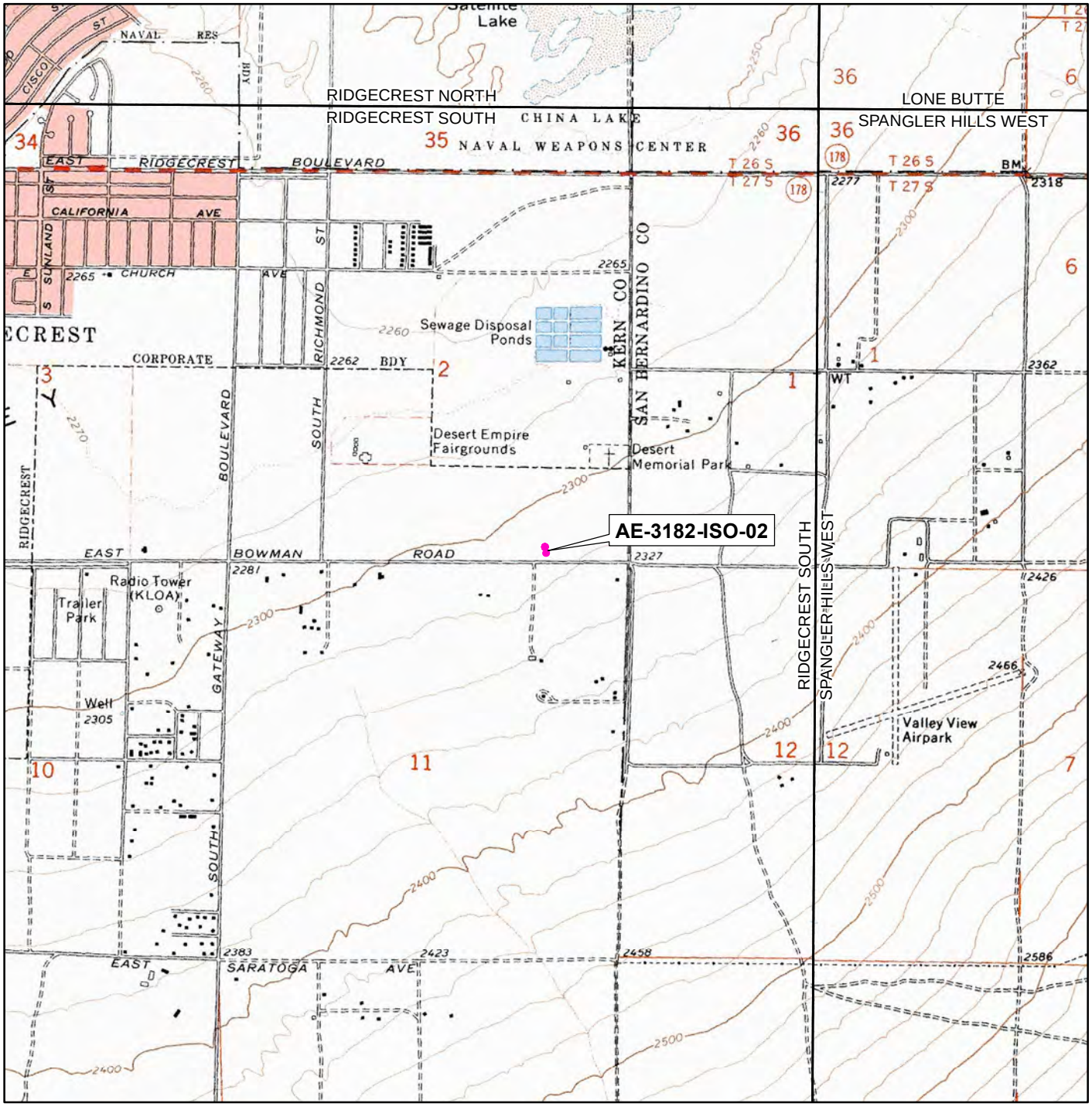
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 3 **of** 3 **Resource Name or #:** AE-3182-ISO-02 **Scale:** 1:24,000

Map Name: Ridgecrest South, CA, USGS 7.5' quadrangle **Date:** 1973



SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

TRUE NORTH

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**
PRIMARY RECORD
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 Resource Name or # AE-3128-ISO-03

P1. Other Identifier:

***P2. Location: a. County:** Kern ☒ **Not for Publication** ☐ **Unrestricted**

b. USGS 7.5′ Quad: Ridgecrest North, CA **Date:** 07/22/2015 T 26S , R 40E ; SE ¼ **of** NW ¼ **of** Section 23 **B.M.**

c. Address: Naval Air Weapons Station China Lake, 1 Administrative Circle, Ridgecrest, CA 93555

d. UTM: NAD83 Zone; 11N 441484 **mE /** 3946616 **mN**

e. Other Locational Data: Located approximately 150 meters southwest of the China Lake Sierra Vista RV Park on China Lake NAWS, at the intersection of Knox Road and Halsey Avenue. The artifact can be found approximately 224 meters west of Halsey Avenue in an undeveloped area of desert scrub with sagebrush and creosote.

***P3a. Description:** This resource is an isolated obsidian biface thinning flake with a snap fracture. Its dimensions are (2.3) cm long by (1.3) cm wide by 0.2cm thick.

***P3b. Resource Attributes:** (AP16): Flaked stone, isolate.

***P4. Resources Present:** ☐ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☒ Other: Isolate

***P5a. Photograph or Drawing:**



P5b. Description of Photo: Close up detail of obsidian biface thinning flake.

***P6. Date Constructed/Age and Sources:** ☒ Prehistoric ☐ Historic ☐ Both

***P7. Owner and Address:**
NAWS China Lake
1 Administrative Circle
Ridgecrest, CA 93555

***P8. Recorded By:**
K. Asselin, J. Tibbet
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

***P9. Date Recorded:** 7/22/15

***P10. Survey Type:** ☒ Intensive ☐ Reconnaissance ☐ Other
Describe: Pedestrian survey, 15-20m parallel and meandering transects.

***P11.Report Citation:**

Asselin, Katie and Jay Lloyd
2016 *Cultural Resources Study for the City of Ridgecrest Wastewater Treatment Plant Project, Kern and San Bernardino Counties, California.* Applied EarthWorks, Inc., Fresno, California. Prepared for Provost and Pritchard Consulting Group, 130 N. Garden Street, Visalia, CA, 93291.

***Attachments:** ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet
☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record
☐ Photograph Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Other (list):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

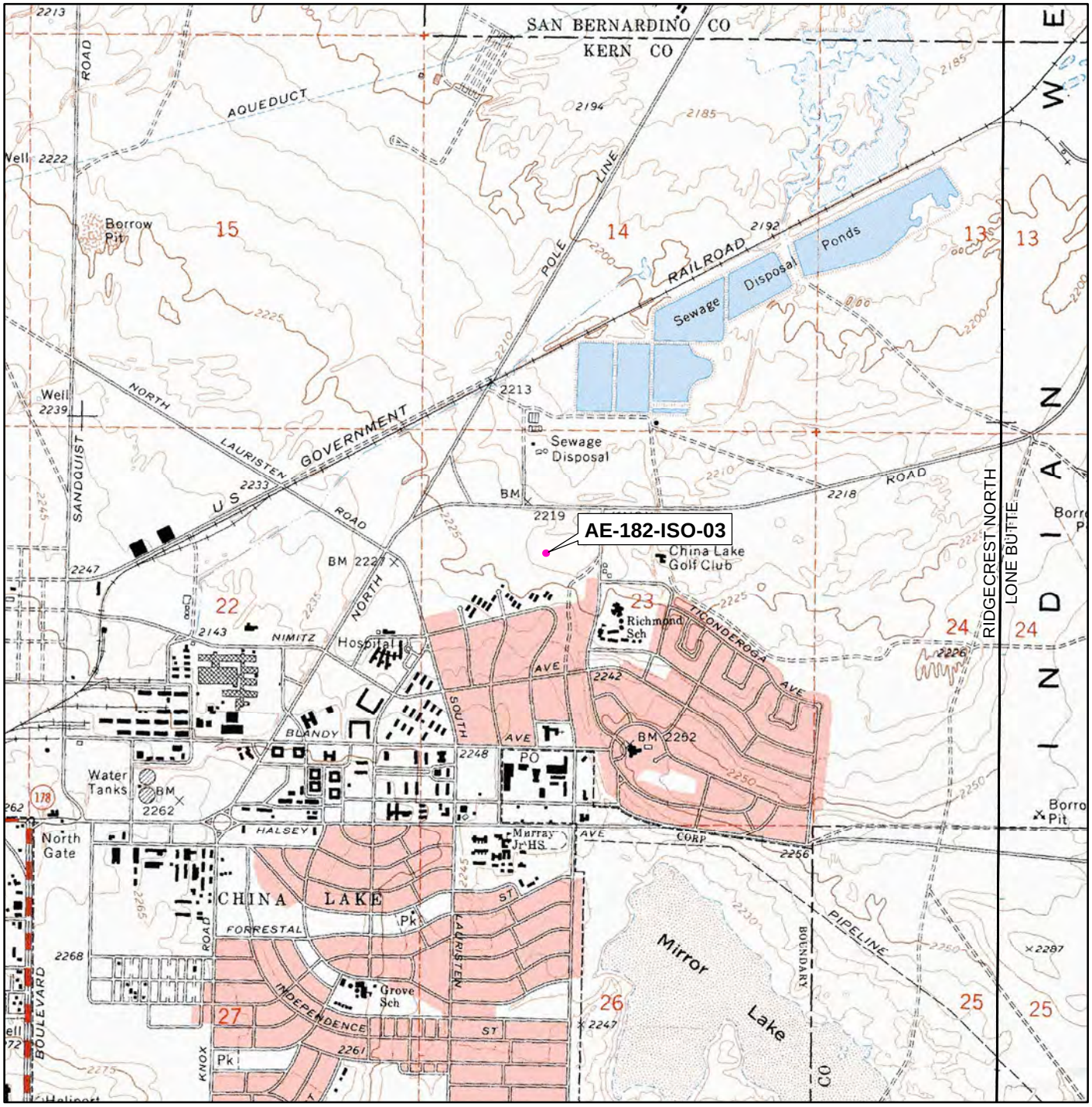
Primary #
HRI#
Trinomial

Resource Name or #: AE-3182-ISO-03

Scale: 1:24,000

Map Name: Ridgecrest South, CA, USGS 7.5' quadrangle

Date: 1973



State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI #**
PRIMARY RECORD
Trinomial
NRHP Status Code

Other Listings
Review Code Reviewer Date

 Resource Name or # AE-3182-ISO-04

P1. Other Identifier: --

***P2. Location: a. County:** Kern ☒ **Not for Publication** ☐ **Unrestricted**

b. USGS 7.5′ Quad: Ridgecrest North, CA **Date:** 07/22/2015 T , R ; NW ¼ **of** SE ¼ **of** Section 23 **B.M.**

c. Address: Naval Air Weapons Station China Lake, 1 Administrative Circle, Ridgecrest, CA 93555

d. UTM: NAD, 83 Zone; 11N 441706 **mE /** 3945946 **mN**

e. Other Locational Data: Located in an area of desert scrub dominated by tumbleweed and grasses approximately 10 meters east of Halsey Street and approximately 90 meters north-northwest of the junction of Halsey St. and Lexington Ave. on NAWS China Lake. Area appears to have been impacted with a lot of debris, push piles, and generally disturbed soil.

***P3a. Description:** This resource is an isolated obsidian biface thinning flake fractured down the middle. Its dimensions are (4.3) cm long by (2.5) cm wide by 0.6 cm thick. It appears large for a secondary flake and it could have been a primary flake, but no cortex is present. The edge may have been utilized.

***P3b. Resource Attributes:** (AP16): Flaked stone, isolate.

***P4. Resources Present:** ☐ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☒ Other: Isolate

***P5a. Photograph or Drawing:**



P5b. Description of Photo: Detail of AE-3182-ISO-04, obsidian biface thinning flake.

***P6. Date Constructed/Age and Sources:** ☒ Prehistoric ☐ Historic ☐ Both

***P7. Owner and Address:**
NAWS China Lake
1 Administrative Circle
Ridgecrest, CA 93555

***P8. Recorded By:**
K. Asselin, J. Tibbet
Applied EarthWorks, Inc.
1391 W. Shaw Ave., Suite C
Fresno, CA 93711

***P9. Date Recorded:** 7/22/15

***P10. Survey Type:** ☒ Intensive ☐ Reconnaissance ☐ Other
Describe: Pedestrian survey, 15-20 meter parallel and meandering transects.

***P11.Report Citation:**

Asselin, Katie and Jay Lloyd
2016 *Cultural Resources Study for the City of Ridgecrest Wastewater Treatment Plant Project, Kern and San Bernardino Counties, California.* Applied EarthWorks, Inc., Fresno, California. Prepared for Provost and Pritchard Consulting Group, 130 N. Garden Street, Visalia, CA, 93291.

***Attachments:** ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet
☐ Building, Structure, and Object Record ☐ Archaeological Record ☐ District Record ☐ Linear Feature Record
☐ Photograph Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Other (list):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

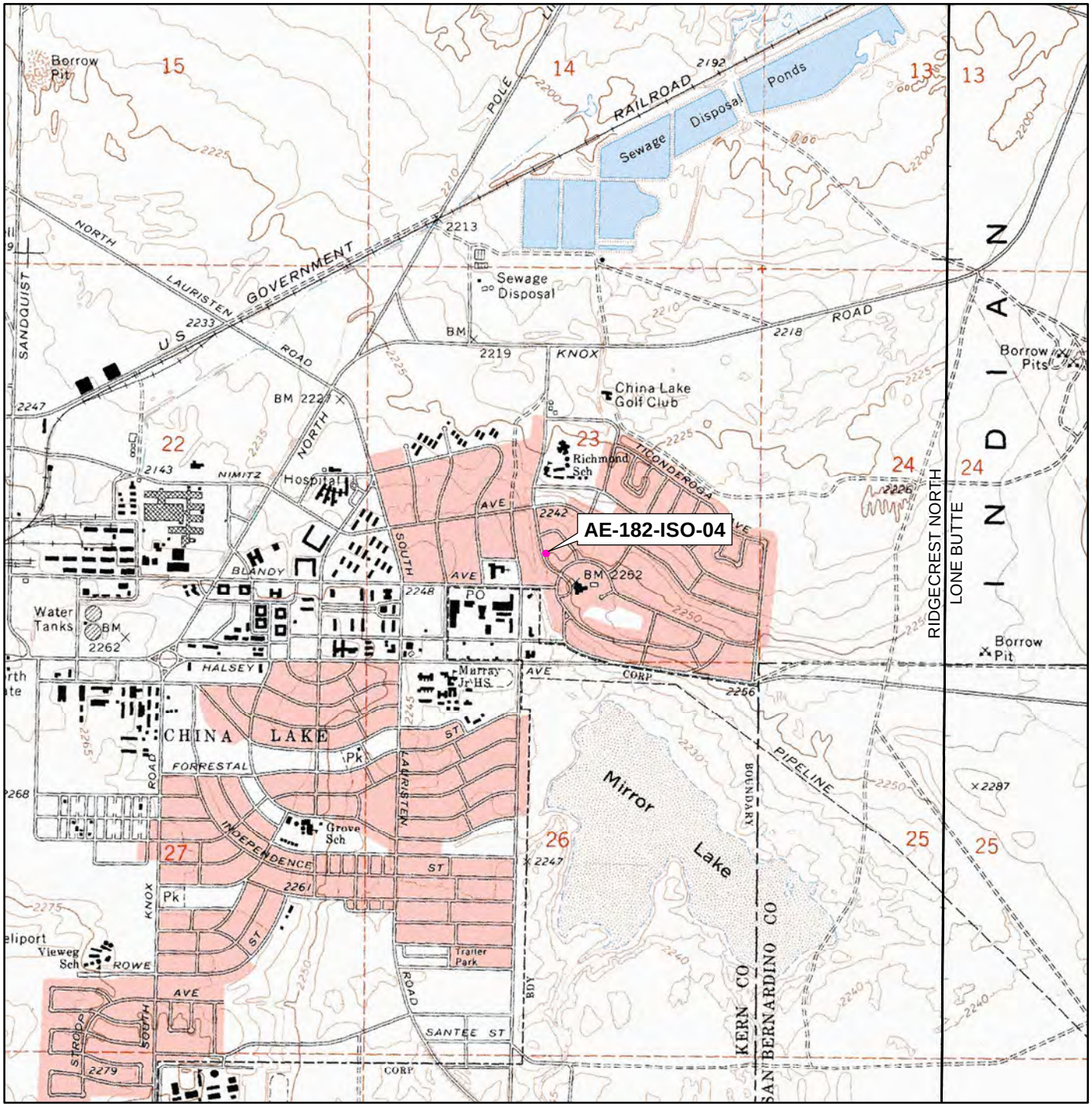
Primary #
HRI#
Trinomial

Resource Name or #: AE-3182-ISO-04

Scale: 1:24,000

Map Name: Ridgecrest South, CA, USGS 7.5' quadrangle

Date: 1973



SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

TRUE NORTH

Appendix E
Groundwater Impact Assessment

Groundwater Impact Assessment

Proposed Ridgecrest WWTP Improvements

City of Ridgecrest, California

April 2016

Prepared By:

EST. 1968
PROVOST& PRITCHARD
CONSULTING GROUP
An Employee Owned Company

1800 30th Street, Suite 280
Bakersfield, CA. 93301
Tel (661) 616.5900
Fax (661) 616.5890

Groundwater Impact Assessment

Proposed Ridgecrest WWTP Improvements

Ridgecrest, CA

Prepared for:

The City of Ridgecrest

Prepared by:

Provost & Pritchard Consulting Group, Inc.
Bakersfield, California

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ACRONYMS AND ABBREVIATIONS

AAF	Average Annual Flow
ADWF	average dry weather flow
AGR	Agriculture Supply beneficial use
Basin Plan	Water Quality Control Plan for the Lahontan Region
BNR	biological nutrient removal
BOD	biochemical oxygen demand
BPCT	best practical control technology
BQO	Basin Quality Objective
CCC	criterion continuous concentration
CMC	criterion maximum concentration
DAF	dissolved air flotation
DDW	SWRCB Division of Drinking Water
DO	dissolved oxygen
EC	electrical conductivity
FRSH	Freshwater Replenishment - beneficial use
IND	Industrial Service Supply - beneficial use
IWVWD	Indian Wells Valley Water District
MCL	maximum contaminant level
MGD	million gallons per day
mg/L	milligram/liter
MPN	most probable number
MUN	Municipal and Domestic Water Supply beneficial use
NAWS	Naval Air Weapons Station China Lake
NTU	Nephelometric Turbidity Unit
POTWs	publicly owned treatment works
RWQCB	Regional Water Quality Control Board
SAR	sodium adsorption ratio
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
US EPA	United States Environmental Protection Agency
WWTP	wastewater treatment plant
WWTF	wastewater treatment facility
µg/L	microgram/liter (same as parts per billion, ppb)
µmhos/cm	micromhos/cm

1 EXECUTIVE SUMMARY

This Groundwater Impact Assessment (Report) evaluates the environmental impacts to groundwater that could result from the disposal, recycling and storage of treated wastewater effluent discharged from the new City of Ridgecrest wastewater treatment plant (WWTP). Groundwater is the receiving water as there will be no surface discharge to drainage courses or to surface water. The potential growth of the City and Naval Air Weapons Station China Lake, along with the poor condition of the existing WWTP has led the City to initiate the design and construction of a new WWTP. The current WWTP has been in operation since 1974 and has reached the end of its functional service life and would need to be completely upgraded to restore its rated capacity of 3.6 mgd. The current average annual flow (AAF) of the existing plant is 2.1 mgd.

Growth at the China Lake NAWS is expected to drive complementary growth in the City, which will increase wastewater flows above the current WWTP capacity. A new treatment facility will need to be constructed in order to service the growing community and to replace the existing WWTP which is in poor condition. The City anticipates a two-phase construction approach, with an initial plant capacity of 3.6 mgd AAF, expandable to 5.4 mgd AAF, which will accommodate expected demands through 2050.

The new WWTP will be designed to initially produce undisinfected secondary effluent that will be discharged to four primary points of use: existing percolation evaporation ponds located on the NAWS China Lake site, existing ponds located on the City site (and subsequently to alfalfa crop irrigation), new ponds located on the City site and, after disinfection, to the China Lake Golf Course. The WWTP process will be designed to remove nitrogen to a concentration of less than10 mg/L. An upgrade to the WWTP to produce disinfected tertiary recycled water is planned to be implemented in a future phase of this project. NAWS China Lake will continue to use a portion of the effluent for irrigation of the China Lake Golf Course.

1.1 Water Quality Standards

Water quality objectives for the effluent were developed based on the Water Quality Control Plan for the Lahontan Region (Basin Plan). Both municipal (MUN) and agricultural (AGR) beneficial uses were considered, and water quality thresholds for various uses, as provided on the State Water Resources Control Board (SWRCB) website. The Basin Plan objectives generally require that constituents in the discharge not be present in concentrations that affect beneficial uses of the receiving groundwater.

In its most recent Basin Plan Update, the Lahontan Water Board removed the MUN objective from the groundwater within a designated area of the NAWS site, including the site of the WWTP facilities and existing disposal ponds, while leaving it in place for the remainder of the Indian Wells Valley. For this project, that means that only the AGR beneficial use will apply in analysis of discharge and percolation at the NAWS site, while both AGR and MUN beneficial uses will apply to the analysis of discharges and percolation at the City WWTF site. Further, AGR requirements will be analyzed in the

context of the planned cropping, which is turf grass at the China Lake Golf Course and alfalfa at the City WWTP site.

1.2 Groundwater Characterization

Existing groundwater quality within the Indian Wells Valley varies significantly depending on location and depth. The deeper groundwater, pumped by NAWS China Lake and Indian Wells Valley Water District for drinking water supply is characterized by moderate TDS averaging less than 400 mg/L. The shallow groundwater is a separate aquifer and would be the receiving water. It is characterized by TDS ranging from an average of 760 mg/L at the City WWTP site to 1,360 mg/L at the NAWS pond site. The shallow groundwater is, accordingly, not desirable for drinking water or irrigation purposes and is not currently used for any beneficial purposes. The percolation ponds at the City and NAWS sites are above the shallow aquifer and the proposed effluent is of higher quality than the shallow groundwater in almost every respect. More detailed analysis follows in subsequent chapters.

1.3 Impact of Proposed Operations on Receiving Water

The proposed operation represents a continuation of the City's WWTP effluent disposal that has been going on for more than fifty years. Additional disposal sites are being considered, in order to add disposal capacity, and proposed performance of the new treatment plant will result in higher-quality effluent, particularly with respect to nitrogen removal. In the discussions that follow, the shallow groundwater below the NAWS site and below the City site is similar enough that it is in many cases discussed together. Where there are meaningful differences in either groundwater quality between the locations, or in the standards used for analysis, the two sites receive separate discussions.

Some of the constituents in the local groundwater are present at levels that are below the drinking water maximum contaminant levels (MCLs), but the shallow groundwater is considered of poor quality for chloride, TDS and arsenic. With the following exceptions, the effluent produced by the WWTP is expected to be of higher quality than the groundwater and will not degrade the quality of the existing groundwater. The impacts for those constituents are considered to be Less Than Significant.

1.3.1 Nitrogen

Nitrogen is the sole constituent considered that will vary depending upon the alternative selected. In the current condition, and under the No Project alternative, nitrogen is not removed from the WWTP effluent. Resulting nitrogen concentrations are above the high-quality background at the City site, where the MUN beneficial use applies, and can be above the MCL. Average value is 9 mg/L but test results range as high as approximately 13.5 mg/L. The NAWS site, subject only to the AGR beneficial use, is not subject to nitrogen limitations.

The design of the new WWTP process envisioned for both Alternatives 1 and 2 will include biological nitrogen removal, and will produce nitrate at concentration levels below the MCL but above the concentration found in the groundwater. The current WWTP does not provide nitrogen removal, so the proposed effluent represents a quality improvement over the status quo. Despite that improvement, there will still be ongoing degradation of the existing high-quality groundwater with respect to nitrogen, though the resultant nitrogen concentration will be below the MCL and the MUN groundwater quality objectives. Minor incremental degradation of the groundwater nitrate concentration, which is currently less than 2.5 mg/L (as N), will occur from percolation of effluent and where effluent is applied for irrigation. Consequently, the ongoing impacts are considered to be **Significant and Unavoidable** for the City site and **Less than Significant** for the NAWS site because it does not have MUN beneficial use designation.

1.3.2 Boron

The concentration of boron in the source municipal water ranges from 0.18 mg/L to 2.1 mg/L, according to reporting from the Indian Wells Water District, the City's water purveyor. Boron concentration in the Navy water system is unknown. Shallow groundwater has not been tested for boron in routine groundwater sampling. The effluent concentration for boron comes from semi-annually testing done at the NAWS site in the existing Pond #3. Boron concentrations vary but have averaged just over 1.0 mg/L.

Groundwater in both the NAWS and City WWTP areas has not been tested for boron. Because the boron concentration in the underlying groundwater is unknown, it is presumed to be of high quality. The anticipated boron concentration of the effluent, 1.1 mg/L, is based on the average concentration in the NAWS site Pond 3. The effluent boron concentration is slightly above the notification level of 1.0 mg/L for drinking water and below the 2.0 mg/L maximum concentration for moderately-sensitive agricultural crops. It does not appear that the discharge will cause degradation with respect to boron. Because any minor degradation caused by the effluent will not result in groundwater exceeding the BQOs, this impact is considered **Less Than Significant**.

1.3.3 Total Dissolved Solids (TDS)

The Total Dissolved Solids (TDS) of the treated wastewater effluent is projected to be about 675 mg/L based on routine sampling of effluent in Pond 3 at the NAWS site. Chloride ranges from 140 to 150 mg/L with sulfate ranging from 50 to 75 mg/L. The TDS lies between the "recommended" and "upper" secondary MCL for drinking water and thus will have no detrimental impact on suitability for the MUN beneficial use when discharged to groundwater via percolation. Chloride and sulfate are both well below the recommended secondary MCL of 250 mg/L and thus will not impair the beneficial use.

The Lahontan Basin Plan water quality objective for water used for agriculture irrigation is a narrative objective without specific numeric limits. It simply states that water

designated as AGR shall not contain concentrations of chemical constituents that adversely affect the water for beneficial uses. Because of the variability of both water quality and crops grown, it is applied on a case by case basis, based on local conditions. The effluent TDS concentration will be substantially less than the groundwater TDS concentration at both the NAWS site and the City site. Therefore, no further degradation of the groundwater will take place as a result of effluent percolation at the City WWTP and NAWS ponds, and the impact is considered **Less Than Significant**.

When the effluent TDS concentration is increased in the root zone by evapo-transpiration by irrigating the golf course or the alfalfa, the concentration in the percolate past the root zone will be higher than the background at both the NAWS and City sites, degrading the quality of the groundwater with respect to TDS, at both the NAWS golf course and at the City alfalfa fields. The concentration of TDS in the groundwater leaving the root zone will exceed the AGR and MUN basin quality objectives for TDS. The addition of the TDS from the recycled water will incrementally increase the TDS of the underlying groundwater over a period of time at both the NAWS and City sites, which are **Significant and Unavoidable** Impacts. At the current time, it is highly unlikely that agriculture production will occur at the NAWS site that would utilize the shallow groundwater aquifer.

1.3.4 Coliform Bacteria

The proposed WWTP will not disinfect effluent. Natural disinfection resulting from subsurface transport down through the soil will effectively remove Coliform bacteria from both the incidental percolate and the alfalfa percolate at the City WWTP site, resulting in **Less Than Significant** impacts for coliform at this location.

At the NAWS site, disinfection performed locally by the Navy prior to irrigating the golf course will effectively remove Coliform from both the golf course percolate, resulting in **Less Than Significant** impacts for coliform at that location.

The very shallow groundwater at the NAWS site may not provide sufficient underground transport for full natural disinfection of the incidental percolation at the NAWS ponds. However there is no water quality objective for the AGR beneficial use and thus the impact is considered **Less than Significant**.

1.3.5 Conclusions

Based on the water quality assessment, the project will degrade some high quality waters in certain respects, which is a mandatory finding of significance. However, it will not affect present and anticipated beneficial uses of the water, and will not result in water quality less than the prescribed water quality objectives, except where such water is already present.

2 INTRODUCTION

The City of Ridgecrest operates a wastewater treatment and disposal facility (WWTF) that services both the City of Ridgecrest and NAWS China Lake. The wastewater treatment facility is located on an easement at the NAWS site granted to the City by the US Navy. The WWTF currently provides primary treatment followed by discharge to facultative ponds that provide supplemental treatment. Wastewater effluent is currently disposed and/or re-used at three locations:

- Percolation/evaporation ponds located on the NAWS China Lake site covering approximately 285 acres.
- Approximately 80 acres of the China Lake Golf Course
- Percolation, evaporation/storage ponds located on the City site, 4 miles south of the WWTF.
- Alfalfa crop irrigation using center pivot irrigation of approximately 33 acres at the City site.

Average dry weather WWTP flows are currently approximately 2.1 mgd. The current flow has declined over the past five years from an average of 2.7 mgd in 2010. The current waste discharge permit allows a maximum flow of 3.6 mgd. The new WWTP is proposed to have an average annual flow (AAF) capacity of 3.6 mgd with a 4.0 mgd maximum month average daily flow (MMADF). Water balances prepared for the project indicate a need to provide additional capacity to dispose of the AAF of 3.6 mgd.

The new WWTP will be designed to produce secondary undisinfected effluent with biological nitrogen removal (BNR). A future project is planned to produce Title 22 recycled water for unrestricted use for park and landscape irrigation. Initially, new percolation ponds will be constructed at the City site to provide additional disposal capacity. All existing disposal facilities, including the NAWS ponds, China Lake Golf Course and the City pond and alfalfa irrigation site will remain in full operation. ,

The project alternatives considered in this analysis include:

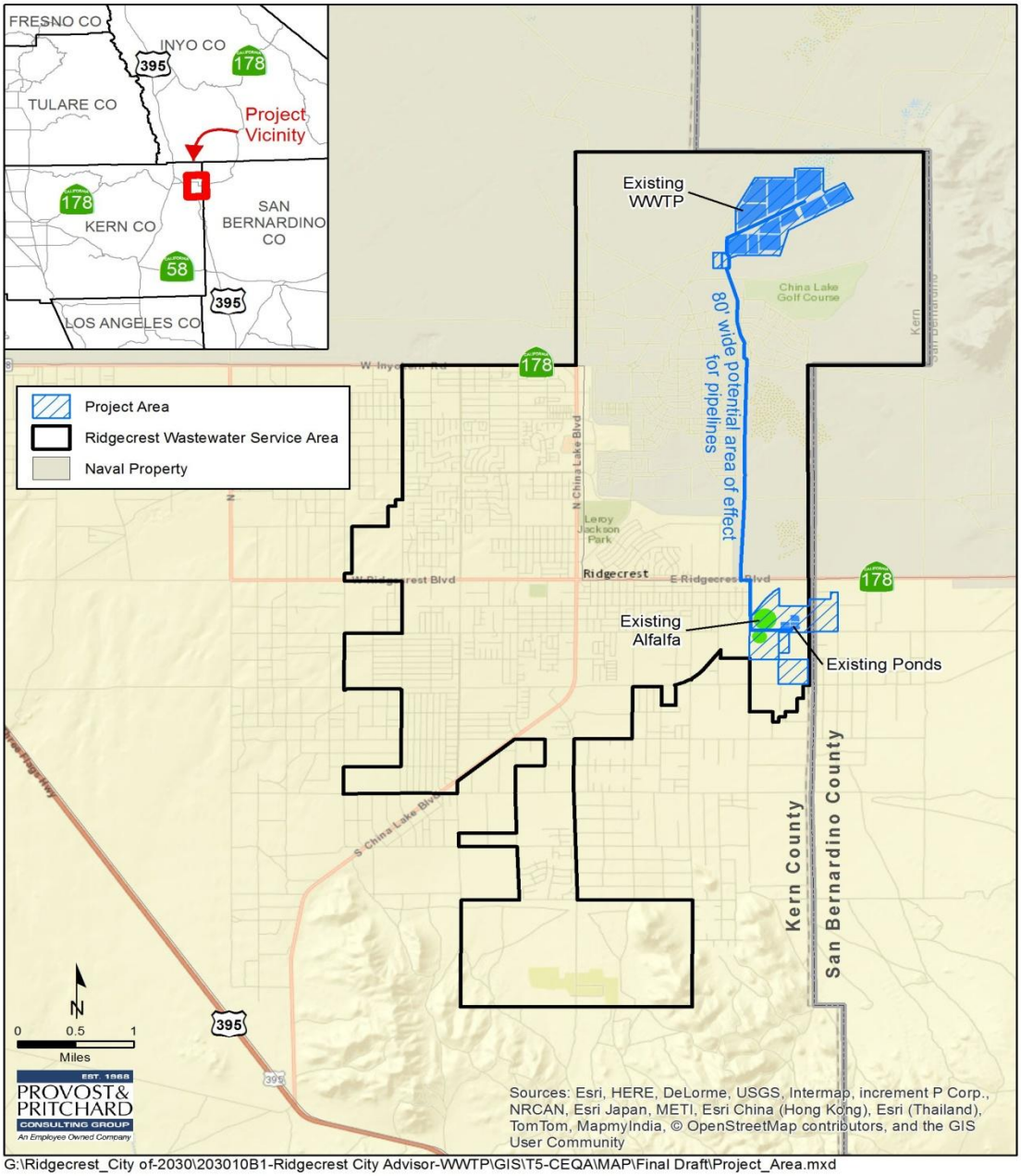
- No project: All existing treatment and disposal facilities will remain “as is”.
- Alternative 1: New WWTF built on the NAWS China Lake site with disposal occurring on the NAWS site and City site. All existing disposal facilities described above will remain in place and new percolation ponds will be constructed at the City site.
- Alternative 2: New WWTF built on the City site with disposal occurring on the NAWS site and City site. All existing disposal facilities described above will remain in place and new percolation ponds will be constructed at the City site.

With respect to wastewater effluent disposal and reuse, the latter two alternatives are identical. The annual quantity of effluent produced from the proposed WWTP at the 3.6 mgd capacity is 4,033 acre-feet per year. Initial operation, beginning in about 2020, will produce approximately 2,353 acre-feet/year.

SECTION TWO

The analysis in this report evaluates the potential groundwater impacts associated with the storage and use of effluent for each of the disposal/re-use sites.

Figure 1. Project Area



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3 REGULATORY SETTING

The Porter-Cologne Water Quality Control Act ("Porter-Cologne") provides for the regulation of water quality within the State of California. Its provisions apply to waters of the state, which is defined to mean any surface water or groundwater within the boundaries of the state. Porter-Cologne requires regional water quality control boards to adopt water quality control plans, and such plans are to include the beneficial uses of the waters to be protected, the water quality objectives necessary to reasonably protect beneficial uses, and a program of implementation. (See Water Code §§13050(j), and 13240 et seq.). Water quality control plans are otherwise referred to as "Basin Plans".

In addition to establishing water quality control plans, the State Water Resources Control Board (SWRCB) has also adopted other applicable policies. These policies include the State's Statement of Policy with Respect to Maintaining High Quality of Waters in California ("Resolution 68-16, also known as the "anti-degradation policy"), and the State's Recycled Water Policy, which was adopted in 2009. The State's anti-degradation policy in Resolution 68-16 applies to the disposal/re-use of effluent for all land discharges. The Recycled Water Policy provides direction to regional water quality control boards and others in issuing permits for recycled water projects.

Other applicable policies include the Water Quality Control Plan for the Lahontan Basin (Lahontan Basin Plan), and requirements set by the Division of Drinking Water in Title 22, Sections 60301 et seq., in the California Code of Regulations. These policies are summarized below.

3.1 State Anti-degradation Policy and Guidance

Resolution No. 68-16 was adopted by the State Water Board in 1968 and it is intended to protect the State's high quality waters. Specifically, with this policy, it was the intent and purpose of the State Water Board "that such higher quality (waters) shall be maintained to the maximum extent possible consistent with the declaration of the Legislature." The operative provisions of the policy state, in part:

1. *Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*

2. *Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not*

occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

The analysis provided herein is intended to demonstrate that the proposed discharge, storage and re-use of wastewater effluent and recycled water from the proposed City of Ridgecrest WWTF complies with Resolution No. 68-16.

3.2 State Recycled Water Policy

Adopted in 2009, the primary purpose of the State's Recycled Water Policy is to increase the use of recycled water from municipal wastewater sources in a manner that implements state and federal water quality laws. When recycled water is used in compliance with the Recycled Water Policy, Title 22 and all applicable state and federal water quality laws, the State Water Board finds that "recycled water is safe for approved uses, and strongly supports recycled water as a safe alternative to potable water for such approved uses." (Recycled Water Policy, p. 2.) The State Water Board further finds that the use of recycled water in accordance with the Policy, "which is sufficiently treated so as not to adversely impact public health or the environment and which ideally substitutes for use of potable water, is presumed to have a beneficial impact. Other public agencies are encouraged to use this presumption in evaluating impacts of recycled water projects on the environment as required by the California Environmental Quality Act (CEQA)." (Recycled Water Policy, pp. 2-3.)

With respect to the application of Resolution 68-16 to landscape irrigation, the Recycled Water Policy finds that landscape irrigation with recycled water in accordance with the policy is to the benefit of the people of the State of California, and this finding is an important component of the environmental impact analysis of a project such as this one.

The analysis presented in this report indicates that the proposed Project complies with the applicable provisions of the Recycled Water Policy.

3.3 Lahontan Basin Plan

The Implementation chapter of the Lahontan Basin Plan includes various policies with respect to wastewater reclamation. As included in the Basin Plan, the *Wastewater Reuse Policy* is as follows:

The State Board adopted a Recycled Water Policy (Res. No. 2009-0011, amended by Res. No. 2013-0003) that indicates the State and Regional Boards will exercise their authorities to the fullest extent to encourage the use of recycled water, consistent with state and federal water quality laws. The Regional Board encourages the reuse of treated domestic wastewater, and desires to facilitate its reuse. . . The need to develop and use recycled water is one factor the Regional Board will evaluate when considering exemption requests to waste discharge prohibitions. Other considerations, including potential impacts of nutrients in recycled water on aquatic life and the assimilative capacity of groundwater basins for salts and nutrients, will also apply.

The proposed Project is consistent with the *Wastewater Reuse Policy* contained in the Basin Plan.

3.4 Title 22 Recycled Water Criteria

The water recycling regulations dictating recycled water quality criteria are contained in the California Code of Regulations, Title 22, Division 4, Chapter 3, Water Recycling Criteria. The regulations are intended "… to establish acceptable levels of constituents of recycled water and to prescribe means for assurance of the reliability in the production of recycled water in order to ensure that the use of recycled water for the specified purposes does not impose undue risks to health."

The State Water Resources Control Board, Division of Drinking Water has established four levels of recycled water quality that are appropriate for different end uses. The differing qualities require different levels of treatment. Article 3 of the Water Recycling Criteria details the acceptable uses of recycled water and the corresponding quality of water required for each use.

The Project proposes to produce denitrified, undisinfected secondary effluent. Denitrified secondary treated water is defined as wastewater that has been treated using oxidation, settling and clarification, and has been biologically reacted to remove nitrogen, producing an effluent with less than 10 mg/L nitrogen and low levels of BOD and TSS (typically less than 30 mg/L of each), though with no requirements as to Coliform concentration. The recycled water produced from the proposed new WWTP will meet these requirements.

Secondary treated, disinfected, water may be used as recycled water for the irrigation of limited-access access golf courses. Disinfection is not required for irrigation of fodder and non-food crops, or for percolation and incidental recharge. The Navy disinfects a portion of the effluent after it leaves the WWTP, and uses that water to irrigate the China Lake Golf Course. This practice is planned to continue.

4 WATER QUALITY STANDARDS

In California, water quality standards are based on the beneficial uses and water quality objectives established within the applicable Basin Plan. The Lahontan Basin Plan establishes water quality standards for the groundwater underlying the Project and the proposed sites for recycled water irrigation.

4.1 Groundwater Beneficial Uses and Objectives

Groundwater beneficial uses designated for this Indian Wells Valley portion of the Lahontan Basin are contained in the Basin Plan and include agricultural (AGR), municipal (MUN), Industrial Service Supply (IND) and Freshwater Replenishment (FRSH) uses. IND designates water supply that does not depend primarily on water quality and thus it will not be affected by the project. FRSH is water used for natural or artificial maintenance of surface water quantity or quality. The high TDS in the groundwater and the absence of surface water in the area makes this beneficial use unlikely. In any case the impact analysis would be similar and analogous to the AGR use.

In 2015 the MUN (municipal) use was removed from the groundwater underlying the a portion of the NAWS site, including the site of the existing WWTP and disposal ponds, so the criteria for evaluating discharges at the NAWS site and at the City WWTP site are different. Water quality objectives for groundwater as included in the Basin Plan and are summarized in **Table 1.**

Table 1. Groundwater Quality Objectives (1)

Parameter	AGR/FRSH/IND Objective	MUN Objective
Bacteria (as Coliform organisms)	No numeric limit	1.1 MPN/100 ml (7 day average)
Chemicals:		
Chemical constituents	Not present in concentrations that adversely affect beneficial uses.	Shall not exceed MCLs and secondary MCLs in Title 22.
Radioactivity	No stated limits	Shall not exceed secondary MCLs in Cal Title 22. Table 4 of Section 64443, Title 22 of CA Code of Regulations
Tastes / odors	Shall not contain concentrations that cause nuisance or adversely affect beneficial uses	Shall not exceed secondary MCLs in Title 22

(1) These objectives apply to all groundwater.

Potential constituents of concern for AGR include, chloride, sodium, boron, TDS, and specific chemical constituents related to AGR suitability of the water. The MUN Basin

Objective is set to limit constituents in excess of the drinking water MCL for primary and secondary contaminants listed in Title 22. Thus, potential constituents of concern for MUN include Coliform bacteria, chloride, sulfate, arsenic, and TDS. Boron has also been considered a constituent of concern because of the SWRCB DDW Notification Level of 1 mg/L.

Waters designated AGR are not to contain concentrations of chemical constituents that adversely affect agricultural use. Current agricultural uses in the Indian Wells Valley include alfalfa and pistachio trees. There is limited agricultural production in the Indian Wells Valley because of the lack of water supply coupled with very high evapo-transpiration rates. Because of the location in the "high" Mojave Desert, with elevation of approximately 2,200 to 2,300 feet, it is subject to hard freezes, further limiting crop alternatives. Each crop will have various specific agricultural water quality limitations. These limitations also may vary depending on the irrigation application method, with sprinkler irrigation being the most restrictive. Additional groundwater quality objectives for agricultural use are presented in **Table 2**. This table is based on agricultural guidelines of water quality for irrigation with unrestricted use, based on Ayers and Westcot (1985). Some relaxed objectives are also available with certain levels of restricted use, with some crops being more tolerant than others.

Table 2. Agricultural Groundwater Quality Objectives

Parameter	Criteria/Objective[1] Unrestricted Use	Slight to Moderate Restriction
Boron	0.7 mg/L	0.7 to 3.0 mg/L
Chloride	<140 mg/L	140 to 350 mg/L
Trace elements	varies	varies
Sodium adsorption ratio (SAR)	<3	3-9
Total Dissolved Solids (TDS)	450 mg/L	450 to 2000 mg/L
Electrical conductivity (EC)	700 µmhos/cm	700 to 3000 µmhos/cm
1. From Irrigation with Reclaimed Municipal Wastewater A Guidance Manual, SWRCB, July 1984, Chapter 3, by Ayers & Westcot.		

The major constituents of concern in assessing the quality of water for agriculture are salinity (as measured by TDS or EC), boron, chloride and SAR. In general, human and animal uses are less sensitive than crops for these constituents. Salinity reduces crop growth by decreasing the ability of plant roots to absorb water. The salt tolerance of crops also depends on the frequency and type of irrigation. Sprinkler irrigation is most restrictive due to foliar absorption of salt. Absorption and foliar injury are further influenced by high temperature, low humidity, drying winds, type of sprinkler, and timing of irrigation.

Boron is an essential element but can become toxic to some plants when concentrations in water even slightly exceed the amount required for optimal growth. Like salt tolerance, boron tolerance varies with the climate, the soil, and the crop. While boron sensitivity appears to affect a wide variety of crops, sodium and chloride toxicities are mostly limited to tree crops and woody perennials (e.g., citrus, stone-fruit, and vineyards). A predominance of sodium relative to other ions in irrigation water (measured by SAR) may disperse soil aggregates, which in turn, affects virtually all crops by decreasing the permeability of the soil by water and air.

In determining the concentrations of salinity, boron, chloride, and sodium in groundwater associated with no adverse affects on agricultural beneficial use in the area, multiple criteria apply. The most stringent concentrations for crops that may be grown commercially in an area become the constraining criteria, and therefore the water quality objectives. Utilizing an extensive constituent list and water quality based assessment thresholds based on the Basin Plan, California primary and secondary maximum contaminant levels (MCL), and water quality standards for agriculture, numeric objectives for the narrative objectives shown in **Table 1** and **Table 2** were determined.

4.2 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. For purposes of this EIR, a project will normally have significant adverse impacts associated with water quality if it would do any of the following:

a) Violate any water quality standards or waste discharge requirements.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

c) Otherwise substantially degrade water quality.

In evaluating the effects of the proposed percolation and irrigation with effluent upon the shallow groundwater, two characteristics are of primary importance. First, for MUN drinking water use, the Maximum Contaminant Level, or MCL and the secondary MCL of each constituent, as set by the US EPA and the State of California, and second, the Basin Quality Objectives for the beneficial uses identified for the groundwater by the Lahontan Regional Water Quality Control Board in the Lahontan Basin Plan.

Each constituent found in groundwater subject to the MUN objective was compared with the MCL for that constituent. If the concentration of the constituent found in the groundwater was less than the MCL, the groundwater was determined to be of high quality with respect to that constituent, worthy of particular attention to degradation.

If the constituent concentration in the effluent was below the MCL, the potential impact was considered to be less than significant, even if the concentration was above that of the groundwater. If the constituent concentration in the effluent was above the MCL, then the proposed discharge was considered to be of potential significance, depending upon the constituent concentration in the groundwater. See **Table 3**.

Each constituent found in groundwater subject to the AGR objective was compared with the recommended limits for slight-to-moderate sensitivity agricultural usage, appropriate to the proposed turf grass and alfalfa crops, which is how the Basin Plan identifies Basin Quality Objectives for the AGR beneficial use. If the concentration of the constituent found in the groundwater was less than the recommended limit, the groundwater was determined to be of high quality with respect to that constituent.

If the constituent concentration in the effluent was below the recommended limit, the potential impact was considered to be less than significant, even if the concentration was above that of the groundwater. If the constituent concentration in the effluent was above the recommended limit, then the proposed discharge was considered to be of potential significance, depending upon the constituent concentration in the groundwater. See **Table 3**.

Constituent concentrations were compared with Basin Quality Objectives in the same manner as they were with MCLs. Significance was determined based on the relationship of the concentrations in the effluent and the groundwater. These criteria are tabulated in matrix format in **Table 3**.

Table 3 Matrix of Significance Criteria

	Effluent Concentration below MCL (MUN) or Basin Quality Objective (AGR)	**Effluent Concentration above MCL (MUN) or Basin Quality Objective (AGR)**
Groundwater Concentration below MCL (MUN) or Basin Quality Objective (AGR)	Less Than Significant	Significant and Unavoidable
Groundwater Concentration above MCL (MUN) or Basin Quality Objective (AGR)	Less Than Significant	Less Than Significant if below Groundwater Concentration Significant and Unavoidable if above Groundwater Concentration

5 SUMMARY OF AVAILABLE WATER QUALITY DATA

Because the Project is a reconstruction and expansion of the existing Ridgecrest WWTP, there are a great deal of data on the existing groundwater, source water and influent wastewater available and all will remain the same after the new plant is constructed. The new WWTP will be different from the existing plant in several respects. First, it will be designed from the outset to include biological nitrogen removal. Second, the new plant will perform more effectively in removal of BOD and TSS. No disinfection is proposed, except as separately provided by the Navy prior to golf course irrigation, so no specific level of Coliform bacteria will be targeted.

In lieu of evaluating existing recycled water data as would be done with an existing treatment plant, the quality of the intended surface water supply and estimates of potential recycled water quality based on the proposed level of treatment at the WWTP have been used to compare to applicable water quality objectives. Based on this comparison, as well as identifying constituents known to be of concern to the Water Board, this analysis then determined if the proposed Project will degrade local groundwater below water quality objectives, or degrade high quality waters for these constituents of concern.

This section summarizes the available water quality data that was used to estimate recycled water quality, as well as data that was used to determine if the proposed use of recycled water for agricultural and golf course irrigation will degrade groundwater quality below applicable water quality objectives, or degrade existing high quality waters. The assembled data are summarized in **Table 4** through **Table 8** below.

5.1 Source Water Supply Quality

Source water for the City of Ridgecrest and NAWS China Lake consists entirely of groundwater supplied by either the Indian Wells Valley Water District (IWVWD) or the US Navy.

Table 4 presents a summary of water quality for selected constituents in the potable source water that is supplied by IWVWD to City residents and water customers in its consumer confidence report. Similar data was not available from the Navy, but the groundwater quality is generally similar. As can be seen in the table, none of the constituents in the source water surpass their MCLs. Prior to 2011 the City of Ridgecrest was experiencing high levels of arsenic in their drinking water. Following the 2006 change in the MCL of arsenic to 10 µg/L, IWVWD installed arsenic-removal treatment facilities to remove the arsenic and decrease the levels to below the MCL. Since that time, the levels have consistently been below the revised MCL.

Table 4. Potable Water Supply Data Summary – Indian Wells Valley Water District

Constituent	Average Concentration	Range	Units
Regulated (Primary MCL)			
Arsenic	3.3	2.0-7.9	µg/L
Nitrate (as NO_3)	5.8	ND-12.0	mg/L
Nitrate + nitrite (as N)	1.35	ND-2.7	mg/L
TTHMs	2.7	ND-5.8	ppb
Fluoride	0.7	0.4-1.4	mg/L
Secondary MCLs			
TDS	347	210-890	mg/L
Electrical Conductivity (EC)	558	330-1600	µmhos/cm
Chloride	81.3	22-410	mg/L
Sulfate	38.4	20-67	
Calcium	24	3.4-37	mg/L
Unregulated Substances			
Boron	0.63	0.18-2.1	mg/L
Hardness	71.9	8.5-110	mg/L
Magnesium	2.9	ND-5.8	mg/L
Sodium	71.8	39-260	mg/L
pH	8.1	7.5-8.9	su

Listed concentrations are taken from the 2014 Consumer Confidence Report published by the Indian Wells Water District for the City of Ridgecrest water system and are considered representative of the 2014 average quality of supply water. Data for NAWS China Lake is not available.

Copper and lead tests were also performed on the water; the results of these tests can be seen below in **Table 5**.

Table 5. Source Water Copper and Lead Tests

Substance	Unit	Year	Violation	AL	PHG	Amount Detected
Copper	mg/L	2012	No	1.3	0.3	0.05
Lead	µg/L	2012	No	15	0.2	ND

Listed concentrations are taken from the 2014 Consumer Confidence Report published by the Indian Wells Water District for the City of Ridgecrest water system.

Copper and lead concentrations are presumed to result from corrosion of household plumbing systems, particularly copper water services and lead plumbing fixtures, which are predominantly found in older housing units. Other sources can include the erosion of natural deposits and discharges from industrial manufacturers. The reported copper concentrations are low at roughly one-sixth of the Public Health Goal and the impact they have on the overall water quality is therefore considered insignificant. No lead was detected in the source water tests, and therefore no significant impact was found.

5.2 WWTF Effluent Quality

The presumed water quality with respect to inorganic chemicals and metals is based on semi-annual monitoring of Pond 3 at the existing WWTP. Pond 3 is a facultative pond that receives primary effluent from the WWTF prior to discharging water for golf course irrigation, pumping to the city site alfalfa irrigation site and discharge to the NAWS disposal ponds. Pond 3 is essentially a composite of wastewater effluent received over the prior month of discharge. A summary of Pond 3 selected water quality parameters for 2012 through 2015 is summarized in **Table 6**. With respect to BOD, TSS and total nitrogen, the presumed water quality is based on the design performance of the WWTP.

Table 6. Pond 3 Effluent

Date	Boron (mg/L)	TDS (mg/L)	Cl (mg/L)	As (µg/L)	Na (mg/L)	SO_4 (mg/L)
7/6/12	1.1	680	160	7.0	190	65
2/13/12	1.1	640	150		170	54
7/31/13	1.1	690	160	6.4	180	67
1/21/13	0.9	700	140		170	53
7/23/14	1.2	690	160	4.9	180	75
1/22/14	0.97	660	150		160	50
7/20/15	0.98	630	140	6.2	160	60
1/20/15	1.1	700	150		160	54
12/31/15	1.0	670	140		170	67
Average	**1.1**	**673**	**150**	**6.1**	**171**	**61**

5.3 Shallow Groundwater Quality Summary

The Indian Wells Valley groundwater basin is described as a closed internally drained basin. The surrounding mountains slope toward China Lake, a dry lakebed. The valley fill consists of unconsolidated alluvial deposits that are about 2,000 feet thick in the southwestern part of the valley. In the eastern and central part of the valley, the lithology varies greatly. The valley is considered to have two main aquifers: a shallow aquifer that is about 300 feet deep and a deep aquifer. The shallow aquifer overlies the deep aquifer in the eastern part of the valley. The deep aquifer is about 1,000 feet thick and is the primary source of drinking water. The shallow groundwater is of poor quality, being very high in arsenic, chlorides and TDS.

The City maintains seven groundwater monitor wells in the shallow aquifer, four on the NAWS site and three at the City site. These monitor wells have been sampled semi-annually since August 2000 as required by the RWQCB monitoring and reporting program. Constituents sampled are shown in **Table 7**.

Table 7. Analytical Suite for Groundwater Monitoring

Parameters	Units	Frequency
Anions and General Parameters	mg/L	Semi-annually
Ammonia	mg/L	Semi-annually
Chloride	mg/L	Semi-annually
Methylene Blue Active Substances (surfactants)	mg/L	Semi-annually
Nitrate as Nitrogen	mg/L	Semi-annually
Total Kjeldahl Nitrogen	mg/L	Semi-annually
Total Dissolved Solids	mg/L	Semi-annually
Organic Compounds		
Base/Neutral/Acid Extractable Organics	mg/L	Annually
Purgeable Halocarbons	mg/L	Annually
Polycyclic Aromatic Hydrocarbons	mg/L	Annually
Metals		
Arsenic		
Cadmium	mg/L	Annually
Chromium	mg/L	Annually
Copper	mg/L	Annually
Lead Mercury	mg/L	Annually
Molybdenum	mg/L	Annually
Nickel	mg/L	Annually
Selenium	mg/L	Annually
Silver	mg/L	Annually
Zinc	mg/L	Annually

Wastewater Treatment Facility, Ridgecrest, CA., Wastewater Discharge Permit Nos. 6B150116001 and 6B159101001

A review of the 14 years of sample results indicates that the constituents of concern for the NAWS site with the AGR beneficial use are TDS and chloride (BSK Winter 2014 Groundwater Monitoring Report, City of Ridgecrest Wastewater Treatment Facility, February 2014). . Boron is not required to be sampled and there is no data on boron. Chloride in the groundwater exceeds the unrestricted criteria objective (**Table 2**) for all monitor wells but is within the acceptable use range for crop irrigation with slight to moderate restriction. Chloride levels in the latest sample event ranged from 170 mg/L to 390 mg/L. TDS in the groundwater at the NAWS site ranges from 1,100 to 1,500 mg/L, both well above the criteria objective for unrestricted AGR use (**Table 2**) of 450 mg/L. It is, however, within the criteria objective of 450 to 2,000 mg/L for use with slight to moderate restriction.

At the City site, both the MUN and AGR beneficial uses apply. The underlying groundwater exceeds the MCL for arsenic, exceeds the recommended secondary MCL of 500 mg/L for TDS, but is less than the upper limit of 1,000 mg/L. It exceeds the recommended limit for chloride in one monitor well and is within the limit in the other two monitor wells. With the exception of arsenic, all metals were well below their respective

drinking water MCLs or action limits. The groundwater is of high quality with respect to all other drinking water standards. For AGR use, the groundwater falls within the slight to moderate restriction.

Quality results can be seen in **Table** 8**8** below, reproduced from Table 1-1 of the Facility Plan Update. Location of the groundwater wells is shown on the following page on **Figure 2** from the BSK Groundwater Monitoring Report.

Table 8. Groundwater Quality

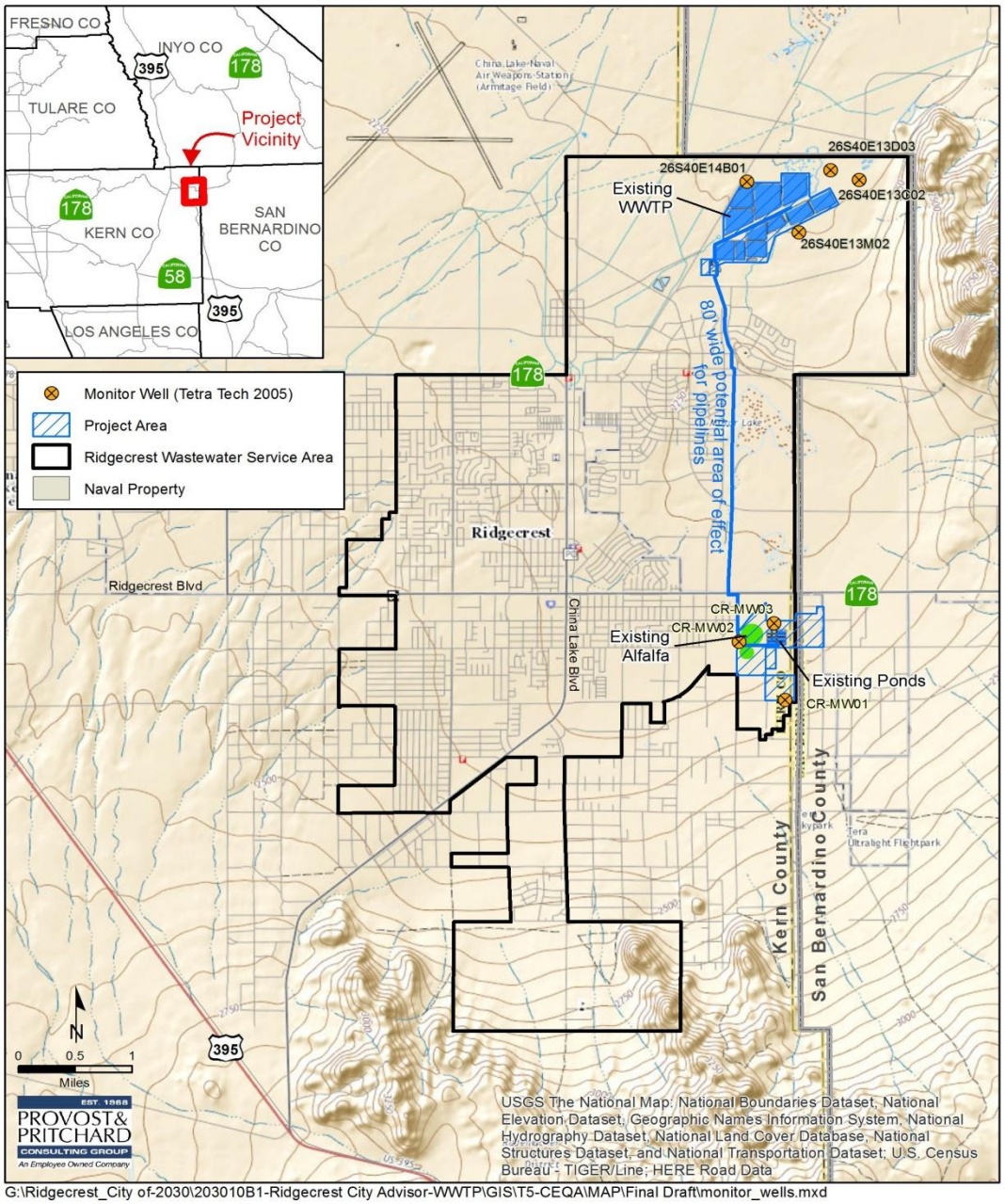
Table 1-1. Monitor Well Groundwater Quality Summary

	NAWS WWTP Wells				City Site Wells		
	26S40E14B01	26S40E13D03	26S40E13C02	26S40E13M02	CR-MW01	CR-MW02	CR-MW03
Groundwater Elevation	2179.57	2178.71	2182.59	2180.55	2159.05	2161.09	2159.36
Ammonia (NH4) mg/L	0.35	0.13	0.15	0.18	0.16	0.17	0.13
Chloride mg/L	290	390	270	170	320	220	210
Nitrate as N mg/L	<1.1	<2.2	<1.1	<0.6	2.5	1.2	1.5
TKN mg/L	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TDS mg/L	1400	1500	1200	1100	740	760	780
Surfactants (MBAS) mg/L	0.21	0.24	0.096	0.09	<0.05	<0.05	<0.05
Arsenic, µg/L	520	550	260	380	43	9.9	10

Of note is that while the groundwater surface elevations are relatively consistent between the NAWS and City sites, the ground surface elevation at the NAWS site is over 100 feet lower. Therefore the typical depth to groundwater at the NAWS site ranges from 7 to 20 feet, while at the City site the depth to groundwater ranges from approximately 107 to 171 feet. (Facility Plan, Section 1.4.5.)

The groundwater at the NAWS site was evaluated with respect to the AGR basin objectives, and the groundwater at the City site was evaluated with respect to the MUN and AGR basin objectives.

Figure 2, Groundwater Well Map



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6 PROJECTED EFFLUENT QUALITY

The effluent quality from the proposed new WWTF facility is based on the proposed project design criteria as shown in **Table 9.** Inorganic chemicals and metals in the effluent are assumed to be the same as they are now because the treatment process will not affect these constituents. The presumed water quality for inorganic chemicals and metals are based on sampling from the existing Pond 3 (Table 6).

Table 9. WWTP Influent and Projected Performance

Design Criteria	Phase 1/2
Average Annual Daily Flow (AAD)	3.6 mgd
Average Day, Maximum Month Flow (ADMM)	4.0 mgd
Maximum Day Flow (MDF)	4.7 mgd
Average Influent BOD_5	270 mg/l
Average Influent TSS	270 mg/L
Average Influent TKN	40.5 mg/L
Effluent BOD_5	30 mg/L
Effluent TSS	30 mg/L
Effluent Total Nitrogen	<10 mg/L

6.1 Treatment Technology

The Project proposes to treat wastewater using biological and physical processes to achieve secondary-quality recycled water with nitrogen removal. The process will be an oxidation ditch design with nitrification/de-nitrification and secondary clarification. The denitrification process was selected because it is considered best practicable control; technology (BPCT) for nitrogen removal. No disinfection is proposed at the WWTP. The Navy currently chlorinates effluent it receives from the City for disinfection before irrigating the golf course. This practice is planned to continue after construction of the new WWTP. A future process is planned to produce tertiary disinfected recycled water with an initial capacity of 1.8 mgd. When that process is implemented filtration and disinfection will be added to the WWTF. The effluent BOD and TSS will improve to an anticipated 10 mg/L, with other constituents mostly unchanged.

The WWTP will include additional features designed for compliance with the waste discharge requirements expected to be issued by the Water Board, to protect groundwater beneficial uses and intended to provide consistent, reliable delivery of recycled water at the expected quality. WWTP features to provide this assurance will include the following:

- Emergency power generation facilities sufficient to operate necessary process units.

- Redundant machinery and components as needed to allow uninterrupted operation during loss of any single device.

- Automated control, monitoring and alarm systems.

- Process ability to remove nitrogen to 10 mg/L or less, (measured as Nitrogen), consistent with the primary MCL.

- Compliance with requirements for monitoring of effluent BOD and other constituents as specified in the anticipated Waste Discharge requirements.

Error! Reference source not found.10 presents a summary of the predicted concentrations of known substances and constituents of concern in the proposed wastewater effluent. With the exception of Total N, these were derived from sampling from Pond 3 (**Table 6**).

Table 10. Projected Effluent Water Quality from Proposed WWTP

Constituent	Projected Effluent Concentration	Units	Controlling Factor
Chloride	150	mg/L	Source Water Supply
TDS	670	mg/L	Source Water Supply, community contribution
Total Nitrogen	<10	mg/L	Treatment Plant Performance
Arsenic	6.1	µg/l	Source Water Supply
Boron	1.1	mg/L	Source Water Supply

The nitrate (as N) levels in the planned effluent are projected to be , 10 mg/L due to a nitrogen removal process that will be incorporated in the design of the facility. This plant will produce undisinfected secondary treated water that will be used for percolation and irrigation purposes, shown below in **Error! Reference source not found.11** as the lowest-quality recycled water acceptable for any sort of reclamation, with the most limited possibilities for reuse.

The disinfection provided by the Navy prior to golf course irrigation raises the quality of that portion of the effluent to Disinfected Secondary -23. In either case, the water can be permissibly used for turf irrigation. Although the new WWTP will not initially disinfect the water, the future expansion phase will allow for the addition of a filtration and disinfection process for future Title 22 unrestricted use.

Table 11. Title 22-Permitted Recycled Water Uses

Recycled Water type	Treatment Process	Approved Uses	Median Coliform (MPN/100 ml)
Disinfected Tertiary	Filtered and Disinfected	Spray Irrigation of Food Crops, Unrestricted Landscape Irrigation Recreational Impoundment	2.2
Disinfected Secondary - 2.2	Oxidized and Disinfected	Surface Irrigation of Food Crops Restricted Recreational Impoundment Surface Irrigation of Orchards and Vineyards	2.2
Disinfected Secondary - 23	Oxidized and Disinfected	Pasture for Milking Animals, Landscape Irrigation, Landscape Impoundment	23
Undisinfected Secondary	Oxidized	Fodder, Fiber and Seed Crops	-

7 CONSTITUENTS OF CONCERN

Based on available surface and groundwater data, source water data and estimated recycled water concentrations, a limited number of constituents have been identified as constituents of concern for further analysis. In addition, other select constituents that may be of particular interest to the Water Board have been included for further analysis. The constituents of concern that are addressed within this report are listed below in **Table 12** and **Table 13** for the NAWS site and the City site, respectively.

Table 12. Potential Constituents of Concern for the Proposed WWTP Recycled Water, NAWS Disposal Sites Subject to AGR Basin Objectives

Chemical	Units	Estimated Effluent Water Quality	AGR BQO	Existing GW Conc., NAWS Site	High Quality Ground-water?	Level of Significance	Groundwater Degradation	Constituent of Concern
Chloride	mg/L	150	(1)	180 -390	N	Less than Significant	N	Y
TDS	mg/L	675		1,100 - 1,500	N	Less than Significant	N	Y
Boron	mg/L	1.05		unknown	unknown		unknown	Y

Projected effluent concentrations are based on estimated plant performance and existing source water quality.

1 Basin Plan provides narrative objective only. Actual objective is dependent on crop to be irrigated.

As can be seen in **Table 12**, chloride, TDS and boron are listed as constituents of concern. The Basin Plan provides only a narrative water quality objective for chemical constituents. These three constituents fall into the category indicating that there would be slight to moderate restriction in the use of this water. Consequently, some crops may be suitable for irrigation with the groundwater while others may not. Some yield reduction may occur. Alfalfa and turf grass can be irrigated with the proposed effluent. A more detailed assessment of the effect these constituents have on the groundwater supply is in the following sections.

Groundwater is designated as “high quality” for a constituent if the concentration is below the Basin Quality Objective (BQO). The local groundwater is considered to be “High Quality” for nitrogen and boron.

Table 13. Potential Constituents of Concern for the Proposed WWTP Recycled Water, City Disposal Site Subject to MUN Basin Objectives

Chemical	Units	Estimated Effluent Water Quality(1)	MCL (MUN BQO)	Existing GW Conc., City Site	High Quality Ground-water?	Level of Significance	Groundwater Degradation	Constituent of Concern
Chloride	mg/L	150	250-500	>750	N	Less than Significant	N	N
Total N	mg/L	<10	10	1.2 - 2.5	Y	Significant	Y	Y
TDS	mg/L	675	500-1000	740 - 780	N	Less than Significant	N	Y
Boron	mg/L	1.05	(2)	unknown	Y	Less than Significant	N	Y
Arsenic	µg/L	6	10	21	N	Less than Significant	N	N
Coliform	MPN	undisinfected	1.1	-	Y[3]	Less than Significant	N	N

1 Projected effluent concentrations are based on estimated plant performance and existing source water quality.
2 Neither the State of California nor USEPA have MCLs for boron. State action level is 1 mg/L.
3 Effective concentration by the time the effluent percolates through over 100 feet of soil to reach the shallow groundwater. Actual effluent concentration leaving the WWTP is >22 MPN.

As can be seen in **Table 13**, the effluent exceeds the recommended MCL for TDS but is below the upper limit of 1,000 mg/L. For chloride the limit is below the recommended level. Although total nitrogen in the effluent will cause degradation of the high quality groundwater with respect to nitrogen, the degradation is minor. Groundwater monitor results over the past 14 years do not show significant degradation of the groundwater. A more detailed assessment of the effect these constituents have on the groundwater supply is in the following sections.

Groundwater is designated as “high quality” for a constituent if the concentration is below the MCL. The local groundwater is considered to be “High Quality” for nitrogen and is unknown for boron.

For both sites, if the groundwater was determined to be high quality water for a specific constituent, it was evaluated to determine if the proposed discharge would cause significant degradation of the high quality water. The thresholds of significance are detailed in Section 4.2 above. The effluent concentrations of the constituents assessed were estimated based on current and planned future WWTP performance.

Existing background groundwater concentrations of chloride and arsenic exceed the MCL, the basin quality objectives and the projected effluent concentrations, so the effluent will not degrade the groundwater for these constituents at either site.

TDS in the both groundwater and the projected effluent discharge exceed the MCL recommend standard for drinking water and the basin quality objectives at both sites, however, the groundwater concentration is higher than the projected effluent concentration and there will be no further groundwater degradation as a result of the proposed discharge.

Where the quality of the receiving water for a particular constituent of concern is unknown, due to there being insufficient information to make a determination, it is assumed to be of high quality and is addressed accordingly. Each constituent of concern is addressed in more detail in Section 7.2 below.

7.1 Method of Reclamation

Effluent from the new WWTP will be pumped to one of several disposal/re-use sites, which include:

- Percolation/evaporation ponds at the NAWS WWTP site
- Irrigation of the China Lake Golf Course at NAWS
- Irrigation of the alfalfa fields owned by the City, at the City site
- New and existing percolation ponds at the City site.
- Future recycled water landscape and park irrigation.

The two irrigation sites will receive water during months when irrigation is agronomically necessary, and will receive only enough water to meet the agronomic needs of the grass and crops without over-watering. This water will be stored in ponds at the NAWS site and the City site. The balance of the effluent will percolate and evaporate from the pond complex on the NAWS and City sites. The application of effluent and fertilizers will be based on an Irrigated lands farm and nutrient management plan.

The shallow groundwater at the two sites is of slightly different character, and is governed by different basin quality designations, so each site is evaluated separately below.

7.2 Analysis of Impact of Proposed Reclamation on Identified Constituents of Concern for Groundwater

The groundwater analysis in **Tables 12 and 13** are used as the baseline for analysis of applications at all three sites (NAWS ponds, NAWS golf course and City site – ponds and alfalfa). The effects of individual constituents of concern are discussed below.

7.2.1 Total Nitrogen

Groundwater in the area of both the NAWS site and the City site appears to be of high quality for nitrate and nitrite. Nitrite is produced as an intermediate product in the biological nitrification process, and would only be present in the recycled water (above the detection limit) when partial nitrification of ammonia occurs. The aeration reactor design and corresponding mean cell residence time for the proposed WWTP will be designed to be sufficiently long to ensure that complete nitrification occurs prior to recycled water use.

The nitrate form of nitrogen will remain after nitrification but will then be removed by the treatment process through an anoxic step known as denitrification. Consequently, the resulting recycled water will contain low but measurable levels of ammonia and nitrate. Total Nitrogen (consisting mainly of Nitrates plus organic nitrogen) in the effluent will be <10 mg/L, below the applicable MCL and MUN BQO of 10 mg/l, but above the background, which ranges from 0.6 to 2.2 mg/L at the NAWS site and from 1.2 to 2.5 mg/L at the City site. The following sections break down the impacts to the two sites and separate the analysis by application method.

7.2.1.1 NAWS Percolation/evaporation Ponds

The receiving groundwater is overall a poor quality water. The nitrogen concentration of the effluent is expected to be <10 mg/L .The MUN beneficial use does not apply at the NAWS site. For the AGR beneficial use, there is no BQO numeric limit for nitrogen. Consequently, the impacts at this site are **Less Than Significant**. The “no project” alternative and Alternative 1 and 2 all have identical impacts.

7.2.1.2 City Percolation Ponds

The receiving water at the City site is high quality for nitrogen, with concentrations measured in the range from <1.2 mg/L to 2.5 mg/L, though it is overall a poor quality water. The MUN beneficial use applies at the City site. Under the current condition and the No Project alternative, no nitrogen is removed from the effluent by the WWTP process, and the concentration of nitrogen is and would remain above both the background. The average value of 9 mg/L is near the MCL, but test results range as high as 13.5 mg/L, making this a **Significant and Unavoidable** impact.

Due to the biological nitrogen removal process envisioned for the new WWTP, the nitrogen concentration of the effluent under both Alternative 1 and Alternative 2 is expected to be <10 mg/L, below the MCL of 10 mg/L, although it would remain measurably above the nitrogen concentration of the high-quality background, continuing to cause degradation. Although the degradation occurring would no longer tend to cause the groundwater to exceed the MCL for nitrogen, it will continue to increase concentration of nitrogen above background, which is a **Significant and Unavoidable** Impact.

It should be noted that the background remains of high quality even though the existing WWTP does not have biological nitrogen removal capability and effluent is currently

being disposed in the manner proposed for the Project. Alternative 1 and Alternative 2 will increase the number of percolation ponds over the "no project" alternative, but will not affect effluent flow rate, and will discharge effluent with reduced nitrogen, mitigating the impact to the greatest degree practical.

7.2.1.3 Nutrient Balance – NAWS Golf Course

In the current condition and under the No Project alternative, the nitrogen concentration in the effluent averages approximately 10 mg/L, which results in an annual application of 133 lbs/ac of nitrogen to the grass at the China Lake Golf Course, below the agronomic need of 225 lbs/ac for Bermuda grass, as listed in the Western Fertilizer Handbook, Table 4-1. The AGR beneficial use does not include a nitrogen limit, so this impact is considered **Less Than Significant**.

Under Alternative 1 and Alternative 2, the contribution of nitrogen from the recycled water is approximately 105 lbs/ac, a reduction but not a substantial change. The AGR beneficial use does not include a nitrogen limit, so this impact is considered **Less Than Significant**.

It should be noted that the irrigation of the golf course is already on-going in the current condition, and there will be no change in irrigation rate or practice under Alternative 1 or Alternative 2. Irrigation with recycled wastewater effluent is encouraged by state policy and is presumed to have a beneficial impact so long as other environmental regulations are met. The nitrogen removal proposed by the Project will mitigate the impact to the greatest degree practical. With proper nutrient management of the golf course, the turf grass will assimilate most nitrogen applied, thus minimizing its potential effect on groundwater.

7.2.1.4 Nutrient Balance – City Alfalfa Fields

In the current condition and under the No Project alternative, the nitrogen concentration in the effluent averages approximately 9 mg/L, which results in an annual application of 128 lbs/ac of nitrogen to the alfalfa at the City site, less than the agronomic need of 380 lbs/ac for alfalfa, as listed in the Western Fertilizer Handbook, Table 4-1. Under the No Project Alternative, Alternative 1 and Alternative 2, the contribution of nitrogen from the recycled water is much less than the 380 lbs/ac agronomic needs of the alfalfa. Effectively all nitrogen will be taken up and used by the growing crop and will not degrade the groundwater, so this impact is considered **Less Than Significant**.

It should be noted that the continued irrigation of the alfalfa field is part of the current condition and will continue without change to irrigation rate or practice in both Alternative 1 and 2. Irrigation with recycled wastewater effluent is encouraged by state policy and is presumed to have a beneficial impact so long as other environmental regulations are met. The nitrogen removal proposed by the Project will mitigate the impact to the greatest degree practical.

7.2.2 Boron

There are no numeric groundwater quality objectives for boron concentration for AGR-designated groundwater in the Lahontan basin. Water designated as AGR "…shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses." Crop sensitivity to boron varies from a low of 0.5 mg/L for the most sensitive crops to up to 15 mg/L for very tolerant crops. For example, alfalfa, a crop commonly grown in the Indian Wells Valley, is a tolerant crop that can be irrigated with water with a boron concentration of 4.0 to 6.0 mg/L. The most sensitive crops, including citrus, blackberries, stone fruits and grapes are not commonly grown in the area. The anticipated effluent quality of about 1.0 mg/L will allow for irrigation of all but very sensitive and sensitive crops.

There is no State or Federal MCL for boron; however the SWRCB DDW has a Notification Level (action level) of 1.0 mg/L. Notification levels are non-regulatory health based advisory levels established by DDW for chemicals in which MCLs have not been established. Though, assuming the groundwater quality is below 1.0 mg/L, this discharge may slightly degrade the presumed high-quality background, this impact will not impair the MUN beneficial use at the City site. At the NAWS, site there is no MUN beneficial use and therefore there is no drinking water impact. Because the effluent will have a boron concentration of about 1.0 mg/L, the use the effluent or the receiving groundwater for AGR will be limited, in the worst case, to irrigation of moderately sensitive and less sensitive crops that will tolerate 1.0 mg/L of boron and above. These impacts are considered to be **Less Than Significant**.

It is noted that for the NAWS site, there is no change in the quantity or quality of boron in the effluent and thus the impact of the proposed Alternatives 1 or 2 will be the same as the no project alternative. As boron enters the groundwater table, there will be limited mixing and transport of boron with the groundwater. The mixing will further dilute the boron concentration. Any potential degradation, however unlikely, would remain within both the AGR and MUN basin quality objectives. No additional mitigation measures are available.

7.2.3 Total Dissolved Solids (TDS)

7.2.3.1 NAWS Golf Course Reclamation Area

For analysis of potential impacts from recycled water use, it was estimated that recycled water from the WWTP will have a TDS of about 675 mg/L. For purposes of this analysis, the AGR water quality objective for TDS of 450 mg/L was used, though depending upon the crop the actual tolerance to TDS in the water can be higher or lower than that. The local groundwater at the NAWS site has a TDS concentration of 1,100 to 1,500 mg/L, much higher than many crops will tolerate.

With respect to effects on groundwater from the application of recycled water to the irrigation areas, other factors including evaporation, precipitation and dilution will affect the impact the recycled water has on groundwater TDS concentrations. The required infiltration rate needed to percolate the planned quantity of effluent over the acreage of

ponds available in less than 0.10 inch/day. Based upon percolation tests at the NAWS site, long-term percolation rates are expected to greatly exceed that value, at more than 1.0 inch/day. Average precipitation is 4.27 inches/year.

TDS in the percolate below the root zone will be multiplied as a result of the irrigation efficiency at the golf course site. Assuming 75 percent irrigation efficiency for sprinklers, the TDS in the deeper percolate will be multiplied by a factor of 4.0. An analysis of that effect is shown in **Table 14**.

7.2.3.2 City Alfalfa Reclamation Area

Recycled water from the WWTP will have a TDS of 640 mg/L. The MUN BQO is the MCL of 1000 mg/L, which is the upper limit for municipal water supply.

With respect to effects on groundwater from the application of recycled water to the irrigation areas, other factors including evaporation and precipitation will affect the impact the recycled water has on groundwater TDS concentrations. The required infiltration rate needed to percolate the planned quantity of effluent over the acreage of ponds available in less than 0.10 inch/day. Based upon percolation tests at the City site, long-term percolation rates are expected to greatly exceed that value, at more than 1.0 inch/day.

TDS in the percolate below the root zone will be multiplied by 4.0 as a result of the irrigation efficiency. An analysis of that effect is shown in **Table 14**.

Table 14. TDS in Percolate Below the Root Zone

	Golf Course	Alfalfa
Recycled Water Applied (acre-feet)	385.02	73.25
Effective Precipitation (acre-feet)	28.53	11.87
Total Water Applied (acre-feet)	413.55	85.12
Percentage Recycled	93%	86%
Percentage Precipitation	7%	14%
Recycled Water TDS (mg/L)	675	675
Precipitation TDS (mg/L)	0	0
Irrigation Efficiency	75%	75%
Local Shallow Groundwater TDS	1069	1069
Deep Percolation Groundwater TDS (mg/L)	2514	2323

The proposed reclamation will degrade the quality of the groundwater with respect to TDS, at both the NAWS golf course and at the City alfalfa fields. The concentrations of TDS in the groundwater leaving the root zone will exceed the AGR and MUN basin quality objectives for TDS. The addition of the TDS from the recycled water will increase the TDS of the groundwater above the basin quality objectives at both the NAWS and City sites, which are **Significant and Unavoidable** Impacts.

This impact occurs wherever groundwater or surface water is used for irrigation and is unavoidable wherever evapo-transpiration exceeds available precipitation. The impact is the same for the current condition as it is for Alternative 1 and 2. Irrigation with recycled wastewater effluent is encouraged by state policy and is presumed to have a beneficial impact so long as all other environmental regulations are met. No practical mitigation for this impact is available.

7.2.3.3 NAWS Percolation/Evaporation Ponds

Effluent from the WWTP will have a TDS of 675 mg/L. The AGR beneficial use objective of 450 mg/L was used as the applicable water quality standard. The concentrations of TDS in the groundwater exceed the agricultural quality objective for TDS. However, the shallow groundwater does not meet beneficial use objectives, and in fact is not used at all. The concentration of TDS in the effluent, while exceeding the agricultural objective, is still less than the TDS concentration in the groundwater beneath the NAWS site (1,360 mg/L) and will not cause degradation. Therefore this is a **Less Than Significant** Impact.

7.2.3.4 City Percolation Ponds

Effluent from the WWTP will have a TDS of 675 mg/L. The MUN beneficial use objective of 1000 mg/L was used as the applicable water quality standard. The concentration of TDS in the groundwater is less than the Basin Quality Objective for TDS at the City site. The shallow groundwater meets the beneficial use objectives, at 760 mg/L TDS. The concentration of TDS in the effluent is less than the secondary MCL upper limit and less than the TDS concentration in the groundwater beneath the City site and will not cause degradation. Therefore this is a **Less Than Significant** Impact.

7.2.4 Total Coliform

There is no data available to determine if groundwater in the area is of high quality for total Coliform organisms. As noted above, the recycled water will not be disinfected as part of the wastewater treatment process. However, percolation to groundwater has a natural disinfection effect. Percolation through more than approximately 100 feet of soil in route to the shallowest groundwater, as at the City site, provides necessary time for pathogens to be destroyed in the anoxic subterranean environment. Accordingly the effective Coliform concentration when the effluent reaches the shallow groundwater at the City site is expected to be at or below background and no degradation is anticipated, making this a **Less than Significant** impact at the City site.

At the NAWS site, with an AGR beneficial use, there is no coliform objective and the discharge will not cause degradation. Therefore this is a **Less Than Significant** impact.

It is noted that this discharge occurs in the current condition. Chemical disinfection performed locally by the Navy prior to irrigating the golf course will effectively remove Coliform from both the golf course percolate, mitigating potential degradation.

7.3 Summary of Analysis

The proposed operation represents a continuation of the City's WWTP effluent disposal that has been going on for more than fifty years. Additional disposal sites are being considered, to add capacity, and proposed treatment performance will result in higher-quality effluent particularly with respect to nitrogen removal.

Most of the constituents in the local groundwater meet the MCL requirements, but the groundwater is considered of poor quality for chloride, TDS and arsenic. With the following exceptions, the effluent produced by the treatment plant is of higher quality than the groundwater and will not degrade the quality of the existing groundwater. The impacts for all these constituents are considered to be **Less Than Significant**.

In the current condition and under the No Project Alternative, nitrogen is not and will not be removed from the WWTP effluent, yet the average effluent concentration is at or just above the MCL. While that doesn't matter at the NAWS site where the AGR beneficial use is in place, at the City site subject to the limits of the MUN beneficial use this results in degradation of a high-quality background, which is a **Significant and Unavoidable** impact. Under Alternative 1 and Alternative 2 design of the new WWTP will include nitrogen removal, to concentration levels below the MCL but above the concentration found in the groundwater. This application of the best available technology for nitrogen removal will improve the current situation, reducing the nitrogen concentration of the effluent below the MCL, though there will still be degradation of the groundwater with respect to nitrogen. Because of degradation of a high-quality groundwater at the City site, this impact is determined to be **Significant but Unavoidable**.

The anticipated boron concentration of the effluent is 1.1 mg/L. The concentration of boron in the source municipal water ranges from 0.18 to 2.1 mg/L, according to reporting from the IWVWD, the City's water purveyor. Shallow groundwater concentrations have not been tested, so are presumed to be of high quality with respect to Boron at both the NAWS and City sites. The most representative effluent concentration for boron comes from testing done in the existing Pond #3, which is tested semi-annually. Boron concentrations vary but have averaged just over 1.0 mg/L. There is no numeric objective for boron concentration for AGR-designated groundwaters in the Lahontan basin. The maximum concentration from moderately-sensitive agriculture is 2 mg/L. There is no State or Federal MCL for boron; however there is a State Notification Level of 1 mg/L. The average effluent concentration is just below these levels. Though this discharge may slightly degrade the presumed high-quality background, this impact is considered to be **Less Than Significant**.

Total dissolved solids (TDS) will not meet the most stringent agricultural water quality objectives after treatment, but will meet the MUN BQO upper limit of 1000 mg/L. The effluent TDS concentration will be substantially less than the groundwater TDS concentration at both the NAWS site and the City site. Therefore, no further degradation of the groundwater will take place as a result of effluent percolation at the City WWTP and NAWS ponds, and the impact is considered **Less Than Significant**.

When the effluent TDS concentration is increased in the root zone by evapo-transpiration during irrigation, of the golf course at the NAWS site or the alfalfa fields at the City site, the concentration in the percolate will be higher than the background at both the NAWS and City sites. These impacts are determined to be **Significant but Unavoidable**.

It is noted that these effects are unavoidable impacts of irrigation. However, there is no change from the no project alternative with either Alternative 1 or 2. As noted, State policy encourages irrigation with wastewater effluent and it is presumed to be beneficial so long as other environmental regulations are met.

The proposed WWTP will not disinfect effluent. Natural disinfection resulting from subsurface transport down through the soil will effectively remove Coliform from both the incidental percolate and the alfalfa percolate at the City WWTP site, resulting in **Less Than Significant** impacts for Coliform at this location.

At the NAWS site, chemical disinfection performed locally by the Navy prior to irrigating the golf course will effectively remove Coliform from both the golf course percolate, resulting in **Less Than Significant** impacts for Coliform at that location.

The very shallow groundwater at the NAWS site may not provide sufficient underground transport for full natural disinfection of the incidental percolation at the NAWS ponds. However, the AGR beneficial use has no WQO for Coliform bacteria. There is no change from the current condition. This impact is considered **Less than Significant**.

8 CONCLUSION

The SWRCB Recycled Water Policy says that “The Regional Water Boards shall, absent unusual circumstances…, permit recycled water projects that meet the criteria set forth in this Policy…” This project does not impact the existing or potential future beneficial uses of the receiving water, and is therefore in compliance with Resolution No. 68-16.

Based on the water quality assessment, the project will degrade some high quality waters in certain respects, which is a mandatory finding of significance. However, it will not affect present and anticipated beneficial uses of the water, and will not result in water quality less than the prescribed water quality objectives, except where such water is already present.

The impact of the proposed effluent disposal upon water quality is considered to be **Significant and Unavoidable** with respect to nitrogen and TDS but not significant with respect to other water quality parameters. These impacts result from irrigation and concentration of salts within the root zone. The impacts are small and incremental and will not affect the MUN or AGR beneficial uses. It should be noted that irrigation with wastewater effluent is encouraged by State policy and that concentration of salts in and below the root zone is an unavoidable consequence of irrigation when evapo-transpiration exceeds precipitation.

Appendix B: Biological Evaluation

LIVE OAK
ASSOCIATES, INC.

RIDGECREST WASTEWATER TREATMENT PLANT EXPANSION PROJECT
BIOLOGICAL EVALUATION
CITY OF RIDGECREST, KERN COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Vice President
Jeff Gurule, Senior Project Manager

Prepared for

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Senior Planner
Provost & Pritchard Consulting Group
130 N. Garden Street
Visalia, CA 93291 -6362

June 5, 2023 PN 1945-01

EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted an investigation of the biological resources of the Ridgecrest Wastewater Treatment Plant Expansion Project site in Kern County, California, and evaluated likely impacts to such resources resulting from project development. The project site is situated within and adjacent to the existing Ridgecrest Wastewater Treatment Plant (WWTP), which is located at the China Lake Naval Air Weapons Station (NAWS) and operated by the City of Ridgecrest. The existing WWTP, and NAWS, are located in the Indian Wells Valley, which is dominated by desert scrub habitat at the western edge of the Mojave Desert.

On June 9, 2015 and April 20, 2023, LOA biologist Jeff Gurule surveyed the site for biotic habitats, the plants and animals occurring in those habitats, and significant habitat values that may be protected by state and federal law. At the time of the field survey, the project site consisted of desert scrub, ruderal land, wastewater ponds, and alkali flat with wetlands.

Potentially significant project impacts and mitigations are as follows.

The project may result in impacts to nesting birds protected under the federal Migratory Bird Treaty Act, including several special status bird species. Birds nesting on the project site have the potential to be killed or disturbed by construction activities. Preconstruction surveys and avoidance, should active nests be found, will reduce impacts to nesting migratory birds to a less than significant level. Although no evidence of desert tortoise, Mohave ground squirrel, burrowing owl, or American badger habitation of the project site was noted at the time of the field survey, these species could conceivably use the site from time to time. Preconstruction surveys and appropriate avoidance and minimization measures stipulated in this document will reduce impacts to these species to a less than significant level. Should the desert tortoise be found on the site during protocol surveys the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFW) must be consulted. If impacts to the species can't be avoided, conditions of a Biological Opinion from the USFWS and an Incidental Take Permit from the CDFW must be implemented. Should the Mohave ground squirrel be found on the site during protocol surveys, the CDFW must be consulted. If impacts to the species can't be avoided, conditions of an Incidental Take Permit from the CDFW must be implemented. Prior to construction of a potential future pond on the site that would impact wetlands in the alkali flat, an aquatic resources delineation (ARD) should be conducted and submitted to the Lahontan Regional Water Quality Control Board and U.S. Army Corps of Engineers. If one or both agencies claim jurisdiction of the wetlands, appropriate permits should be obtained if deemed necessary by the agencies.

Less than significant project impacts are as follows.

The project will not impact special status plants known to occur in the region due to the absence of suitable habitat. Project impacts will also be less than significant for the Mohave tui chub, wildlife movement corridors, sensitive or designated critical habitat, special status species absent from or unlikely to occur on the project site, and special status species that may only occasionally forage on the project site. Project-related habitat loss or degradation would not be significant for any special status plant or animal species. Furthermore, the project will comply with the City of Ridgecrest general plan policies pertaining to biological resources.

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1.0 INTRODUCTION

The technical report that follows describes the biotic resources of the Ridgecrest Wastewater Treatment Plant Expansion Project (hereafter referred to as the "project site" or "site") and evaluates possible impacts to those resources that could result from project implementation. Specifically, this report describes the biotic habitats of the project site, evaluates the suitability of each habitat for special status plant and animal species, identifies potentially significant impacts to sensitive biotic resources resulting from the proposed project and, where appropriate, proposes measures that if implemented would mitigate those impacts to a less than significant level.

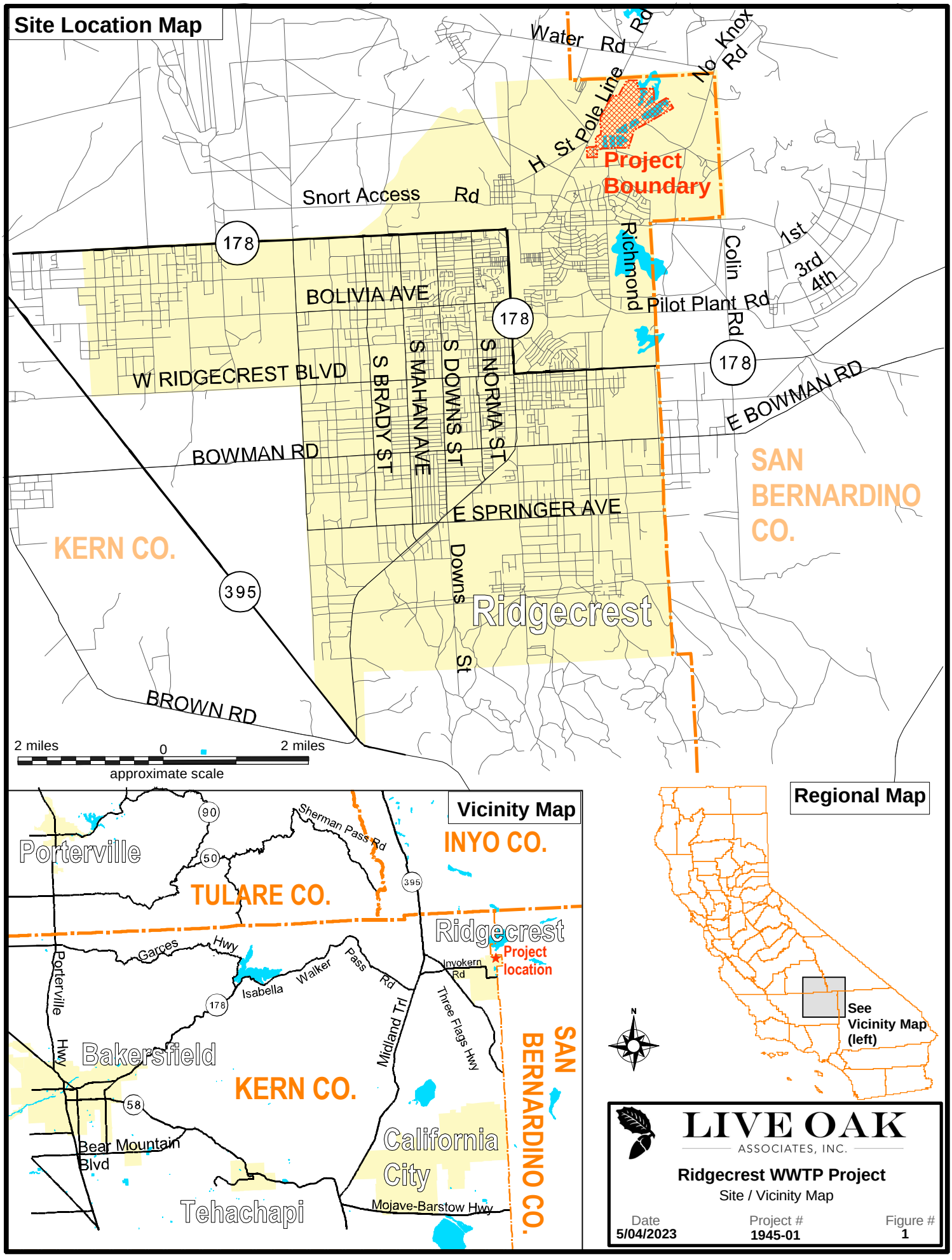
1.1 PROJECT LOCATION

The project site occupies approximately 360 acres located within the Ridgecrest city limits, Kern County. While within the Ridgecrest city limits, the site is also located on the China Lake Naval Air Weapons Stations (NAWS) (Figure 1). The project site lies within the *Ridgecrest North* USGS 7.5 minute quadrangle Sections 13, 14, and 23; Township 26 South, Range 40 East, Mt. Diablo Base and Meridian (Figure 2).

1.2 PROJECT DESCRIPTION

The project consists of the replacement of the existing WWTP that services solid waste generated from the City of Ridgecrest, which is located at the NAWS. A new treatment plant facility is to be constructed on land occupied by the existing WWTP and on adjacent vacant lands. Project details are described below and broadly illustrated in Figure 3.

The new headworks, septage receiving and office/lab/maintenance shop are located on the southern portion of the project site with the wastewater treatment process flowing north through primary, secondary and solids handling. This configuration was chosen to allow the new secondary treatment process to be constructed and become operational. The existing WWTP would then be demolished, making room for the new office/lab/maintenance shop and reserving room for future tertiary filtration and disinfection. At that point the existing office and other buildings would be demolished making room for additional sludge drying areas.

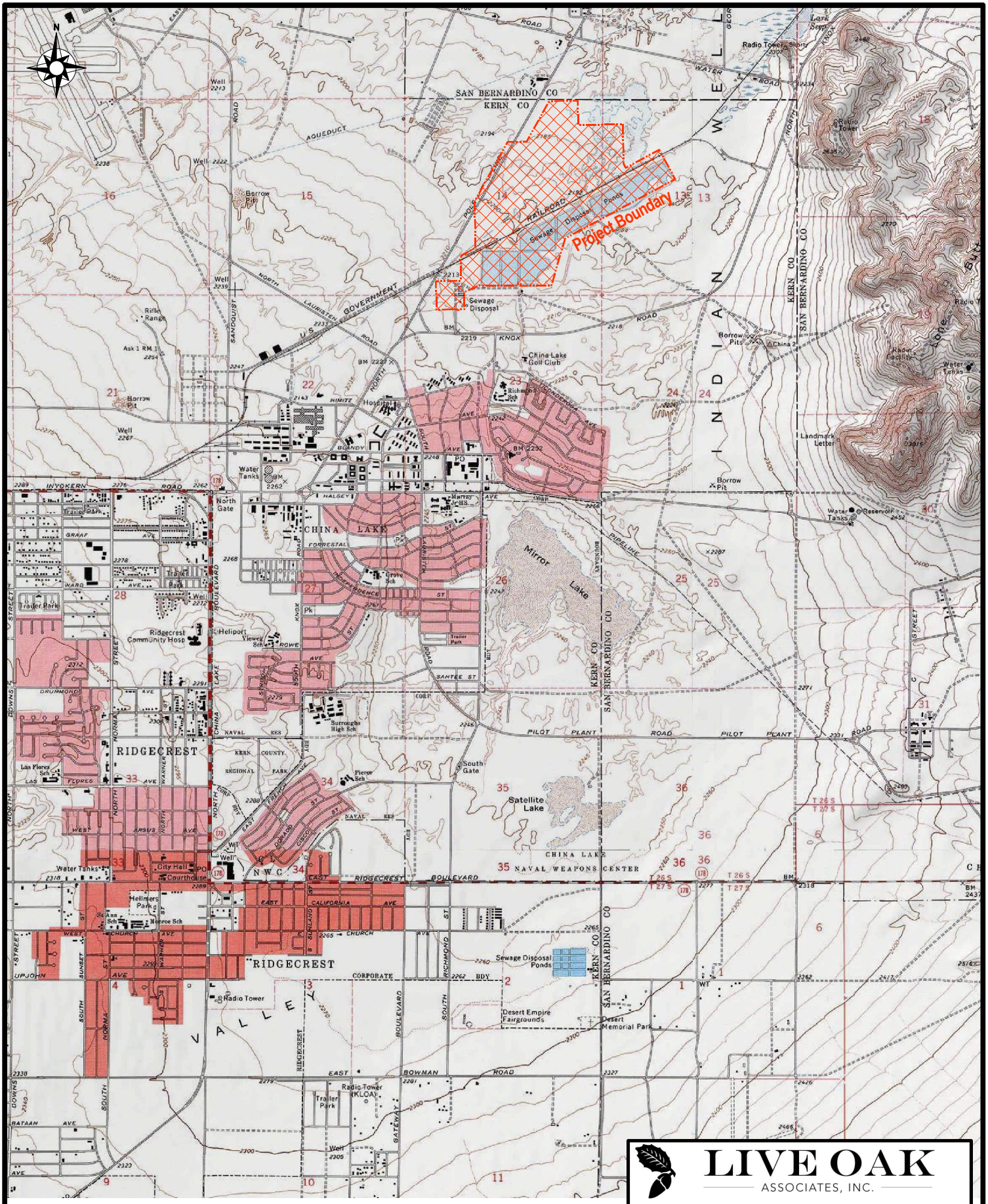


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Ridgecrest WWTP Project

Site / Vicinity Map

Date	Project #	Figure #
5/04/2023	1945-01	1



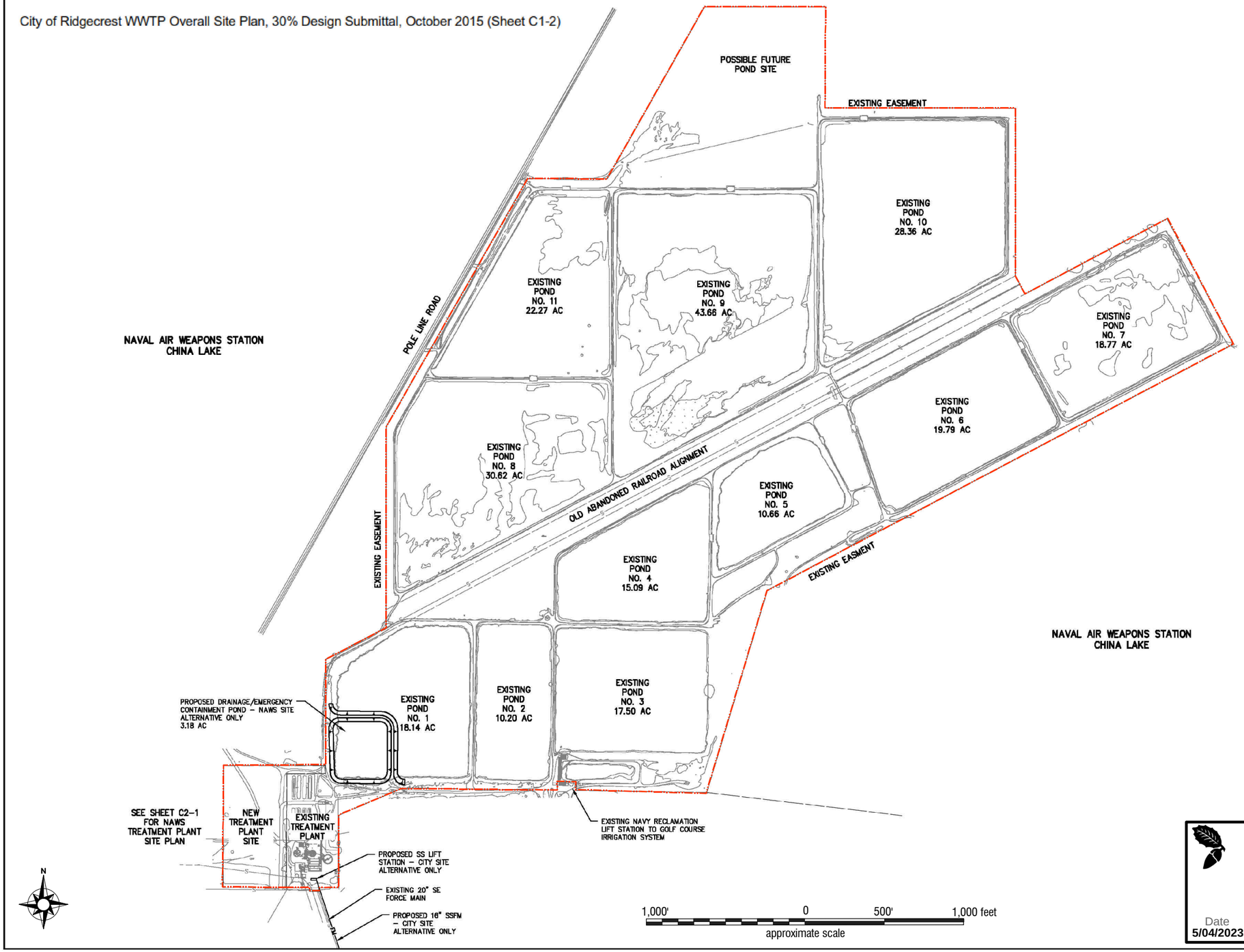
From USGS
Ridgecrest North 7.5' Quadrangle 1973
Ridgecrest South 7.5' Quadrangle 1973
Lone Butte 7.5' Quadrangle 1973
Spangler Hills West 7.5' Quadrangle 1973

LIVE OAK
ASSOCIATES, INC.

Ridgecrest WWTP Project
U.S.G.S. Quadrangle

Date	Project #	Figure #
5/04/2023	**1945-01**	**2**

City of Ridgecrest WWTP Overall Site Plan, 30% Design Submittal, October 2015 (Sheet C1-2)



WARNING
POWER LINES OVERHEAD

811 Know what's below. Call before you dig.

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PRELIMINARY DESIGN SUBMITTAL
NOT FOR CONSTRUCTION
10-14-2015

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER * WILLIAM SPENCER * STATE OF CALIFORNIA
FOR REVIEW ONLY
DATE SIGNED:

WASTEWATER TREATMENT PLANT
PRELIMINARY DESIGN SUBMITTAL
CITY OF RIDGECREST
KERN COUNTY, CA

CIVIL

OVERALL SITE PLAN – NAWS

EST. 1968 PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
1000 N. MAIN STREET, SUITE 2
FRESNO, CALIFORNIA 93711-6162
559/449-2700 FAX 559/449-2715
www.ppeng.com

DESIGN ENGINEER: WS
LICENSE NO: 26388
DRAFTED BY: DL,SG,PD,AJ
CHECKED BY: BGS
DATE: 10-14-2015
JOB NO: 0203010810
PROJECT NO:
PHASE:

ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C1-2
14 OF 55

10/13/2015 5:28 PM G:\Ridgecrest_City of\0203010810-Ridgecrest City Advisor-WWTP\SHEET\CIVIL\C1-2 OVERALL SITE PLAN – NAWS.dwg -Phillip Densby

LIVE OAK ASSOCIATES, INC.

Ridgecrest WWTP Project
Site Plan

Date	Project #	Figure #
5/04/2023	1945-01	3

Provisions for septage receiving will be provided so that the City of Ridgecrest can continue to accept septage from local septage haulers. There will be negligible or minimal impacts to the flow and loading into the treatment system based on the City-provided septic trucking records.

The project will include the replacement of all piping and distribution boxes to the existing evaporation/percolation ponds. In addition, accumulated solids from all ponds will be removed and pond bottoms scarified to restore percolation rates from the ponds. The project may require construction of an additional 27-acre disposal pond on undeveloped land immediately north of the existing ponds.

1.3 REPORT OBJECTIVES

This report summarizes a biological study conducted by LOA to facilitate environmental review pursuant to CEQA and NEPA. As such, the report's objectives are to:

- Characterize the project site's existing biological resources, including biotic habitats, flora and fauna, soils, and aquatic resources
- Evaluate the project site's potential to support sensitive resources such as special status species, sensitive natural communities, and jurisdictional waters and wetlands
- Summarize all state and federal natural resource protection laws that may be relevant to project implementation
- Identify and discuss potential project-related impacts to biological resources within the context of CEQA, NEPA, and other state and federal laws
- Identify avoidance and mitigation measures that would reduce the magnitude of project-related impacts in a manner consistent with CEQA, NEPA, and species-specific guidelines
- Make effects determinations pursuant to Section 7 of the federal Endangered Species Act for federally-listed species with the potential to occur in the project vicinity.

1.4 STUDY METHODOLOGY

A reconnaissance-level field survey of the project site was conducted on April 20, 2023 by LOA ecologist Jeff Gurule. The survey consisted of walking through the project site while identifying

its principal land uses, biotic habitats, flora, and fauna, and assessing its potential to support special status species and other sensitive resources. This survey augmented and updated information collected by Mr. Gurule during a survey of this area in June of 2015. Neither of these surveys included a formal aquatic resources delineation or focused surveys for special status species. The surveys were sufficient to assess the significance of possible biological impacts associated with project implementation, and to assess the need for more detailed studies that could be warranted if sensitive resources were identified in these initial surveys.

LOA conducted an analysis of potential project impacts based on the known and potential biotic resources of the project site. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2023), (2) the U.S. Fish and Wildlife Service (USFWS) *Information for Planning and Consultation* (IPaC) system (USFWS 2023), (3) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2023), (4) the USFWS National Wetlands Inventory, and (5) manuals, reports, and references related to plants and animals of the project vicinity.

2.0 EXISTING CONDITIONS

The project site is located within the Indian Wells Valley region of the western Mohave Desert. The area is loosely bound by four mountain ranges: the Sierra Nevada to the west, the Coso Range to the north, the Argus Range on the east, and the El Paso Mountains to the south.

The project site is located in a region of California having a desert climate. Summers are dry and hot with daytime temperatures commonly exceeding 100° Fahrenheit. Winters are mild to cold with occasional freezing nighttime temperatures. Annual precipitation in the general vicinity of the project site is low with a mean annual rainfall of approximately 3.7 inches, most of which falls between the months of December and March. Virtually all precipitation falls in the form of rain, with stormwater infiltrating onsite soils.

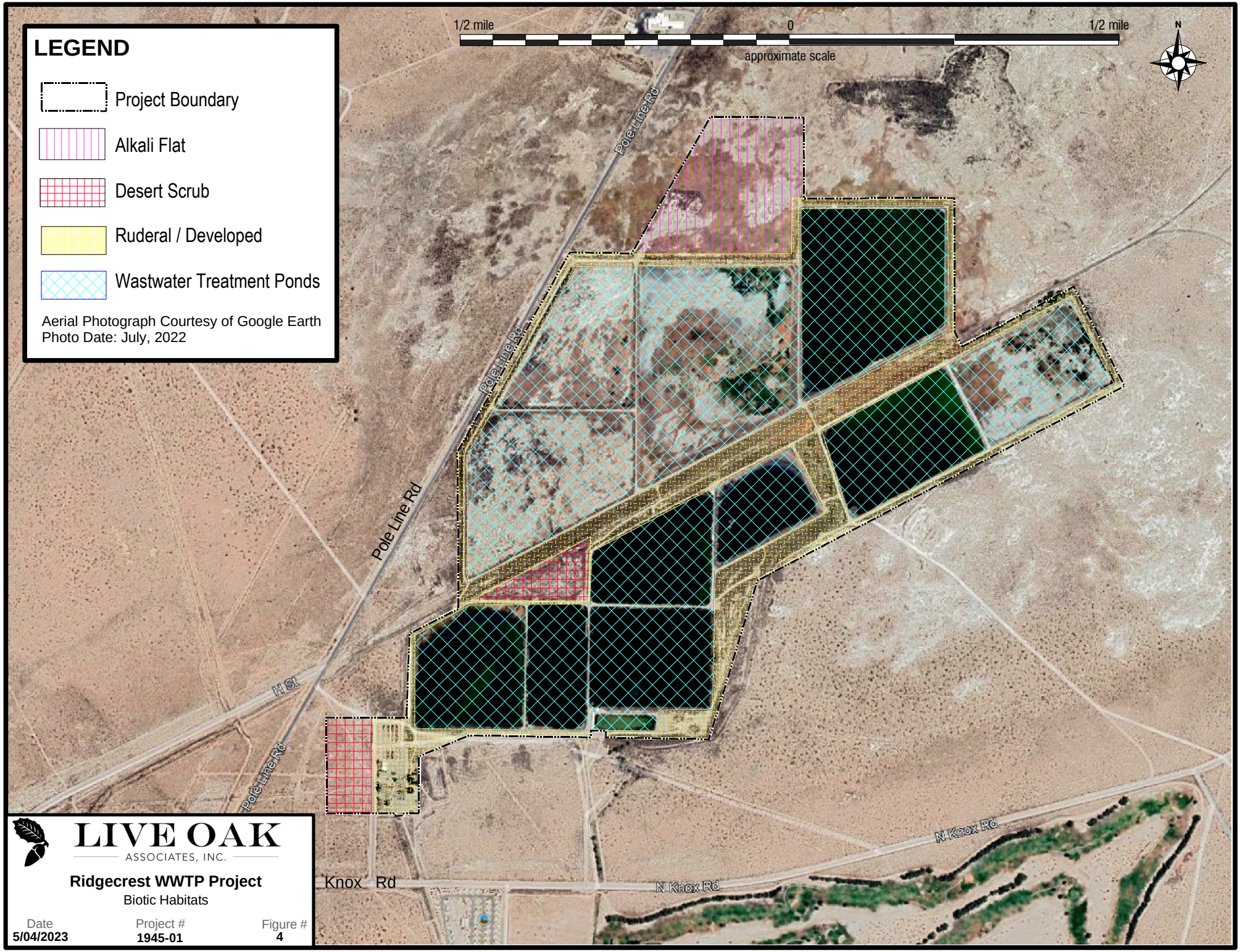
The topography of the project site is relatively flat with a mean elevation of approximately 2,200 feet National Geodetic Vertical Datum (NGVD).

In general, soils of the project site are sandy. Surface soils are deficient in nitrogen and relatively high in salt accumulation. Some soils within ruderal areas of the site have been disturbed or altered through the construction of WWTP infrastructure. As such, native soil characteristics within these areas have been altered or destroyed.

The surrounding lands consist of desert scrub and developed lands associated with the City of Ridgecrest and NAWS.

2.1 BIOTIC HABITATS/LAND USES

Four habitat/land use types have been identified on the project site; desert scrub, alkali flat, ruderal/developed, and wastewater pond (Figure 4). Lists of the vascular plant species observed within the project site and the terrestrial vertebrates using, or potentially using, the site are provided in Appendices A and B, respectively. Photos of the project site taken during the 2015 field survey are presented in Appendix C (photos were not allowed on NAWS during the 2023 survey).


LEGEND
Project Boundary
Alkali Flat
Desert Scrub
Ruderal / Developed
Wastewater Treatment Ponds
Aerial Photograph Courtesy of Google Earth
Photo Date: July, 2022
1/2 mile
0
1/2 mile
approximate scale
N
Pole Line Rd
Pole Line Rd
Pole Line Rd
H St
Pole Line Rd
Knox Rd
N Knox Rd
N Knox Rd
LIVE OAK
ASSOCIATES, INC.
Ridgecrest WWTP Project
Biotic Habitats
Date
5/04/2023
Project #
1945-01
Figure #
4

2.1.1 Desert Scrub

Desert scrub occurs in undeveloped areas of the site. The dominant shrub species within desert scrub habitat of the site is allscale (*Atriplex polycarpa*). Another shrub species observed in this habitat was creosote bush (*Larrea tridentata*). Annual grasses and forbs formed a relatively sparse cover between and beneath the shrubs and included schismus (*Schismus arabicus*), bearded cryptantha (*Cryptantha barbigera*), Booth's sun cup (*Eremothera boothii*), desert dandelion (*Malacothrix californica*), and desert pepperweed (*Lepidium fremontii*), among others.

The desert scrub observed on the site provides habitat for native terrestrial vertebrate species adapted to dry desert conditions. The degree to which this habitat is used by these species has likely been adversely affected by human activities adjacent to these areas. Relatively few animals were observed in this habitat during the reconnaissance level survey; however, much animal activity is expected to occur during crepuscular and nighttime hours. Reptiles likely to occur in this habitat include the side-blotched lizards (*Uta stansburiana*), southern desert horned lizards (*Phrynosoma platyrhinos calidiarum*), Great Basin whiptails (*Cnemidophorus tigris tigris*), red racers (*Coluber flagellum piceus*), California kingsnakes (*Lampropeltis californiae*), and Northern Mojave rattlesnakes (*Crotalus scutulatus scutulatus*), among others. Birds common to desert scrub include horned larks (*Eremophila alpestris*), common ravens (*Corvus corax*), greater roadrunners (*Geococcyx californianus*), Brewer's sparrows (*Spizella breweri*), black-throated sparrows (*Amphispiza bilineata*), and sage sparrows (*Amphispiza belli*), among others. Mammal species potentially occurring within this habitat could include coyotes (*Canis latrans*), kit fox (*Vulpes macrotis*), black-tailed jackrabbits (*Lepus californicus*), Merriam's kangaroo rats (*Dipodomys merriami*), white-tailed antelope squirrels (*Ammospermophilus leucurus*), and southern grasshopper mice (*Onychomys torridus*), to name a few.

2.1.2 Ruderal/Developed

Ruderal/developed land is characterized by human disturbance or use that has significantly altered soils, topography, and/or the biotic community. Within the project site, ruderal lands consisted of heavily disturbed and developed lands associated with the existing WWTP and an abandoned railway running southwest to northeast through the wastewater pond complex. Some of the site's ruderal areas experience regular human disturbance from operation of the WWTP

and contain little vegetation, while other areas have experienced past grading or other major disturbance during the construction of the wastewater treatment ponds or historic railroad and have been colonized by dense stands of allscale. At the time of the surveys, the WWTP facility headquarters contained a variety of mostly non-native vegetation, which included ornamental trees and shrubs such as white mulberry (*Morus alba*), Fremont's cottonwood (*Populus fremontii*), and juniper (*Juniperus sp.*). Non-native weedy herbaceous vegetation such as redstem filaree (*Erodium cicutarium*), schismus, five horn bassia (*Bassia hyssopifolia*), and London rocket (*Sisymbrium irio*) were indicative of ruderal areas.

A number of wildlife species adapted to human disturbance are expected to occur in ruderal areas of the site. Reptiles such as the Great Basin whiptail, side-blotched lizard, Great Basin gopher snake (*Pituophis catenifer deserticola*), and California kingsnake could forage in these areas. Trees and shrubs associated with the WWTP facility headquarters could provide potential nesting habitat for a few avian species such as the house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), and Eurasian collared dove (*Streptopelia decaocto*).

Common resident species likely to forage within this habitat include mourning doves (*Zenaida macroura*), American crows (*Corvus brachyrhynchos*), Brewer's blackbirds (*Euphagus cyanocephalus*), brown-headed cowbirds (*Molothrus ater*), and European starlings (*Sturmus vulgaris*). The western kingbird (*Tyrannus verticalis*) is a common summer migrant to open lands of the region. Winter migrants common in the area include white-crowned sparrows (*Zonotrichia leucorphrys*), savannah sparrows (*Passerella sandwichensis*), and American pipits (*Anthus rubescens*).

A few mammal species may also occur within ruderal lands of the site. A white-tailed antelope squirrel was observed in a ruderal area around the wastewater ponds. Other small mammals expected in these areas include the deer mouse (*Peromyscus maniculatus*), black-tailed hare (*Lepus californicus*), and Audubon cottontail (*Sylvilagus audubonii*).

Raptors such as red-tailed hawks (*Buteo jamaicensis*) and American kestrels (*Falco sparverius*) may also forage over the site. Mammalian predators that may occasionally occur in this habitat include coyotes and kit fox.

2.1.3 Wastewater Ponds

A number of wastewater ponds are located within the project site. A majority of the ponds were inundated at the time of the April 2023 field survey; however, some were completely dry or partially inundated. The inundated ponds supported vegetation along the waterline. Plant species observed included broadleaved cattail (*Typha latifolia*), mule fat (*Baccharis salicifolia*), and tamarisk (*Tamarix ramosissima*). Dry ponds contained much of the same vegetation and biological function as the surrounding ruderal lands.

When inundated, the WWTP's ponds are not expected to be used by reptile or amphibian species. The inundated ponds, however, are of considerable value to waterfowl and shorebirds. At the time of the field survey, these ponds were used by many species of waterfowl and shorebirds such as the northern shoveler (*Spatula clypeata*), ruddy duck (*Oxyura jamaicensis*), American coot *(Fulica americana*), black-necked stilt (*Himantopus mexicanus*), greater yellowlegs (*Tringa melanoleuca*), and American avocet (*Recurvirostra americana*), among others. Other birds observed in the pond areas include the red-winged blackbird (*Agelaius phoeniceus*) and yellow-rumped warbler (*Setophaga coronata*).

Mammal species may occasionally use the inundated ponds as a source of drinking water (dependent on water quality) or feeding. Mammal species that may occur around the margins of the ponds include raccoons (*Procyon lotor*) and coyotes. Various bat species likely forage over the ponds during crepuscular hours.

When dry, the ponds are expected to support a similar complement of wildlife species to the site's ruderal/developed areas.

2.1.4 Alkali Flat

Alkali flat occurs on the site north of the developed wastewater ponds. This area contained a thick layer of alkali crust, as well as a dense stand of saltgrass (*Distichlis spicata*) that covered much of this habitat. Some areas of the alkali flat contained ponded water and much of the area had moist soils. Shrub species, where present, consisted of allscale and spiny saltbush (*Atriplex confertifolia*), which only occurred in dryer areas of the alkali flat. A wildflower species found in this habitat was whitestem blazingstar (*Mentzelia albicaulis*).

Dry areas of the alkali flat within the project site provide habitat for many of the same species that would be expected to utilize the desert scrub habitat. Inundated areas of the alkali flat may provide foraging habitat for some of the same wading birds found in partially inundated areas of the existing wastewater ponds. However, no such birds were observed during the survey.

2.2 SPECIAL STATUS PLANTS AND ANIMALS

Many species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.3, state and federal laws have provided CDFW and the USFWS with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened or endangered (CNPS 2023). Collectively, these plants and animals are referred to as "special status species."

The California Natural Diversity Data Base (CNDDB) (CDFW 2023) was queried for special status species occurrences in the nine USGS 7.5-minute quadrangles containing and immediately surrounding the project site (*Ridgecrest North, Burro Canyon, Inyokern, Inyokern SE, Lone Butte, Pearsonville, Ridgecrest South, Spangler Hills West, and White Hills*). A species list was obtained using the USFWS IPaC system for federally listed species with the potential to be affected by the project (USFWS 2023) (Appendix D). These species, and their potential to occur on the site, are listed in Table 1 on the following pages. Sources of information for Table 1 included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al. 2012), CNPS's *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2023), Calflora.org, and eBird.org.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2023 and CNPS 2023)

Special status plants listed as rare, threatened, or endangered by CNPS

Species	Status	Habitat	Occurrence on the Project Site
Clokey's Cryptantha (*Cryptantha clokeyi*)	CNPS 1B	Mojavean desert scrub. Found in sandy or gravelly soils in mountainous and hilly areas. Blooms in April.	**Unlikely.** Mountainous or hilly terrain required by this species is absent from the project site.

ANIMALS (adapted from CDFW 2022 and USFWS 2022)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Monarch Butterfly (*Danaus plexippus*)	FC	Overwinters in coastal California and Baja California and breeds throughout California in the spring and summer along its annual migration north and east. The adult monarch lays its eggs on milkweed host plants, which the larvae feed on before pupating and emerging as adults. In addition to milkweed, this species requires abundant nectar resources to nourish migrating adults, and trees for roosting during migratory stopovers.	**Unlikely.** Monarchs, at most, may pass through the site during migration. Abundant nectar sources are absent from the project site and milkweed utilized for reproduction was not observed on site at a time when it should have been readily identifiable.
Mohave Tui Chub (*Siphateles bicolor mohavensis*)	FE, CE	Endemic to the Mojave River basin, adapted to alkaline, mineralized waters. Requires deep pools, ponds, or slough-like areas with vegetation for spawning.	**Absent.** Suitable habitat is absent from the project site. However, a large population occurs approximately 0.5 to 1.0 mile northeast of the project site in two large seeps and associated canals. The primary water source for these seep systems is percolation and leakage from the wastewater ponds on the project site.
Desert Tortoise (*Gopherus agassizii*)	FT, CT	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**Possible.** This species may occur in desert scrub and alkali flat areas of the project site.
Bank Swallow (*Riparia riparia*)	CT	Breeds in colonies; builds nest by tunneling into sandbanks. Forages over open habitat including fields, marshes, and ponds, often in mixed flocks with other species of swallows.	**Present.** This species has been regularly observed foraging over the project site (eBird 2023). Breeding habitat is absent.
Inyo California Towhee (*Melozone crissalis eremophilus*)	FT, CE	Inhabits the west and east slope of the southern Argus Range from 2,680 to 6,200 ft. Breeds in small patches of dense thickets of willows and desert olive along stream sides, springs and seeps.	**Absent.** The project site is outside the known range of this species.
Mohave Ground Squirrel (*Xerospermophilus mohavensis*)	CT	Open desert scrub, alkali scrub & Joshua tree woodland. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover and nesting.	**Possible.** Desert scrub and alkali flat areas of the project site provide potential habitat for this species. Historic observations of this species are documented adjacent to the project site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS – cont'd.

State Species of Special Concern

Species	Status	Habitat	Occurrence on the Project Site
Burrowing Owl (*Athene cunicularia*)	CSC	Frequents open, dry annual or perennial grasslands, deserts, and scrublands characterized by low growing vegetation. Dependent upon burrowing mammals, most notably the California ground squirrel, for nest burrows.	**Possible.** Burrows of suitable size for burrowing owl occupation were not observed on the project site during LOA's reconnaissance survey. However, this species has been documented on and near the project site (eBird 2023, CDFW 2023), and has the potential to occur in burrows not observed on the site, or to move onto the site at some point in the future.
Loggerhead Shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Often found in cropland.	**Possible.** This species may forage and potentially nest on the site.
Le Conte's Thrasher (*Toxostoma lecontei*)	CSC	Desert resident primarily found in open desert washes, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Nests in dense spiny shrubs or branched cactus.	**Possible.** Potential breeding and foraging habitat occur in desert scrub habitats of the project site.
Spotted Bat (*Euderma maculatum*)	CSC	Frequents semi-arid to arid habitats from low desert habitats to high elevation conifer forests. Prominent rock features used for roosting.	**Possible.** This species may forage over the site; roosting habitat is absent.
Townsend's Big Eared Bat (*Corynorhinus townsendii*)	CSC	Found throughout California. Roosts most frequently in caves and cave-like structures, but has also been reported to utilize bridges, buildings, rock crevices, and hollow trees.	**Possible.** This species could conceivably forage over the site. Buildings on the site provide unsuitable roosting habitat.
Pallid Bat (*Antrozous pallidus*)	CSC	Roosts in rocky outcrops, cliffs, and crevices with access to open habitats for foraging. May also roost in caves, mines, hollow trees and buildings.	**Possible.** This species may forage over the site. Onsite trees lack hollow cavities suitable for bat roosting. Onsite buildings provide unsuitable roosting habitat due to the lack of openings into crevices or cavities suitable for roosting, as well as uninsulated metal roofing on other buildings that would result in high temperatures in potential crevices beneath the roofing that would create unsuitable roosting conditions.
American Badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Possible.** Although no badger burrows or digs were observed during the LOA field survey, suitable habitat occurs within desert scrub habitats of the site.
Desert Bighorn Sheep (*Ovis canadensis nelsoni*)	FP	Found in the dry, steep, rocky desert mountains of southeastern California. Prefers open terrain.	**Absent.** Suitable habitat in the form of mountainous terrain is absent from the project site.

***Explanation of Occurrence Designations and Status Codes**
Present: Species observed on the site at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the site, but it could occur there from time to time.
Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the site, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Fully Protected
		CSC	California Species of Special Concern

CNPS LISTING

1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

2.3 ENDANGERED, THREATENED, OR SPECIAL STATUS PLANT AND ANIMAL SPECIES MERITING FURTHER DISCUSSION

2.3.1 Desert Tortoise (*Gopherus agassizii*). Federal Listing Status: Threatened; State Listing Status: Threatened.

The most significant threats to the desert tortoise include urbanization, disease, habitat destruction and fragmentation, illegal collection and vandalism by humans, and habitat conversion from invasive plant species. Predation of young tortoises by ravens (often prolific in and near urban areas) is significant in some areas. Free ranging domestic dogs can also prey upon desert tortoise near urban areas. Desert tortoise populations in some areas have declined by as much as 90% since the 1980s.

Desert tortoises occur in a wide variety of habitats in arid and semiarid regions. They require friable soil for burrow and nest construction. Highest densities are achieved in creosote bush communities with extensive annual wildflower blooms, such as occur in the western Mojave. However, tortoises can be found in areas of extensive lava formations, alkali flats and most other desert habitats. Tortoises are herbivorous, eating annual forbs and grasses; many species are taken, but forbs are preferred over grasses and green vegetation is preferred over dry. Desert tortoises have been observed eating carrion and feces as well as excavating and eating calcium carbonate mineral deposits. This species normally excavates a burrow under bushes, overhanging soil or rock formations, or digs into the soil in the open. Burrows are most extensive in the

northern part of the range where winter temperatures are coldest. On occasion, a tortoise will take cover under a bush or any natural shelter. The burrows are often crucial to survival, especially in hot weather when the direct rays of the sun can kill a tortoise in an hour or less. Tortoises may be active at any time of year, but most activity takes place between March and June, and to a lesser extent in late summer in areas with summer rains (eastern Mojave). In early spring, tortoises may be active all day but by late spring, activity is reduced to less than an hour in early morning, 1 out of 4 days. Copulation begins shortly after the tortoises become active in late March or early April. Eggs are laid in early summer (late May to July). Clutches average 5 (range 2-9) eggs and take 3-4 months to hatch. Nests are often constructed at the entrance to burrows. Failure of rainfall and consequent scarcity of annual plants may result in reproductive failure (Zeiner et. al 1988-1990).

Potential to occur onsite. The project site is located at the northern edge of the desert tortoise's range. There is one documented desert tortoise occurrence approximately 6 miles south of the project site (CDFW 2023). Desert scrub and alkali flat habitat on the project site do not provide optimal desert tortoise habitat due to the low density of creosote bushes and the proximity of regular human disturbance. However, it is possible that a desert tortoise may be found within these habitats on the project site. No evidence of desert tortoise use of these habitats was observed during LOA's site surveys in June 2015 or April 2023.

2.3.2 Mohave Ground Squirrel (*Xerospermophilus mohavensis*). State Listing Status: Threatened.

The Mohave ground squirrel is restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo Counties from 1,800 to 5,000 feet in elevation. This species is rare throughout its range. Populations in southwestern San Bernardino County appear to be extirpated. Optimal habitats are open desert scrub, alkali desert scrub, and Joshua tree. Prefers sandy to gravelly soils; avoids rocky areas. Populations are reduced by urban development, off-road vehicle use, and agriculture.

The Mohave ground squirrel forages on the ground or in shrubs and Joshua trees, where it eats a wide variety of green vegetation, seeds, and fruits. It uses burrows at the base of shrubs for cover. Nests are built in the burrow system, which may be as long as 20 feet, and as deep as 3

feet. This diurnal ground squirrel is active above ground in the spring and early summer. Emergence dates vary from March to June, depending on elevation. Squirrels begin aestivation in July or August. Stored body fat is the principal source of energy for aestivation, although food is stored, and captive individuals are known to eat during intermittent periods of wakefulness (Zeiner et. al 1988-1990).

Potential to occur onsite. There are two documented occurrences of Mohave ground squirrels within three miles of the project site (CDFW 2023). Suitable Mohave ground squirrel habitat occurs within desert scrub and alkali flat habitats of the project site. No evidence of this species was observed during LOA's site surveys in June 2015 or April 2023.

2.3.3 Mohave Tui Chub (*Siphateles bicolor mohavensis*). Federal Listing Status: Endangered, State Listing Status: Endangered.

The Mohave tui chub was listed as federally endangered in 1970 and state endangered in 1971. In 1972, an attempt to preserve the only remaining Mohave tui chub population was made and chub were transplanted from Lake Tuendae, located adjacent to Soda Dry Lake near Baker California, to 14 refuge sites. Only three transplants were successful, with the largest transplanted population currently residing in the Lark Seep/G-1 Seep System on NAWS. The Lark Seep/G-1 Seep drainage system consists of two seeps and about five miles of inter-connecting channels that are primarily the result of leakage and percolation from the existing wastewater ponds on the project site. According to the 2002 *Draft Environmental Impact Statement For Proposed Military Operational Increases and Implementation of Associated Comprehensive Land Use and Integrated Natural Resources Management Plans*, this population is managed by NAWS in cooperation with the USFWS, CDFW, and City of Ridgecrest, and the water supply to the seep system is regularly monitored at established test wells and monitoring stations, to ensure compliance with water quality standards established for the protection and enhancement of the tui chub.

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, wetlands, and in some cases irrigation canals. Such waters may be subject to the

regulatory authority of the U.S. Army Corps of Engineers (USACE), the CDFW, and the Regional Water Quality Control Boards (RWQCB). See Section 3.2.5 of this report for additional information.

Large portions of the alkali flat area of the site appear to meet wetland criteria. Furthermore, the USFWS National Wetland Inventory map shows wetlands occurring on the southern portions of the alkali flat. While this wetland area is likely to be considered isolated by the USACE, the wetland area may be considered a water of the State by the Lahonton RWQCB, who permits the operation of the WWTP. The Lahonton RWQCB would likely require a Waste Discharge Requirement (WDR) for impacts to this wetland.

2.5 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is a specific geographic area(s) that contains features essential for the conservation and recovery of a threatened or endangered species. Critical habitat may require special management and protection.

The project site is not located within designated critical habitat for any federally listed species.

2.6 SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those that are of limited distribution, distinguished by significant biological diversity, home to special status species, etc. CDFW is responsible for the classification and mapping of all natural communities in California. Natural communities are assigned state and global ranks according to their degree of imperilment. Any natural community with a state rank of 3 or lower (on a scale of 1 to 5) is considered sensitive.

Sensitive natural communities are absent from the project site.

2.7 WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors are routes that animals regularly and predictably follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-

population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation.

The project site contains no geographic features that could be considered wildlife movement corridors.

3.0 RELEVANT GOALS, POLICIES, AND LAWS

3.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

In California, any project carried out or approved by a public agency that will result in a direct or reasonably foreseeable indirect physical change in the environment must comply with CEQA. The purpose of CEQA is to ensure that a project's potential impacts on the environment are evaluated and methods for avoiding or reducing these impacts are considered before the project is allowed to move forward. A secondary aim of CEQA is to provide justification to the public for the approval of any projects involving significant impacts on the environment.

According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest." Although the lead agency may set its own CEQA significance thresholds, project impacts to biological resources are generally considered to be significant if they would meet any of the following criteria established in Appendix G of the CEQA Guidelines:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.
- Have a substantial adverse effect on state or federally protected wetlands (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.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) requires the lead agency to make "mandatory findings of significance" if there is substantial evidence that a project may:

- Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of an endangered, rare or threatened species.

- Achieve short-term environmental goals to the detriment of long-term environmental goals.

- Produce environmental effects that are individually limited but cumulatively considerable, meaning that the incremental effects of the project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects.

3.2 NATURAL ENVIRONMENTAL POLICY ACT

Projects that are proposed, funded, or authorized by federal agencies are generally subject to the provisions of NEPA. Signed into law in 1970, NEPA requires federal agencies to evaluate the environmental effects of their proposed actions prior to making decisions, and to provide opportunities for public review and comment during this process.

Under NEPA, effects are defined as "changes to the human environment from the proposed action or alternative that are reasonably foreseeable." Examples include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health." NEPA explicitly instructs agencies to consider direct, indirect, and cumulative effects; the latter denotes those effects that "result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions" by any agency or entity" (40 CFR Part 1508.1(g)).

The level of NEPA review that is required is related to the project's potential to cause "significant" environmental effects. "Significant" is not explicitly defined under NEPA; however, the NEPA Implementing Regulations (40 CFR Parts 1500-1508) offer several

guidelines for determining, and discounting, significance. Federal agencies are instructed to base their significance determinations on an analysis "of the potentially affected environment and degree of the effects of the action." *Potentially affected environment* refers both to the geographic area of the action, and to the resources found within this area; examples of the latter from the statute are listed species and designated critical habitat. Effects need not be far-reaching to be considered significant; for site-specific actions, a determination of significance usually depends only on the effects in the local area.

In considering the *degree* of an action's effects, federal agencies are instructed to consider the following:

- Both short- and long-term effects
- Both beneficial and adverse effects
- Effects on public health and safety
- Effects that would violate federal, state, tribal, or local law protecting the environment

NEPA requires that federal agencies consider mitigating the environmental effects of their actions. Suitable measures include the following:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

3.3 OTHER RELEVANT LAWS AND POLICIES

3.3.1 City of Ridgecrest General Plan Policy

The City of Ridgecrest General Plan (2030) provides the City direction in project planning and approval with respect to transportation, housing, energy, noise, safety, land use, open space, conservation, etc. The plan is implemented via a number of goals and corresponding policies.

Goals and policies relevant to the current project are derived primarily from the Open Space and Conservation Element of the general plan. These goals and policies are presented in Appendix D.

3.3.2 Threatened and Endangered Species

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as "threatened" or "endangered" under one or both Acts, and/or as "rare" under CESA. Under both Acts, "endangered" means a species is in danger of extinction throughout all or a significant portion of its range, and "threatened" means a species is likely to become endangered within the foreseeable future. Under CESA, "rare" means a species may become endangered if their present environment worsens. Both Acts prohibit "take" of listed species, defined under CESA as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" (California Fish and Game Code, Section 86), and more broadly defined under FESA to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The USFWS commonly interprets "take" to include the loss of habitat utilized by a listed species.

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues and to make project-specific recommendations for the protection of listed species. Projects that may result in the "take" of listed species must generally enter into consultation with the USFWS and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.3.3 Migratory Birds

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Native birds are also protected under California state law. The California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities.

3.3.4 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, 1992), which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.3.5 Nesting Birds

In California, protection is afforded to the nests and eggs of all birds. California Fish and Game Code (Section 3503) states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Breeding-season disturbance that causes nest abandonment and/or loss of reproductive effort is considered a form of "take" by the CDFW.

3.3.6 Habitat Conservation Plans and Natural Community Conservation Plans

Section 10 of the federal Endangered Species Act establishes a process by which non-federal projects can obtain authorization to incidentally take listed species, provided take is minimized and thoroughly mitigated. A Habitat Conservation Plan (HCP), developed by the project applicant in collaboration with the USFWS and/or NMFS, ensures that such minimization and mitigation will occur, and is a prerequisite to the issuance of a federal incidental take permit. Similarly, a Natural Community Conservation Plan (NCCP), developed by the project applicant in collaboration with CDFW, provides for the conservation of biodiversity within a project area, and permits limited incidental take of state-listed species.

3.3.7 Wetlands and Other Jurisdictional Waters

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into "navigable waters" (33 U.S.C. §1344), defined in the CWA as "the waters of the United States, including the territorial seas" (33 U.S.C. §1362(7)). The CWA does not supply a definition for waters of the U.S., and that has been the subject of considerable debate since the CWA's passage in 1972. A variety of regulatory definitions have been promulgated by the two federal agencies responsible for implementing the CWA, the Environmental Protection Agency (EPA) and USACE. These definitions have been interpreted, and in some cases, invalidated, by federal courts.

Waters of the U.S. are presently defined by the EPA and USACE's joint 2023 Revised Definition of 'Waters of the U.S.' Rule (2023 WOTUS Rule), with certain interpretive modifications imposed by the U.S. Supreme Court's May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency*. Generally speaking, these waters include:

- Waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- The territorial seas
- Interstate waters including interstate wetlands.
- Impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries to other waters of the U.S. that are relatively permanent, standing or continuously flowing bodies of water
- Wetlands adjacent to other waters of the U.S. that have a continuous surface connection to those waters

The 2023 WOTUS Rule also defines a number of exclusions from the definition of waters of the U.S., many of which are longstanding exclusions from earlier regulatory regimes. These generally include:

- Waste treatment systems

- Prior converted cropland
- Ditches excavated wholly in and draining only dry land that do not carry a relatively permanent flow of water
- Certain artificial features, e.g. irrigation basins, swimming pools, borrow pits, and artificially irrigated areas
- Swales and erosional features characterized by low volume, infrequent, or short duration flow

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining a Section 404 Clean Water Act permit. Discharges into waters of the State that are not also waters of the U.S. require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may

substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

4.0 IMPACTS AND MITIGATIONS

The following discussions address the potential impacts to biological resources associated with implementation of the Ridgecrest Wastewater Treatment Plant Expansion Project. The project will result in the conversion of approximately 6 acres of relatively undisturbed desert scrub habitat to wastewater treatment facilities, the potential future conversion of approximately 27 acres of relatively undisturbed alkali flat habitat to a new a wastewater treatment pond, temporary impacts to existing waste treatment ponds from the removal of accumulated solids and pond bottom scarification, and temporary impacts to ruderal areas from the replacement of piping and distribution boxes to the existing ponds. Following construction, temporarily disturbed areas are expected to return to pre-project conditions, which includes periodic treatment pond maintenance activities.

4.1 POTENTIALLY SIGNIFICANT PROJECT IMPACTS/MITIGATION

4.1.1 Project Related Mortality or Disturbance to Le Conte's Thrasher, Loggerhead Shrike, and Other Nesting Migratory Birds

Potential Impacts. The project site has the potential to be used for nesting by the Le Conte's thrasher, loggerhead shrike, and a number of other avian species protected under the federal Migratory Bird Treaty Act and related state laws. If any birds were to nest on the project site prior to construction, project-related activities could result in the abandonment of active nests or direct mortality to birds. Such an activity would constitute a violation of state and federal laws (see Section 3.2.3) and would be considered a significant impact.

Mitigation. In order to minimize construction disturbance to Le Conte's thrasher, loggerhead shrike, and other migratory bird nests, the applicant will implement one or more of the following measure(s) as necessary, prior to project construction:

> ***Mitigation 4.1.1a* (*Avoidance*).** In order to avoid impacts to all nesting birds from construction activities, these activities will occur outside of the typical avian nesting season if feasible, or between September 1 and January 31.
>
> ***Mitigation 4.1.1b* (*Pre-construction surveys*).** If construction must occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 15 days of the onset of these activities.

***Mitigation 3.3.1c* (*Establish buffers*).** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will reduce potential project impacts to Le Conte's thrasher, loggerhead shrike, and other nesting migratory birds to a less than significant level and facilitate compliance with state and federal laws protecting nesting birds.

4.1.2 Project Impacts to Desert Tortoise from Construction Mortality

Potential Impacts. The project site contains areas of relatively undisturbed desert scrub and alkali flat habitat. Much of this habitat on the site provides relatively low quality desert tortoise habitat due to the low density of creosote bushes and the presence of nearby development. Nonetheless, desert tortoise could potentially occur within these habitats on the project site. Ruderal lands of the project site are unlikely to support desert tortoise due to the lack of suitable vegetation for foraging and regular human disturbance. Should a desert tortoise occur in desert scrub or alkali flat habitat at the time of construction, individual tortoises could potentially be killed by construction activities. Project-related mortality of desert tortoise is considered a potentially significant impact and would be a violation of state and federal laws protecting the species.

Mitigation. Prior to construction, the following measures adapted from the *U.S. Fish and Wildlife Service Desert Tortoise (Mojave Population) Field Manual (Gopherus agassizii)* (December 2009) will be implemented.

Mitigation Measure 4.1.2a (Pre-construction Surveys). Pre-construction surveys will be conducted in suitable desert tortoise habitats on the project site prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the desert tortoise. These surveys will be conducted in accordance with the USFWS *Desert Tortoise Field Manual*. Survey results will be submitted to the USFWS and CDFW.

Mitigation Measure 4.1.2b (Consultation and Permitting). Should surveys find a desert tortoise or desert tortoise sign (burrows, scat, and carcasses), the project applicant will consult with the USFWS and CDFW for guidance on how to proceed. The agencies will likely require "take authorization" in the form of a Biological Opinion (BO) issued by the

USFWS and an Incidental Take Permit (ITP) issued by the CDFW in order for the project to lawfully proceed.

Mitigation Measure 4.1.2c (Agency-Specified Measures). The project applicant will implement all measures recommended by the USFWS and/or CDFW during the aforementioned consultation or stipulated by the project's BO and ITP, if issued. These measures may include compensatory mitigation, a Desert Tortoise Translocation Plan, additional surveys, a Habitat Restoration and Revegetation Plan, an Exclusionary Fencing Plan, a Worker Environmental Awareness and Training Program, monitoring, and a Trash Abatement Program.

Implementation of these measures will reduce construction-related impacts to the desert tortoise to a less than significant level and facilitate compliance with state and federal law.

4.1.3 Project Impacts to Burrowing Owls from Construction Mortality

Potential Impacts. Burrows providing suitable nesting and roosting habitat were not observed during surveys conducted by LOA in June 2015 or April 2023. However, the survey effort was not sufficient to detect all possible burrows on the site. Burrowing owls have been historically documented within and near the project site (eBird 2023, CDFW 2023). If burrowing owls were to occur on or adjacent to the site at the time of project construction, individual owls could be crushed or buried during earth-moving activities, or owls could be disturbed such that they abandoned their nests. These small raptors are protected under the federal Migratory Bird Treaty Act and Fish and Game Code. Mortality of individual birds would be a violation of state and federal law, and is considered a potentially significant impact of the project.

Mitigation. Prior to project construction one or more of the following measures will be implemented as necessary:

Mitigation Measure 4.1.3a (Take Avoidance Surveys). A take avoidance survey will be conducted by a qualified biologist for burrowing owls within 30 days of the onset of construction. This take avoidance survey will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The survey area will include all suitable habitat within and up to 500 feet outside of project impact areas, where accessible.

Mitigation Measure 4.1.3b (Avoidance of Active Nests). If take avoidance surveys are undertaken during the breeding season (February through August) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet will be established around all active owl nests. The buffer areas will be enclosed

with temporary fencing, and construction equipment and workers will not enter the enclosed setback areas. Buffers will remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

Mitigation Measure 4.1.3c (Avoidance or Passive Relocation of Resident Owls). During the non-breeding season (September through January), resident owls occupying burrows in areas proposed for development will either be avoided by a minimum distance of 150 feet or passively relocated to alternative habitat. The relocation of resident owls must be conducted according to a relocation plan prepared by a qualified biologist.

Compliance with the above mitigation measures will reduce construction-related impacts to burrowing owls to a less than significant level and facilitate compliance with state and federal laws protecting nesting raptors and migratory birds.

4.1.4 Project Impacts to Mohave Ground Squirrel from Construction Mortality

Potential Impacts. Areas of the project site containing desert scrub and alkali flat habitat provide potential foraging and breeding habitat for the Mohave ground squirrel. This species has been documented in similar habitat adjacent to the project site. Ruderal areas of the project site provide unsuitable to marginal Mohave ground squirrel habitat. If Mohave ground squirrel were present at the time of construction, then construction-related activities have the potential to cause Mohave ground squirrel mortality. Project-related mortality of Mohave ground squirrels is considered a potentially significant impact and would be a violation of the state ESA.

Mitigation. Prior to construction, the following measures will be implemented.

Mitigation Measure 4.1.4a (Pre-construction Surveys). Protocol level surveys will be conducted in desert scrub and alkali flat habitats of the project site prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the Mohave ground squirrel. These surveys will be conducted by a qualified biologist in accordance with the CDFW's *Mohave Ground Squirrel Survey Guidelines* (July 2010), and will consist of visual surveys and trapping surveys if visual surveys fail to detect the species. Survey results will be submitted to the CDFW. Negative results of these surveys are valid for one year, following which the surveys will be repeated if construction has not commenced.

Mitigation Measure 4.1.4b (Consultation and Permitting). Should surveys find Mohave ground squirrel on site, the project applicant will consult with CDFW for guidance on how to proceed. CDFW will likely require "take authorization" in the form of an Incidental Take Permit (ITP).

Mitigation Measure 4.1.4c (Agency-Specified Measures). The project applicant will implement all measures recommended by CDFW during the aforementioned consultation and/or stipulated by the project's ITP, if issued. These measures may include compensatory mitigation, a Worker Environmental Awareness and Training Program, monitoring, ground squirrel burrow excavation and relocation of Mohave ground squirrels, and reporting.

Implementation of these measures will reduce construction-related impacts to the Mohave ground squirrel to a less than significant level and facilitate compliance with state law.

4.1.5 Construction Mortality of the American Badger

Potential Impacts. Evidence of past or present American badger occupation of the project site in the form of suitably sized burrows or evidence of badger digging was not observed during surveys conducted by LOA in June 2015 or April 2023. However, potentially suitable habitat occurs within desert scrub and alkali flat portions of the project site. If badgers were to occur on the project site at the time of construction, ground disturbance from construction-related activities could result in the mortality of American badgers. Mortality of individual badgers would constitute a significant impact of the project.

Mitigation. The following measures will be implemented to avoid and minimize the potential for project-related mortality of American badgers.

Mitigation Measure 4.1.5a (Preconstruction Surveys). A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the onset of construction, within desert scrub habitats of the project site.

Mitigation Measure 4.1.5b (Avoidance). Should an active sleeping den be identified during the preconstruction surveys, the den shall be identified in the field with brightly-colored fencing or flagging, and avoided until a qualified biologist has determined that it has been abandoned. Should an active natal den be identified, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.

Implementation of these measures will reduce potential construction-related project impacts to the American badger to a less than significant level.

4.1.6 Disturbance to Waters of the State and United States

Potential Impacts. A large wetland area within the alkali flat on the project site is likely a water of the State and possibly a water of the U.S. The project entails the possible construction of a wastewater treatment pond in this area that would eliminate this wetland as it currently exists. Such an activity may require a permit from the Lahontan RWQCB and USACE and is considered a potentially significant project impact.

Mitigation. If the project will impact the wetland in question, the following measures will be implemented:

> ***Mitigation Measure 4.1.6a (Delineation and Notification).*** Prior to development of the future pond site, an aquatic resources delineation (ARD) will be conducted across the development site according to standards acceptable to the Lahontan RWQCB and USACE to determine the actual extent of the wetland boundaries. It is recommended that the ARD be submitted to the Lahontan RWQCB and USACE for a jurisdictional determination. If the agencies decline jurisdiction, then no other action is required.
>
> ***Mitigation Measure 4.1.6b (Permitting).*** If one or both of the agencies claim jurisdiction and the specific project development actions trigger the need for a permit from the agencies, appropriate permits will be obtained from the RWQCB and/or USACE prior to work in the wetlands, and all permit conditions will be implemented. Alternatively, the City can pursue permits without a jurisdictional determination from the agencies and include the ARD as a part of the permit application(s).

Adherence to the above measures would reduce impacts to waters of the State and U.S. to a less than significant level.

4.2 LESS THAN SIGNIFICANT PROJECT IMPACTS

4.2.1 Loss of Habitat or Direct Impact to Special Status Plants

Potential Impacts. One special status vascular plant species is known to occur in the vicinity of the project site, Clokey's cryptantha (see Table 1). This plant species is presumed absent from the project site due to the absence of suitable habitat. Therefore, the proposed project would have no impact on this or any other special status plant species.

Mitigation. Mitigation measures are not warranted.

4.2.2 Impact to Mohave Tui Chub

Potential Impacts. The tui chub population and the water quality of the seep systems they inhabit are closely monitored by NAWS. The City of Ridgecrest is working with NAWS to implement a wastewater treatment plan that will assure continued success of this population of Mohave tui chub and meet water quality standards that have been established in the *Mohave Tui Chub Recovery Plan* (Taylor and Williams, 1984) and the *Technical Approach for a Mohave Tui Chub Protection Plan* (Feldmeth and Bilhorn, 1991) for the protection of this species. Given the ongoing and current effort to assure the tui chub population on NAWS is protected, this investigation assumes that the proposed project will have a less than significant effect on the local Mohave tui chub population.

Mitigation. Mitigation measures are not warranted.

4.2.3 Loss of Habitat or Direct Impact to Special Status Animals Absent or Unlikely to Occur on the Site

Potential Impacts. Of the 14 special status animal species potentially occurring in the region, four species would be absent or unlikely to occur on the site due to the absence of suitable habitat or the project's being situated outside the known range of the species. One such species, the Mohave tui chub, was discussed in the previous section based on its potential to be indirectly affected by the project and will not be reconsidered here. The remaining three species are the monarch butterfly, Inyo California towhee, and desert bighorn sheep. Since there is little to no likelihood that these species would use the site, disturbance from future development of the project site would have no effect on these species.

Mitigation. No mitigations are warranted.

4.2.4 Impacts to Special Status Animals that may Occur on the Site as Occasional or Regular Foragers but Breed Elsewhere

Four species may utilize the site for foraging only. These species include the bank swallow, Townsend's big-eared bat, spotted bat, and pallid bat. All four species are highly mobile while foraging and would not be vulnerable to construction-related injury or mortality, as they could

simply avoid or fly away from construction disturbance. Moreover, the three bat species forage nocturnally, when no work activities are likely to occur.

These four species also would not be affected by project-related loss of habitat. Similar and more suitable foraging habitat is abundant throughout the region. Furthermore, the air space above the completed project is expected to provide nearly the same foraging opportunity after project construction. For these reasons, project impacts to these four species are considered less than significant.

Mitigation. No mitigations are warranted.

4.2.5 Loss of Habitat for Special Status Animals that may Breed and Forage on the Site

Six species may utilize desert scrub and/or alkali scrub habitat on the site for breeding and foraging, of which approximately 24 acres could experience permanent impacts. These species include the desert tortoise, Le Conte's thrasher, loggerhead shrike, burrowing owl, Mohave ground squirrel, and American badger. The habitat value of the site's desert scrub and alkali flat habitat is diminished by the close proximity of human development. None of these species were observed on the project site during the two field surveys and no CNDDB occurrences of these species exist on the project site. However, the Le Conte's thrasher and loggerhead shrike have been documented on the site a number of times by casual observers (eBird 2023). Actual use of the project site by the other four species is unknown at this time. Many square miles of similar and more suitable foraging habitat is abundant throughout the region, including numerous acres of desert scrub habitat monitored and managed by the Department of the Navy located within the NAWS. For the reasons stated above, the project would not significantly reduce the amount or quality of foraging habitat currently available in the region for these six species.

Mitigation. No mitigations are warranted.

4.2.6 Project Impacts to Fish or Wildlife Movement Corridors

Potential Impacts. The project site contains no geographic elements characteristic of a movement corridor (i.e. ridge tops, significant drainages, riparian corridors, etc.) and does not serve as a fish or wildlife movement corridor. Because no part of the project site serves as a fish

and wildlife movement corridor, the project will have no effect on regional fish or wildlife movements.

Mitigation. Mitigation measures are not warranted.

4.2.7 Disturbance to Riparian Habitat or other Sensitive Habitats and Critical Habitat

Potential Impacts. No riparian or other sensitive habitats occur on the project site. Furthermore, no designated critical habitat occurs on or near the project site. Therefore, there will be no project effect on riparian, sensitive, or critical habitat.

Mitigation. Mitigations are not warranted.

4.2.8 Local Policies or Habitat Conservation Plans

Potential Impacts. The project will comply with the provisions of the 2030 City of Ridgecrest General Plan related to biological resources. These policies can be found in Attachment D. No habitat conservation plans are in effect for the project area.

Mitigation. Mitigations are not warranted.

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APPENDIX A:
VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

The plants species listed below were observed on the Ridgecrest WWTP Project Site during a survey conducted by Live Oak Associates, Inc. on June 9, 2015, and April 20, 2023. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

ASTERACEAE – Sunflower Family		
Baccharis salicifolia	Mule fat	FAC
Lasthenia californica	Goldfields	FACU
Malacothrix californica	Desert dandelion	UPL
Stephanomeria pauciflora	Wire lettuce	UPL
BORAGINACEAE – Borage Family		
Plagiobothrys canaecens	Valley popcorn flower	UPL
Cryptantha barbigera	Bearded cryptantha	UPL
Heliotropium curassavicum	Salt heliotrope	FACU
BRASSICACEAE – Mustard Family		
Lepidium fremontii	Bush peppergrass	UPL
Sisymbrium irio	London rocket	UPL
Stanleya pinnata	Prince's plume	UPL
CHENOPODIACEAE – Goosefoot Family		
Atriplex polycarpa	Allscale	FACU
Bassia hyssopifolia	Five horn bassia	FACU
Chenopodium album	Lambs quarters	FACU
Salsola tragus	Russian thistle	FACU
CUPRESSACEAE – Cypress Family		
Juniperus sp.	Juniper	UPL
FABACEAE – Legume Family		
Lupinus shockley	Shockley lupine	UPL
GERANIACEAE – Geranium Family		
Erodium cicutarium	Red-stemmed filaree	UPL
LOASACEAE – Stickleaf Family		
Mentzelia albicaulis	Whitestem blazingstar	UPL
MALVACEAE – Mallow Family		
Malvella leprosa	Alkali mallow	FACU

MORACEAE – Mulberry Family		
Morus alba	White mulberry	UPL
ONAGRACEAE – Evening Primrose Family		
Eremothera boothii	Booth's sun cups	UPL
POACEAE - Grass Family		
Distichlis spicata	Saltgrass	FAC
Schismus arabicus	Arabian schismus	UPL
SALICACEAE – Willow Family		
Populus fremontii	Fremont cottonwood	UPL
SOLONACEAE – Nightshade Family		
Datura wrightii	Datura	UPL
TAMARICACEAE – Tamarisk Family		
Tamarix ramosissima	Tamarisk	FAC
TYPHACEAE – Cattail Family		
Typha latifolia	Broad-leaved cattail	OBL
ZYGOPHYLLACEAE - Caltrop Family		
Larrea tridentata	Creosote	UPL

APPENDIX B:
TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely or from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the Ridgecrest WWTP Project Site during surveys conducted by Live Oak Associates, Inc. on June 9, 2015 and April 20, 2023 have been noted with an asterisk.

CLASS: REPTILIA (Reptiles)
ORDER: TESTUDINES (Turtles)
FAMILY: TESTUDINIDAE (True Land Tortoises)
Desert Tortoise (*Gopherus agassizii*)
ORDER: SQUAMATA (Lizards and Snakes)
FAMILY: IGUANIDAE (Iguanids)
Desert Iguana (*Dipsosaurus dorsalis*)
FAMILY: CROTAPHYTIDAE (Collared and Leopard Lizards)
Long-Nosed Leopard Lizard (*Gambelia wislizenii*)
FAMILY: PHRYNOSOMATIDAE
Zebra-Tailed Lizard (*Callisaurus draconoide*s)
*Common Side-Blotched Lizard (*Uta stansburiana*)
Desert Horned Lizard (*Phrynosoma platyrhinos*)
FAMILY: XANTUSIIDAE (Night Lizards)
Desert Night Lizard (*Xantusia vigilis*)
FAMILY: TEIIDAE (Whiptails and Relatives)
*Western Whiptail (*Aspidoscelis tigris*)
FAMILY: COLUBRIDAE (Colubrids)
Red Racer (*Coluber flagellum*)
Desert Striped Whipsnake (*Masticophis taeniatus*)
Mohave Patch-Nosed Snake (*Salvadora hexalepis mojavensis*)
Gophersnake (*Pituophis catenifer*)
Glossy Snake (*Arizona elegans*)
California Kingsnake (*Lampropeltis californiae*)
Long-Nosed Snake (*Rhinocheilus lecontei*)
FAMILY: VIPERIDAE (Vipers)
Mojave Desert Sidewinder (*Crotalus cerastes cerastes*)
Northern Mojave Rattlesnake (*Crotalus scutulatus scutulatus*)

CLASS: AVES (Birds)
ORDER: GAVIIFORMES (Loons)
FAMILY: PODICIPEDIDAE (Grebes)
Pied-Billed Grebe (*Podilymbus podiceps*)
*Eared Grebe (*Podiceps nigricollis*)
ORDER: PELECANIFORMES (Tropicbirds, Pelicans and Relatives)
FAMILY: PHALACROCORACIDAE (Cormorants)

*Double-Crested Cormorant (*Phalacrocorax auritus*)

ORDER: CICONIIFORMES (Herons, Storks, Ibises and Relatives)

FAMILY: ARDEIDAE (Herons and Bitterns)

*Great Blue Heron (*Ardea herodias*)

*Green Heron (*Butorides virescens*)

FAMILY: THRESKIORNITHIDAE (Ibises and Spoonbills)

*White-Faced Ibis (*Plegadis chihi*)

FAMILY: CATHARTIDAE (New World Vultures)

*Turkey Vulture (*Cathartes aura*)

ORDER: ANSERIFORMES (Screamers, Ducks and Relatives)

FAMILY: ANATIDAE (Swans, Geese and Ducks)

Snow Goose (*Anser caerulescens*)

Ross Goose (*Anser rossii*)

Canada Goose (*Branta Canadensis*)

*Gadwall (*Anas strepera*)

American Wigeon (*Anas Americana*)

*Mallard (*Anas platyrhynchos*)

*Cinnamon Teal (*Anas cyanoptera*)

*Northern Shoveler (*Anas clypeata*)

Northern Pintail (*Anas acuta*)

Green-Winged Teal (*Anas crecca*)

*Redhead (*Aythya Americana*)

Bufflehead (*Bucephala albeola*)

*Ruddy Duck (*Oxyura jamaicensis*)

ORDER: FALCONIFORMES (Vultures, Hawks and Falcons)

FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures and Harriers)

Northern Harrier (*Circus cyaneus*)

*Red-Tailed Hawk (*Buteo jamaicensis*)

FAMILY: FALCONIDAE (Caracaras and Falcons)

*American Kestrel (*Falco sparverius*)

ORDER: GALLIFORMES (Magapodes, Curassows, Pheasants and Relatives)

FAMILY: ODONTOPHORIDAE (New World Quail)

California Quail (*Callipepla californica*)

ORDER: GRUIFORMES (Cranes, Rails and Relatives)

FAMILY: RALLIDAE (Rails, Gallinules and Coots)

*Virginia Rail (*Rallus limicola*)

*Common Moorhen (*Gallinula chloropus*)

*American Coot (*Fulica americana*)

ORDER: CHARADRIIFORMES (Shorebirds, Gulls and Relatives)

FAMILY: CHARADRIIDAE (Plovers and Relatives)

*Killdeer (*Charadrius vociferus*)

FAMILY: RECURVIROSTRIDAE (Avocets and Stilts)

*Black-Necked Stilt (*Himantopus mexicanus*)

*American Avocet (*Recurvirostra americana*)

FAMILY: COLOPACIDAE (Sandpipers and Relatives)

*Greater Yellowlegs (*Tringa melanoleuca*)

Lesser Yellowlegs (*Tringa flavipes*)
Spotted Sandpiper (*Actitis macularia*)
Western Sandpiper (*Calidris mauri*)
*Least Sandpiper (*Calidris minutilla*)
Long-Billed Dowitcher (*Limnodromus scolopaceus*)
*Wilson's Phalarope (*Phalaropus tricolor*)
Red-Necked Phalarope (*Phalaropus lobatus*)

FAMILY: LARIDAE (Skuas, Gulls, Terns and Skimmers)

Ring-Billed Gull (*Larus delawarensis*)
*California Gull (*Larus californicus*)
Black Tern (*Chlidonias niger*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

*Rock Dove (*Columba livia*)
*Eurasian Collared-Dove (*Streptopelia decaocto*)
*Mourning Dove (*Zenaida macroura*)

ORDER: CUCULIFORMES (Cuckoos and Relatives)

FAMILY: CUCULIDAE (Typical Cuckoos)

Greater Roadrunner (*Geococcyx californianus*)

ORDER: STRIGIFORMES (Owls)

FAMILY: STRIGIDAE (Typical Owls)

Burrowing Owl (*Athene cunicularia*)

ORDER: CAPRIMULGIFORME (Goatsuckers and Relatives)

FAMILY: CAPRIMULGIDAE (Goatsuckers)

*Lesser Nighthawk (*Chordeiles acutipennis*)

ORDER: APODIFORMES (Swifts and Hummingbirds)

FAMILY: TROCHILIDAE (Hummingbirds)

Black-Chinned Hummingbird (*Archilochus alexandri*)
Anna's Hummingbird (*Calypte anna*)
Costa's Hummingbird (*Calypte costae*)
Rufous Hummingbird (*Selasphorus rufus*)

ORDER: PICIFORMES (Woodpeckers and Relatives)

FAMILY: PICIDAE (Woodpeckers and Wrynecks)

Red-Naped Sapsucker (*Sphyrapicus nuchalis*)
Ladder-Backed Woodpecker (*Picoides scalaris*)
Northern Flicker (*Colaptes auratus*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)

Western Wood-Pewee (*Contopus sordidulus*)
Pacific-Slope Flycatcher (*Empidonax difficilis*)
Black Phoebe (*Sayornis nigricans*)
*Say's Phoebe (*Sayornis saya*)
Ash-Throated Flycatcher (*Myiarchus cinerascens*)
*Western Kingbird (*Tyrannus verticalis*)

FAMILY: LANIIDAE (Shrikes)

Loggerhead Shrike (*Lanius ludovicianus*)

FAMILY: VIREONIDAE (Typical Vireos)
Warbling Vireo (*Vireo gilvus*)
FAMILY: CORVIDAE (Jays, Magpies and Crows)
*Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
*Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
Tree Swallow (*Tachycineta bicolor*)
Violet-Green Swallow (*Tachycineta thalassina*)
*Northern Rough-Winged Swallow (*Stelgidopteryx serripennis*)
Bank Swallow (*Riparia riparia*)
Cliff Swallow (*Petrochelidon pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
FAMILY: REMIZIDAE (Verdin)
Verdin (*Auriparus flaviceps*)
FAMILY: TROGLODYTIDAE (Wrens)
Rock Wren (*Salpinctes obsoletus*)
Bewick's Wren (*Thryomanes bewickii*)
House Wren (*Troglodytes aedon*)
Marsh Wren (*Cistothorus palustris*)
FAMILY: REGULIDAE (Kinglets)
Ruby-Crowned Kinglet (*Regulus calendula*)
FAMILY: SYLVIIDAE (Old World Warblers and Gnatcatchers)
Blue-Gray Gnatcatcher (*Polioptila caerulea*)
FAMILY: TURDIDAE (Thrushes)
Western Bluebird (*Sialia mexicana*)
Mountain Bluebird (*Sialia currucoides*)
Hermit Thrush (*Catharus guttatus*)
American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
*Northern Mockingbird (*Mimus polyglottos*)
Sage Thrasher (*Oreoscoptes montanus*)
Le Conte's Thrasher (*Toxostoma lecontei*)
FAMILY: STURNIDAE (Starlings and Allies)
European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubrescens*)
FAMILY: BOMBYCILLIDAE (Waxwings)
Cedar Waxwing (*Bombycilla cedrorum*)
FAMILY: PTILOGONATIDAE (Silky Flycatchers)
Phainopepla (*Phainopepla nitens*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
Orange-Crowned Warbler (*Vermivora celata*)
Yellow Warbler (*Dendroica petechia*)
Yellow-Rumped Warbler (*Dendroica coronata*)
Black-Throated Gray Warbler (*Dendroica nigrescens*)

Common Yellowthroat (*Geothlypis trichas*)
Wilson's Warbler (*Wilsonia pusilla*)

FAMILY: THRAUPIDAE (Tanagers)

Western Tanager (*Piranga ludoviciana*)

FAMILY: EMBERIZIDAE (Emberizines)

California Towhee (*Pipilo crissalis*)
Chipping Sparrow (*Spizella passerina*)
*Brewer's Sparrow (*Spizella breweri*)
*Black-Throated Sparrow (*Amphispiza bilineata*)
*Sage Sparrow (*Amphispiza belli*)
Savannah Sparrow (*Passerculus sandwichensis*)
*Song Sparrow (*Melospiza melodia*)
Lincoln's Sparrow (*Melosp iza lincolnii*)
White-Crowned Sparrow (*Zonotrichia leucophrys*)
Dark-Eyed Junco (*Junco hyemalis*)

FAMILY: CARDINALIDAE (Cardinals, Grosbeaks and Allies)

Black-Headed Grosbeak (*Pheucticus melanocephalus*)
Lazuli Bunting (*Passerina amoena*)

FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)

*Red-Winged Blackbird (*Agelaius phoeniceus*)
Western Meadowlark (*Sturnella neglecta*)
Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*)
Brewer's Blackbird (*Euphagus cyanocephalus*)
Great-Tailed Grackle (*Quiscalus mexicanus*)
Brown-Headed Cowbird (*Molothrus ater*)
Bullock's Oriole (*Icterus bullockii*)

FAMILY: FRINGILLIDAE (Finches)

House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)
Lawrence's Goldfinch (*Carduelis lawrencei*)
American Goldfinch (*Carduelis tristis*)

FAMILY: PASSERIDAE (Old World Sparrows)

House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Evening Bats)

Little Brown Myotis (*Myotis lucifugus*)
Fringed Myotis (*Myotis thysanodes*)
Long-Legged Myotis (*Myotis volans*)
California Myotis (*Myotis californicus*)
Western Small-Footed Myotis (*Myotis ciliolabrum*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Spotted Bat (*Euderma maculatum*)
Townsend's Big-Eared Bat (*Corynorhinus townsendii townsendii*)

Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (Free-tailed Bats)

Brazilian Free-Tailed Bat (*Tadarida brasiliensis*)

ORDER: LAGOMORPHA (Rabbits, Hares and Pika)

FAMILY: LEPORIDAE (Rabbits and Hares)

*Desert Cottontail (*Sylvilagus audubonii*)

*Black-Tailed Jackrabbit (*Lepus californicus*)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks and Marmots)

*White-Tailed Antelope Squirrel (*Ammospermophilus leucurus*)

Mohave Ground Squirrel (*Spermophilus mohavensis*)

FAMILY: GEOMYIDAE (Pocket Gophers)

Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: HETEROMYIDAE (Pocket Mice and Kangaroo Rats)

Little Pocket Mouse (*Perognathus longimembris*)

Long-Tailed Pocket Mouse (*Chaetodipus formosus*)

Chisel-Toothed Kangaroo Rat (*Dipodomys microps*)

Panamint Kangaroo Rat (*Dipodomys panamintinus*)

Desert Kangaroo Rat (*Dipodomys deserti*)

Merriam's Kangaroo Rat (*Dipodomys merriami*)

FAMILY: MURIDAE (Mice, Rats and Voles)

Western Harvest Mouse (*Reithrodontomys megalotis*)

Deer Mouse (*Peromyscus maniculatus*)

Southern Grasshopper Mouse (*Onychomys torridus*)

Desert Woodrat (*Neotoma lepida*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves and Relatives)

*Coyote (*Canis latrans*)

Kit Fox (*Vulpes macrotis*)

APPENDIX C:
SELECTED SITE PHOTOGRAPHS



Photo 1: Desert scrub habitat.



Photo 2: Ruderal/developed habitat at the existing treatment plant with ornamental trees.



Photo 3: Ruderal/developed habitat in the old railroad alignment exhibiting a dense stand of allscale shrubs.



Photo 4: Wastewater pond.

APPENDIX D:
CITY OF RIDGECREST GENERAL PLAN POLICIES

OSC-4.15 Local and State Programs

The City shall participate in local and state programs that encourage energy conservation and reduction methods. [New Policy]

OSC-4.16 Landscape Improvements

The City shall encourage the planting of shade trees along all City streets to reduce radiation heating. [New Policy]

OSC-4.17 Alternative Energy Vehicles

The City shall use alternative energy vehicles, where feasible, to provide public services. [New Policy]

Biological Resources

Goal OSC-5	To continue to make the Indian Wells Valley a desirable place to live, work, and enjoy leisure time, by maintaining the high level of environmental quality characteristic of the Indian Wells Valley. [Source: Conservation Element, Goal 5.1 - revised]

OSC-5.1 Off-Highway Vehicles

The City shall prohibit off-highway vehicle use in designated habitat preservation areas, as well as in ecologically important and sensitive lands. [Source: Modified Policy 5.1.8, Conservation Element]

OSC-5.2 Cerro Coso Community College

The City shall support the BLM's efforts to retain natural open space areas surrounding Cerro Coso Community College. [Source: Policy 4.3.8, Open Space Element and Policy 5.1.9, Conservation Element]

OSC-5.3 Maintain Biological Resource Database

The City shall maintain a current database of biological resources, including maps that identify the locations of specific environmentally-sensitive habitats and lists of special-status species. [New Policy]

OSC-5.4 Development Review

The City shall review development proposals in accordance with applicable Federal, State and local statues protecting special-status species and jurisdictional wetlands. [New Policy]

OSC-5.5 Requirements for Biological Studies

On sites that have the potential to contain special-species, critical / sensitive habitats or are within 100 feet of such areas, the City shall require the project applicant to have the site surveyed by a qualified biologist in order to determine the biological impact of the development. A report on the findings of the survey shall be submitted to the City as part of the application process. [New Policy]



OSC-5.6 Regional Habitat Conservation Plan

The City shall consider the adoption of the West Mojave Habitat Conservation Plan as the regional habitat conservation plan. [New Policy – R-508 JLUS]

OSC-5.7 Appropriate Mitigation Measures

The City shall consider using appropriate mitigation measures for future projects (i.e., specific plans or individual projects) based on mitigation standards or protocols adopted by the applicable statute or agency (e.g., USFWS, CDFG, etc.) with jurisdiction over any affected sensitive habitats or special status species. [New Policy]

OSC-5.8 New Development in Sensitive Areas

The City shall require that new development in areas that are known to have particular value for biological resources be carefully planned and where possible avoided so that the value of existing sensitive vegetation and wildlife habitat can be maintained. [New Policy]

Groundwater and Water Resources

Goal OSC-6	To ensure that a supply of acceptable quality water is available to meet the present and future needs of the City and the Indian Wells Valley. The City shall continue to support the Indian Wells Valley Water District [Source: Goal 5.2, Conservation Element]

OSC-6.1 Reduce Surface and Runoff

The City shall require a construction plan prior to the groundbreaking that uses site design and grading techniques to reduce the amount of impervious surface and runoff for all new urban commercial or residential developments proposed projects. [Source: Modified Policy 5.1.10, Conservation Element]

OSC-6.2 Solid and Liquid Waste Disposal

The City shall require the disposition of solid and liquid wastes in a manner consistent with state and federal regulations to prevent contamination of the aquifer. [Source: Modified Policy 5.1.11, Conservation Element]

OSC-6.3 Establish a Sustainable Yield of Groundwater

The City shall work in partnership with the Indian Wells Water Valley Water to establish a reasonable population limit for the City and Indian Wells Valley in order to reflect the basin's capacity for sustainable yield of groundwater for future studies. [Source: Policy 5.1.12, Conservation Element]

Appendix C: Cultural Resources

Cultural Resource Investigation for the Ridgecrest Wastewater Treatment Plant Project, Kern County, California

Andrew DeLeon

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draft

USGS 7.5′ Topographic Quadrangle: Ridgecrest North, CA
Level of Investigation: CEQA Phase I, Section 106 of NHPA
Key Words: City of Ridgecrest; 360 acres

MANAGEMENT SUMMARY

The City of Ridgecrest (City) proposes to develop approximately 360 acres of new wastewater treatment facilities for the Ridgecrest Wastewater Treatment Plant Project (Project). The Project is at Naval Air Weapons Station (NAWS), China Lake in the city of Ridgecrest, Kern County, California. Under contract to Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (Æ) conducted a cultural resource investigation of the Project's Area of Potential Effects (APE) in accordance with Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). NAWS is the lead agency for Section 106 compliance, and the City is the lead agency for compliance with CEQA.

This report summarizes the methods and results of the cultural resource investigation including a records search and literature review, communication with Native American Tribal representatives, and an archaeological survey of the Project's APE. The purpose of the investigation was to determine the potential for the proposed Project to impact historical resources eligible for or listed in the California Register of Historical Resources (CRHR) and/or the National Register of Historic Places (NRHP).

The literature and records searches at the South Central Coastal and Southern San Joaquin Valley Information Centers of the California Historical Resources Information System indicate 22 cultural resources have been documented within a 0.5-mile radius of the APE. Two of these resources, a historic rail grade (15-002050) and a historic road (15-017353) are documented within the APE.

As part of the cultural resource investigation, Æ sent a request to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands File. Results of the search indicate there are no known Native American cultural resources within the APE. Per the NAHC's request, Æ contacted Native American individuals and organizations to elicit information on Native American resources within the APE, if any. As of the writing of this report, Æ has received no responses from any of eight groups and/or individuals contacted.

Æ Archaeologist Andrew DeLeon completed a 4-day intensive pedestrian archaeological survey of the approximately 360-acre APE on February 16, 2023. No newly identified cultural resources were encountered within the APE during the survey. However, the locations of the two previously recorded cultural resources documented within the APE were revisited—a segment of an abandoned China Lake Railroad spur grade (15-002050) and a historic paved access road segment (15-017353). The railroad grade was previously determined ineligible for listing on the NRHP. The paved road has not been evaluated for NRHP eligibility; however, it was previously noted as no longer retaining integrity of workmanship or feeling. Æ concurs with the previous findings of both resources. Therefore, no further management of these resources is required.

The terrain throughout most of the APE has been previously developed with graded access roads and constructed treatment ponds, as well as other construction activity associated with the current wastewater treatment facilities. While geological data for the APE was unavailable, the area within and surrounding China Lake is known to be archaeologically sensitive. Despite the highly disturbed nature of the APE, the archaeological sensitivity surrounding the Project and

within China Lake presents a possibility of encountering intact archaeological deposits or features during construction. Therefore, Æ recommends archaeological monitoring during surface grubbing/clearing and initial grading within the APE.

Field notes documenting the current investigation are on file at Æ's Hemet office. A copy of this report will also be submitted to the South Central Coastal and Southern San Joaquin Valley Information Centers.

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1
INTRODUCTION

The City of Ridgecrest (City) proposes to construct approximately 360 acres of new wastewater treatment facilities for the Ridgecrest Wastewater Treatment Plant Project (Project). The Project is at Naval Air Weapons Station (NAWS), China Lake in the city of Ridgecrest, Kern County, California (Figure 1-1). Under contract to Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (Æ) conducted a cultural resource investigation of the Project's Area of Potential Effects (APE) in accordance with Section 106 of the National Historic Preservation Act (NHPA) and the California Environmental Quality Act (CEQA). NAWS is the lead agency for Section 106 compliance, and the City is the lead agency for compliance with CEQA.



Figure 1-1 Overview of APE from center of Project, facing southwest.

For the purposes of this study, the Project Area (CEQA terminology) is encompassed by the APE (NHPA terminology). Since the APE includes the Project Area, "APE" is utilized throughout the remainder of this report. Æ Principal Investigator M. Colleen Hamilton (M.A., Registered Professional Archaeologist [RPA] 10535), was responsible for overall quality control for the Project. Æ Senior Archaeologist Joan George (B.S., Registered Archaeologist 28093) served as project manager. Fieldwork was conducted by Æ Associate Archaeologist Andrew DeLeon, (M.A., RPA 17087).

1.1 PROJECT LOCATION AND DESCRIPTION

The Project is within the northeastern portion of the city of Ridgecrest in Kern County (Figure 1-2). Specifically, the Project is within Sections 13, 14, and 23 of Township 26 South, Range 40 East, as depicted on the U.S. Geological Survey (USGS) Ridgecrest North, California 7.5-minute topographic quadrangle map (Figure 1-3). The elevation within the APE is approximately 2,210 feet above mean sea level.

The City proposes to develop approximately 360 acres of new wastewater treatment facilities, of which 240 acres consist of holding ponds. The new facilities will also include new access roads, various pumps and holding tanks, sludge drying beds, storage spaces, and office buildings. Various structures associated with the old facility may be demolished as a result of new Project construction. The maximum depth of ground disturbance during Project construction will be 27 feet.

1.2 REGULATORY CONTEXT

The Project is subject to both federal and state regulations concerning cultural resources. NAWS is the lead agency for Section 106 compliance, and the City is the lead agency under CEQA.

1.2.1 National Historic Preservation Act

Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties. A historic property as defined in 36 CFR 800.16(l)(1) means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Undertakings include any federally funded, licensed, or permitted project (36 CFR 800.16[y]).

In the context of a federally permitted undertaking, such as this Project, a historic property generally is at least 50 years old and meets one or more of the four NRHP criteria of historical significance:

A. that are associated with events that have made a significant contribution to the broad patterns of our history;

B. that are associated with the lives of persons significant in our past;

C. that 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. that have yielded, or may be likely to yield, information important to prehistory or history.

To be eligible for nomination to the NRHP, the historic property also must possess such integrity of location, design, setting, materials, workmanship, feeling, and association (36 CFR 60.4) that it is considered a good representative of a significant historical theme or pattern. A consultant's role is to render a professional recommendation rather than an administrative determination of

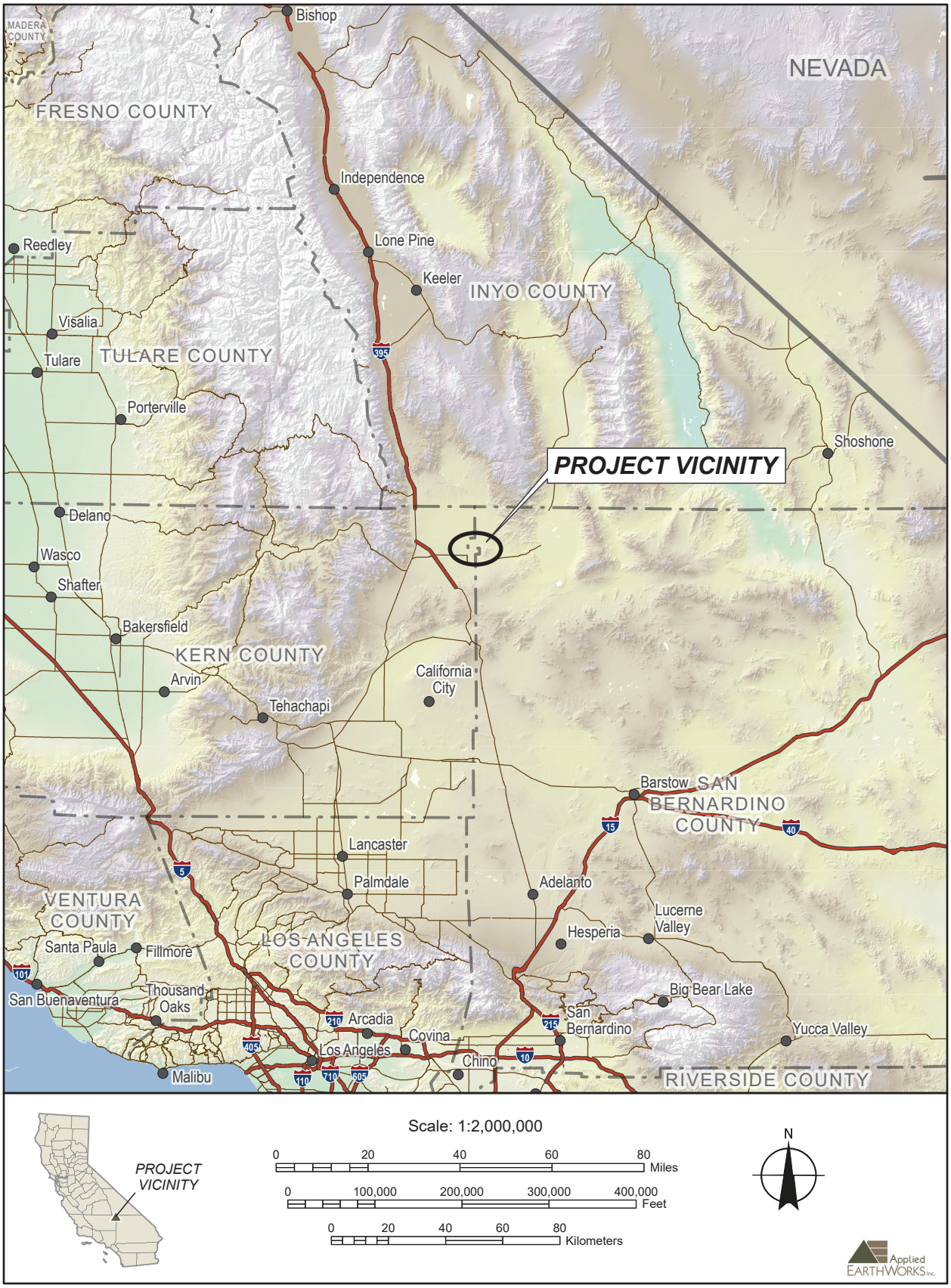


Figure 1-2 Project vicinity in Kern County, California.

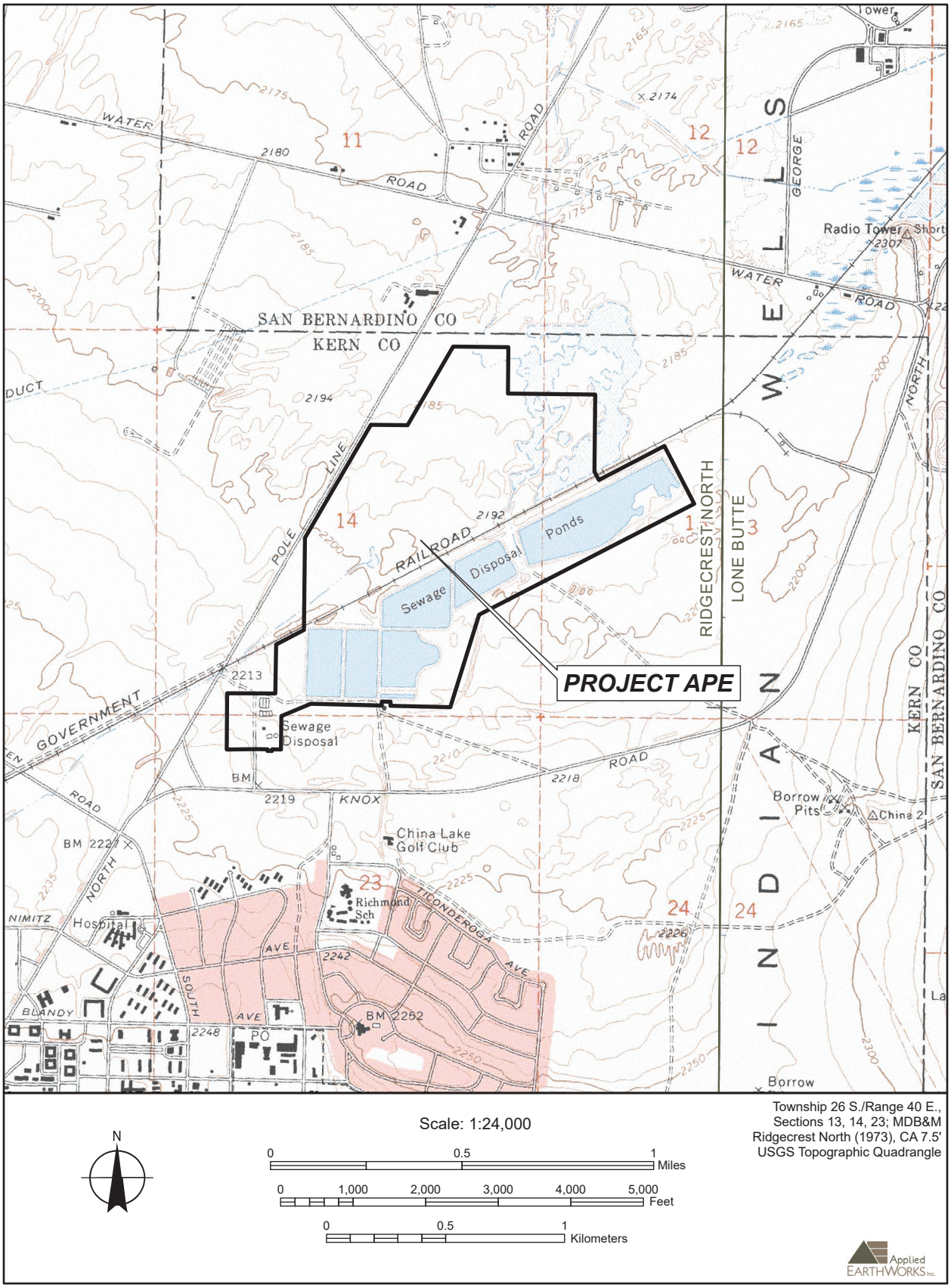


Figure 1-2 APE location on USGS Ridgecrest North 7.5-minute topographic quadrangle.

NRHP eligibility. In the case of this Project, NAWS in consultation with the California State Historic Preservation Officer (SHPO) and Native American tribes will determine NRHP eligibility. If the SHPO, tribes, and NAWS disagree about a resource's NRHP eligibility, the Advisory Council on Historic Preservation or the Keeper of the NRHP may become involved in the eligibility determination process if requested.

1.2.2 California Environmental Quality Act

The Project requires discretionary approval from the City and is therefore subject to the requirements of CEQA. The CEQA Statute and Guidelines directs lead agencies to determine whether a project will have a significant impact on historical resources. A cultural resource considered "historically significant" is considered a "historical resource," if over 50 years of age and is included in a local register of historical resources, or is listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR) under any one of the following criteria (Title 14, California Code of Regulations [CCR], Section 15064.5):

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

2. Is associated with the lives of persons important in our past;

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

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

Compliance with CEQA's cultural resource provisions typically involves several steps. Briefly, archival research and field surveys are needed, and identified cultural resources are inventoried and evaluated in prescribed ways. Prehistoric and historical archaeological sites, as well as standing structures, buildings, and objects deemed historically significant and sufficiently intact (i.e., historical resources), must be considered in project planning and development.

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 (14 CCR 15064.5[b]) and the lead agency is responsible for identifying potentially feasible measures to mitigate significant adverse changes in the significance of a historical resource (14 CCR 15064.5[b]4).

1.3 REPORT ORGANIZATION

This report documents the results of a cultural resource investigation of the proposed APE. Chapter 1 has described the Project and its location, defined the scope of the cultural resource investigation, and stated the regulatory context. Chapter 2 summarizes the natural and cultural setting of the APE and surrounding region. Chapter 3 presents the results of the archaeological literature and records search. Chapter 4 summarizes the Sacred Lands File (SLF) search with the Native American Heritage Commission (NAHC) and Native American communications. The field survey methods and results are discussed in Chapter 5. Cultural resource management

recommendations are provided in Chapter 6, and bibliographic references are cited in Chapter 7. California Department of Parks and Recreation (DPR) 523-series recording forms are provided as Appendix A. Results of the SLF search and correspondence with Native American groups are included as Appendix B.

2
SETTING

This chapter describes the prehistoric, ethnographic, and historical cultural setting of the Project to provide a context for understanding the nature and significance of cultural resources identified within the region. Prehistorically, ethnographically, and historically, the nature and distribution of human activities in the region have been affected by such factors as topography and the availability of water and natural resources. Therefore, prior to a discussion of the cultural setting, the environmental setting of the area is summarized below.

2.1 ENVIRONMENTAL SETTING

The Project lies within the northern Mojave Desert, a triangle shaped area bounded by the southern extent of the Sierra Nevada, Garlock Fault, Owens Valley and the Great Basin province to the north and west with the San Andras fault as the boundary to the south (Norris and Webb 1990; Schoenherr 1992). The Mojave extends east into Nevada and Arizona. Average elevation is approximately 3,500 feet; however, Death Valley, the lowest elevation in the United States is contained with the Mojave. Vegetation of the area is characterized by Joshua Trees, Creosote Bush, and various cacti at warmer, lower elevations with more cold resistant sagebrush and pinyon pine at higher elevations (Schoenherr 1992). Cold resistant vegetation continues into the Great Basin; however, warm weather flora tends to only occur in the Mojave (Schoenherr 1992). The Mojave is a hot desert with very little precipitation, which occurs primarily in the winter months. The dry climate and sandy coarse soils mean vegetation is very drought resistant. The Project is in the city of Ridgecrest, which lies in the Indian Wells Valley, bounded by the Coso Range to the north, which separates it from the Owens Valley to the north with the El Paso Mountains bounding it to the south.

Although ecologically the Mojave Desert is distinct from the Great Basin, geologically in California the Basin and Range province has also included the area of the eastern Sierra Nevada extending to the Nevada state line, encompassing both regions (Norris and Webb 1990).

2.2 PREHISTORIC SETTING

Various cultural chronologies have been proposed for the Mojave Desert, Western Great Basin, and Sierra Nevada, all of them are somewhat applicable to the APE and vicinity. These schemes generally overlap, although regional and local differences make concordance difficult. In order to facilitate discussions of regional prehistory, this document follows Sutton et al. (2007) in dividing prehistory up by geologic periods (Pleistocene, Early Holocene, Middle Holocene, and Late Holocene) and using the terms for cultural phases and complexes only when these are useful for noting change within a time period. In keeping with both Sutton et al. (2007) and Moratto (1984), Owens Valley is treated culturally as a part of the larger Mojave and Great Basin province, and the terminology for these regions will be given preference over Sierra Nevada terminology.

2.2.1 Terminal Pleistocene (12,000–10,000 B.P.)

Although evidence of earlier occupation is accumulating, the earliest confirmed evidence of humans in much of the Americas comes in the form of Clovis points, distinctive fluted projectile points, identified throughout the Americas. Clovis points are generally recovered from contexts dating to approximately 10,000–8000 B.C. Clovis points have been discovered in the Great Basin, Mojave, and Sierra Nevada, and on the beaches of Owens Lake (Busby et al. 1979; Moratto 1984; Rondeau 2009). Clovis points in the Mojave and Great Basin are often found in dry lakebeds, including Owens Lake, and near streams (Rondeau 2009; Sutton et al. 2007). Dating cultural remains to the Terminal Pleistocene is often difficult as most of the recovered Clovis points are isolated occurrences and many of the sites lack datable organic materials or obsidian. Due to these data limitations, it is difficult to say much about the people who inhabited the region during this time, other than they were likely highly mobile hunter-gatherers, leaving behind little in the way of material remains.

2.2.2 Early Holocene (10,000–8500 B.P.)

Mojave and Great Basin sites dating to the period are typically marked by Lake Mojave and Silver Lake projectile points, numerous bifaces, unifacial tools, crescents, cobble-core tools and ground stone implements (Busby et al. 1979; Sutton et al. 2007). Sometimes referred to as Lake Mojave Culture sites, Early Holocene sites include tools manufactured from a wide range of materials (Basgall and McGuire 1988; Sutton et al. 2007), suggesting that either raw materials were gathered during annual foraging far away from the home base, or raw materials were moved through exchange networks. Marine shell beads appear in the archaeological record, indicating a broad exchange network (Sutton et al. 2007). The type and designs of Early Holocene tools are consistent with long-term curation and transport. Researchers have proposed, variously, that Early Holocene peoples in the region were focused on hunting (and that hunting itself focused on different types of game) or on the gathering of plant materials (Busby et al. 1979; Sutton et al. 2007). It is likely that there was considerable regional variation in subsistence regimes during this period. Data from excavations at the Lubkin Creek site (CA-INY-30), south of Lone Pine, suggest a reliance on large game hunting and high residential mobility during the Early Holocene stretching into the Middle Holocene (Basgall and McGuire 1988).

2.2.3 Middle Holocene (8500–4000 B.P.)

A transition from Early Holocene to Middle Holocene adaptations appears to have occurred during the period from 7000 to 6000 B.C., but for simplicity's sake, the separation between these periods is set at 6000 B.C. Middle Holocene sites conforming to the Pinto Complex cultural pattern are widespread throughout the Mojave Desert and Great Basin by 6000 B.C. These sites exhibit a general continuity of flaked stone tool manufacture and use, although the switch to Pinto points may indicate a shift from reliance on projectiles such as darts to a reliance on thrusting spears (Sutton et al. 2007:238). Ground stone is relatively common in Middle Holocene sites, indicating that plant foods were increasingly important, though there is evidence of local variation. Sites near perennial water sources tend to be large, with well-developed middens. These findings may indicate the development of a collector-type subsistence strategy focused on lacustrine and riparian locations, with reliance on logistical forays into the surrounding area and into the Sierra Nevada (Moratto 1984:333; Sutton et al. 2007:238-239; Warren 2002).

Data from Basgall and McGuire's excavations at the Lubkin Creek site indicate that the Early Holocene practices, including high residential mobility and a focus on the hunting of large game to the exclusion of plant resources, may have continued through the Middle Holocene in Inyo County, and specifically in the northern Owens Valley (Basgall and McGuire 1988). Bettinger (1975b, 1976) proposed that 3500 B.C. marked the beginning of the Clyde Phase (which Bettinger placed as occurring between 3500 B.C. and 1200 B.C.) in the Owens Valley, during which base camps were settled on the rivers, with vital resources being collected at logistical camps in the uplands (Garfinkel 1976).

Traditionally, researchers have argued for a hiatus in occupation of the Owens Valley between 6000 and 4000 B.C., but it is likely that this apparent hiatus may reflect a lack of data rather than an actual occupation hiatus (Busby et al. 1979). Interestingly, Sutton et al. (2007:241) suggest that there may have been a general hiatus in occupation of the Mojave ca. 3000 to 2000 B.C., a period during which there is evidence of increasing cultural change in the Owens Valley (Basgall and McGuire 1988; Bettinger 1976; Busby et al. 1979). The relationship, if any, between these hiatuses is unclear.

2.2.4 Late Holocene (4000 B.P. to Present)

Sutton et al. (2007) describe the Gypsum Complex as the earliest known cultural complex in the northern and western Mojave Desert, dating to ca. 2000 B.C. through A.D. 200. However, Lanning (1963) identifies the onset of the Little Lake phase in the Owens Valley at 3000 B.C. Little Lake sites contain Pinto, Lake Mojave, and Silver Lake projectile points; chipped stone disks, stone saws, core tools, leaf-shaped knives, narrow round-based drills, and milling stones (Moratto 1984:375-376). As described above, Bettinger (1976) identified the onset of an Owens Valley Late Holocene cultural phase that he called the Clyde phase somewhat earlier, in 3500 B.C.

Sutton et al. (2007) describe northwestern Mojave (inclusive of Inyo County) sites from this period as being more numerous, but generally smaller in size, than earlier sites. Settlements dating to this period appear to have been centered on drainages. An elaboration of ritual life is attested to by the presence of quartz crystal, paint, and rock art as well as a good deal of rock art, specifically petroglyph panels, present in the volcanic tablelands near Bishop (Chalfant 1922; Fatooh n.d.). Large and small game continued to be important to the people of the Mojave (Sutton et al. 2007). Within the Owens Valley, sites dating to this period show continuity with the earlier Little Lake sites, though there is a drop-off in the volume of core tools after 1500 B.C. Around 500 B.C., central California "Middle Horizon" shell beads appear in the Owens Valley, accompanied by pumice shaft smoothers and slate tablets. Accompanying these artifacts are also the Rose Spring projectile points, chipped ovals, and expanding base drills, suggesting changes in the manufacture of goods (Moratto 1984:376). Bettinger (1975a, 1977; see also Garfinkel 1976) argued that the people of the Owens Valley began to more intensively exploit dry land rather than riparian habitats beginning around 1200 B.C. (a period that he termed the Cowhorn Phase, lasting until ca. A.D. 600).

After A.D. 200, the bow and arrow diffused across the western United States (probably circa A.D. 500 [Justice 2002]), and it appears that populations increased, producing sites based near springs, drainages, and lakeshores. Sites occupied in the period following A.D. 200 typically contain well-developed middens and the remains of residential and utilitarian structures. A

variety of artifacts have been recovered from these sites including Eastgate and Rose Spring projectile points (made primarily out of chert or Coso obsidian), stone knives, drills, pipes (possibly indicating changes to ritual activity), bone awls, and an array of milling tools (possibly indicating a greater reliance on a broad range of vegetal foods). Core tools essentially vanished from the tool kit, and cobble pestles and both steatite and split and punched *Olivella* beads appeared (Moratto 1984:376; Sutton et al. 2007).

Locally, pinyon exploitation appears to have become more important around A.D. 600, and may have been used to compensate for a growing population (Bettinger 1976; Busby et al. 1979:207). Hunting focused on lagomorphs and rodents, possibly indicating that the increased human population had depleted larger game (Busby et al. 1979:205-207; Sutton et al. 2007). The presence of marine shell in sites dating to this period indicates that the study area was part of a large exchange network leading all the way to the coast (Sutton et al. 2007). The onset of the Medieval Climatic Anomaly ca. A.D. 950 resulted in the desiccation of lakes and the drying of once active drainages (Sutton et al. 2007:242). The changing climate may have pushed populations out of the northern Mojave Desert and into other regions, including the study area (Bouey 1979; Busby et al. 1979:205).

Hester (1973:127) holds that the Late Prehistoric complex (or, more accurately, complexes, as pointed out by Sutton et al. [2007:242]) marks the migration of Numic speaking peoples into the northern Mojave area and expanding north and east. This hypothesis is supported by linguistic studies that indicate the arrival of Numic speakers into the Project vicinity ca. A.D. 1000 (Busby et al. 1979:207; Sutton et al. 2007:243). Sites dating to this time contain brownware ceramics, Desert Side-notched and Cottonwood projectile points, and trade beads (Busby et al. 1979:206–207).

Post-A.D. 1000, there is evidence that pinyon increased in importance as a staple food, and that intensification of pinyon use resulted in the re-organization of society around nuclear families by A.D. 1400 (Eerkens 2004; Santy and Eerkens 2010). Winter pinyon-gathering camps dating from A.D. 1300 through the nineteenth century have been identified in the Inyo Mountains (Bettinger 1975b). Further evidence of economic change includes the appearance of broad triangular and leaf-shaped knives, as well as expanded base drills at around A.D. 1300 (Moratto 1984:376).

Additional changes occurred at about A.D. 1840, likely resulting from both the further intrusion of European American settlers into California and concurrent social change among the native populations. Artifacts imported from outside Owens Valley, including shell beads, represent Late Prehistoric types. There is evidence of the entrance into the valley of a small number of Native Californians fleeing European encroachment (Chalfant 1922).

Prehistoric archaeological sites and features that might be expected within the APE include flaked stone scatters (primarily obsidian and chert), ceramic scatters, irrigation structures, hunting blinds, rock art (both pictograms and petroglyphs), and residential sites with well-developed middens.

The Coso Range to the north of the APE is the site of numerous petroglyphs and prehistoric resources, depicting anthropomorphic figures and bighorn sheep (Grant et al. 1968). Site CA-IYN-5491 is also in the Coso Range and contains the only archaeological deposit of wooden bows known in California and the Great Basin (Hildebrandt and Ruby 2004). These were

recovered at a small habitation site and were cached underneath a granite ledge. Dating suggests that these artifacts were approximately 300 years old, being cached at the site before contact with Euro-American settlers (Hildebrandt and Ruby 2004).

Approximately 70 miles to the southwest of the APE is Antelope Valley where numerous sites could offer more of a context for archaeology in the Mojave Desert. CA-LAN-192, the Lovejoy Springs site, is a deeply stratified large village site that has been extensively excavated and studied (Price et al. 2005). This site shows associations with cultures on the south coast of California. One burial at the site, dated to 2700 B.P., is of a child buried with 3,000 *Olivella* shell beads, which are associated with the Santa Barbara Channel (Price et al. 2005). There is also obsidian at the site that is sourced to the Coso volcanic field and dating to 2700 B.P., suggesting associations and trade networks to the north (Price et al. 2005).

Approximately 35 miles to the southwest of the APE is Kelso Valley in southeastern Kern County just to the east of the Sierra Nevada. Two sites were recorded here and contained midden and milling features, pictograph and petroglyph panels, and obsidian (Lloyd 2007). Although the milling features are likely associated with acorn subsistence, which would not be seen further north in the Mojave and Great Basin contexts, the other features could be similar to resources and show associations to sites further north in the Project vicinity.

2.3 ETHNOGRAPHIC SETTING

The Project lies within the traditional territory of the Koso, an area that stretches from the Sierra Nevada crest in the west 1,500 miles across the deserts of California and into Nevada. It is one of the largest areas, yet the least populated (Kroeber 1976). The boundaries are not well defined, but it appears that Owens Lake was the northern boundary of their territory with the Mono to the north (Kroeber 1976:589). To the south were the Kawaiisu, who occupied a similar habitat, that of the barren resource scarce Mojave Desert, as the Koso (Kroeber 1976). Kroeber notes that the Coso Range, to the north of the APE, was one of the four successive ranges in the area (Kroeber 1976:590).

Primary subsistence was from the Nevada pine nut and desert sand grass with various seeds and cacti known to be processed and eaten (Kroeber 1976:591–592). Subsistence from local fauna was rare and would have consisted of rabbits, rats, lizards and birds (Kroeber 1976:592).

There has been detailed research conducted within the Coso Range regarding pinyon pine nut exploitation (Hildebrandt and Ruby 2006). The archaeological record indicated that subsistence reliant on pine nut occurred later in the Owens Valley than other places in the Great Basin, and it has been suggested that this is due to other resources being depleted and population growth (Bettinger 1991). The detailed analysis considered numerous previous studies (Bettinger 1976, 1989; Delacorte 1990; Reynolds 1997), which suggested that subsistence was based on hunting large game during the Newberry period (4000-1350 B.P.) and less on pine nut procurement. Hildebrant and Ruby (2006) compare the archaeological assemblages identified during survey efforts in 1998, which included numerous diagnostic projectile points and pinyon pine nut processing features, the dates of which suggest that pine nut processing and subsistence was much more significant during the Newberry period than is suggested by previous studies. Additionally, it appears that pine nut procurement and subsistence continued later into the

Haiwee period (1350-650 B.P.) possibly due to the exploitation of the large game population (Hildebrandt and Ruby 2006).

2.4 HISTORICAL SETTING

Joseph Rutherford Walker was an explorer and expedition leader across the west, becoming the first Euro-American to traverse the Sierra Nevada, over the pass that bears his name, and proceeded into Indian Wells Valley in 1834 (Gilbert 1985). He used this route many times, including in 1843, when he led the Joseph B. Chiles emigrant party, with the first covered wagons to come to California from the east (Di Pol 2013). Walker also served as the guide for Captain John Charles Frémont's expedition that came over Walker Pass (Di Pol 2013).

In the last quarter on the nineteenth century, Indian Wells Valley was dotted with various stage and freight routes. The first permanent settlement was in 1873 at Coyote Holes; however, the first land patent was not filed until 1894 (Di Pol 2013). In 1905, the announcement was made that Los Angeles aqueduct would be built between 1908 and 1913 and subsequently, the Southern Pacific Railroad built a line from Mojave to Indian Wells Valley in 1909 (Di Pol 2013; Weals 2001).

In 1912, the Robertson family became the first settlers in the Ridgecrest area. After World War I there was an increase in settlers and land patents filed in the area. This influx was focused around the plan to create an irrigation district to bring water into Indian Wells Valley from Mono Lake, as part of the City of Los Angeles' Mono Extension project (Di Pol 2013).

In 1943, the U.S. Navy established the Naval Ordnance Test Station, later to become China Lake NAWS and the settlement of Ridgecrest grew as a result (Di Pol 2013). The Indian Wells Valley was relatively sparsely populated during the latter half of the nineteenth century and into the twentieth century. Historically, growth in the area was influenced greatly by military installations at China Lake and Inyokern in the last 70 years.

3
CULTURAL LITERATURE AND RECORDS SEARCH

On October 17, 2022, prior to the field survey of the APE, Æ requested literature and records searches of the California Historical Resource Information System from the South Central Coastal Information Center at California State University, Fullerton, and the Southern San Joaquin Valley Information Center at California State University, Bakersfield. The objective of these records searches was to determine whether any prehistoric or historical cultural resources had been recorded previously within a 0.5-mile search radius of the proposed Project. Æ also received resource shapefiles from NAWS; however, most of the data provided was already acquired from the information centers. Results of the records search indicated that 26 cultural resource studies have been conducted previously within the 0.5-mile search radius (Table 3-1). Twenty of the previous studies were within the APE. As a result, the entire APE has been investigated previously.

Table 3-1
Previous Cultural Resource Studies in the 0.5-Mile Search Radius

IC Reference #	Author(s)	Date	Title
KE-01182[a]	Schiffman, Robert A. and Garfinkel, Alan P.	1980	Draft - Archaeological Overview of Kern County
KE-01183[a]	Schiffman, Robert A. and Garfinkel, Alan P.	1981	Prehistory of Kern County - An Overview
KE-01628[a]	Sutton, Mark Q.	1987	On the Late Prehistory of the Western Mojave Desert
KE-01630[a]	Sutton, Mark Q., Forbes, Charles, and Robinson, Sylva	1978	A Possible Paleo-Indian Site Complex in the Western Mojave Desert
KE-01867[a]	Hall, Matthew C., Barker, James P., Snyder, Toni B., Weaver, Richard A., and Lawton, Harry W.	1975	Background to Prehistory of the El Paso/Red Mountain Desert Region
KE-01960[a]	Cleland, James H., Woods, Clyde M., Skinner, Elizabeth J., Kelly, Michael S., and Apple, Rebecca M.	1986	Kern River Pipeline Cultural Resource Overview
KE-01988[a]	Widell, Cherilyn	1995	Rehabilitation of Building #02340, Naval Air Weapons Station, China Lake, Kern County
KE-01991[a]	Widell, Cherilyn	1994	Rehabilitation of Building #00499, China Lake Naval Weapons Station, Kern County
KE-02002[a]	Meyers, Thomas B. and Trimble, Michael K.	1993	Archaeological Curation - Needs Assessments for Fort Sill, Oklahoma, Fort Gordon, Georgia, Vandenberg Air Force Base, California, Camp Pendleton Marine Corps Base, California, and Naval Air Weapons Station, China Lake, California
KE-02232[a]	Cawley	1961	Cawley Manuscript
KE-02244[a]	Everson, G. Dicken and Schneider, Joan S.	1994	Kelso Conference Papers: A Collection of Papers and Abstracts from the First Five Kelso Conferences on the Prehistory of the Mojave Desert

Table 3-1 (continued)
Previous Cultural Resource Studies in the 0.5-Mile Search Radius

IC Reference #	Author(s)	Date	Title
KE-02246[a]	Schiffman, Robert A., Whitley, David S., Garfinkel, Alan P., and Andrews, Stephen B.	1982	Pictographs of the Coso Region: Analysis and Interpretation of the Coso Painted Style
KE-02398[a]	Mikesell, Stephen D.	1999	Inventory and Evaluation of National Register Eligibility for Buildings and Structures on the Ranges, Naval Air Weapons Station China Lake, California
KE-02692[a]	Davis, Emma Lou, Meyers, Thomas, and Trimble, Michael	1969	Report: Field Work on the Naval Missile Impact Ranges, China Lake 1969-1974 and Archaeological Curation-Needs Assessments Technical Report No. 1
KE-02736[a]	Shepherd, Carolyn	1999	Demolition of 18 Miles of Abandoned Railraod Track, Naval Air Weapons Station, China Lake, Kern County
KE-02825[a]	Hansen, Linda	2003	Western Mojave Desert Off Road Vehicle Designation Project
KE-02826[a]	Pool, Mike and Hansen, Linda	2003	Decision Record CDCA Plan Amendment: Western Mojave Desert Off Road Vehicle Designation Project
KE-02827[a]	Hansen, Linda, Hays, Michael E., Priester, Scott, and Pool, Mike	2003	Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment Vol 1
KE-03722	Byrd, Brian F.	2007	Archaeological Survey of 2,344 Acres Near the Lake China Overflow Channel, NAWS China Lake, San Bernardino and Kern Counties
KE-04052/ SB-06669	Sampson, Seth	2010	Pearson Lab Road Grading Project, Kern and San Bernardino Counties, California NAWS Cultural Resource Number 2010-37
KE-04435	Meyer, Jack, Young, D. Craig, and Rosenthal, Jeffrey	2010	Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9 - Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways - EA 06-0A7408 TEA Grant
KE-04435[a]	Meyer, Jack, Young, D. Craig, and Rosenthal, Jeffrey S.	2010	Volume II: Appendices A Geoarchaeological Overview and Assessment of Caltrans District 6 and 9 - Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways - EA 06-0A7408 TEA Grant
KE-04595[a]	Brown, Ryan	2013	Tree Planting at the Wastewater Treatment Plant, NAWS, China Lake, Kern County, California - Cultural Resources Inventory
KE-05128	Martinez, Amanda L., Fiske, Robert B., Yohe, Robert M., and Trevino, Michelle L.	2018	Fiber Optic Transmission System (FOTS) Fy17 Cultural Resource Inventory, NAWS China Lake, Kern and San Bernardino Counties, California
KE-05187	Martinez, Mandi and Lisboa, Rafaella	2020	Cultural Resources Survey and Inventory Report for Site Inspections at Selected Areas of Concern for Naval Air Weapons Station China Lake
KE-05187	Martinez, Mandi and Sayre, David	2020	Cultural Resources Survey Work Plan for Naval Air Weapons Station China Lake Site Inspection: Installation Restoration Program Site 80

a - Study overlaps with the APE.

In addition, the records search resulted in the identification of 22 previously recorded cultural resources within the 0.5-mile search radius, including one resource noted by NAWS (CA-KER-10470H) without additional data (Table 3-2). Eleven of the resources are archaeological: five prehistoric lithic scatters, four historic refuse scatters, one unknown historic site, and one site with both historic and prehistoric components (a refuse scatter and prehistoric lithic debitage). In addition, 11 built environment resources were identified within the 0.5-mile search radius. Two of the built environment resources, a railroad spur grade (15-002050) and paved access road (15-017353) are documented within the APE. These resources are briefly described below, and more detail is provided in Appendix A.

Table 3-2
Previous Recorded Cultural Resources in the 0.5-Mile Search Radius

Primary	Trinomial	Description
Prehistoric Resources		
15-014686	CA-KER-8253	Lithic scatter; ground stone
15-014692	CA-KER-8259	Lithic scatter; ground stone
15-014694	CA-KER-8261	Lithic scatter
15-015010	CA-KER-8363	Lithic scatter
15-015907	CA-KER-8765	Lithic scatter
Historic Resources		
15-014695	CA-KER-8262H	Refuse scatter
15-017354	CA-KER-9518H	Refuse scatter
36-021480	CA-SBR-13788H	Refuse scatter
36-028525	CA-SBR-28525H	Refuse scatter
36-028526	CA-SBR-28526H	Refuse scatter
Archaeological Site with Historic and Prehistoric Components		
15-020463	CA-KER-11183/H	Historic refuse and prehistoric lithic debitage
Built Environment Resources		
15-002050[a]	CA-KER-2050H	China Lake Railroad spur grade
15-015970/ 36-023931	CA-KER-8799H/ CA-SBR-15118H	Trona Water Line and utility road
15-017353[a]	CA-KER-9517H	Sewage disposal plant access road
15-017594/ 36-027092	CA-KER-9708H/ CA-SBR-17106H	Water Road
15-018948	CA-KER-10301H	North Knox Road
15-018980	CA-KER-10332H	Paved access road
15-019186/ 36-026615	CA-KER-10459H/ CA-SBR-016850H	Pole Line Road
15-019195	CA-KER-10468H	Paved access road
15-019196	CA-KER-10469H	Paved access road
—	CA-KER-10470H	No data provided
36-028527/ 15-018228	— CA-KER-9963H	Power line

a - Resource within the APE.

3.1 15-002050

This resource is an abandoned spur grade for the China Lake Railroad. Originally recorded in 1985 and updated several times since, the grade consists of a raised gravel bed containing no rails or ties. The spur measures 2,175 feet long. The resource was evaluated by Epsilon System Solutions in 2017 and determined ineligible for listing in the NRHP.

3.2 15-017353

This resource, originally documented by NAWS in 2013, consists of a 1,265-foot-long unnamed asphalt road constructed to connect Knox Road with the base sewage disposal plant. The road appears in 1944 "As-Built" engineering plans and has undergone regular maintenance. The resource has not been evaluated for potential listing in the NRHP or CRHR.

3.3 HISTORICAL MAP REVIEW

A series of historical maps were consulted to assess land use and development in the APE. Maps consulted included USGS topographic quadrangle maps: 1915 Searles Lake 1:250,000 (1951 ed.); 1953 Ridgecrest (1970 ed.) 1:62,500; 1957 Trona (1976 ed.) 1:250,000; and 1973 Ridgecrest 1:24,000 (1976 ed.).

Both the China Lake Railroad spur (15-002050) and historic road (15-017353) appear on historic topographic maps as early as 1953. Pole Line Road, which is adjacent to the APE, also appears on the 1953 Ridgecrest map. The sewage disposal station appears on the 1973 Ridgecrest topographic map and on historic aerial photographs as early as 1985. No other buildings, structures, or features of interest are shown within the APE on any of the historical maps or photographs examined.

4
NATIVE AMERICAN COMMUNICATIONS

Æ contacted the NAHC on October 17, 2022, for a review of their SLF to determine if any known Native American cultural properties (e.g., traditional use or gathering areas, places of religious or sacred activity) are present within or adjacent to the APE. The NAHC responded on December 2, 2022, stating the SLF search was completed with negative results. The NAHC requested Æ contact Native American individuals and organizations to elicit information regarding cultural resource issues related to the proposed Project, if any.

Upon review of the Native American contact list and after removing redundancies, Æ narrowed the list to eight individuals and organizations traditionally and culturally affiliated with the geographic area of the APE. Æ sent out Project scoping letters via email and U.S. Postal Service on February 17 and 20, 2023, describing the Project and asking these individuals and organizations for their input. Copies of the letters, the list of contacts, and received responses are included in Appendix B. Æ sent follow-up email correspondence on March 3 and 16, 2023, to all the individuals and organizations initially contacted. As of the writing of this report, Æ has received no responses from the contacted representatives.

Individuals/organizations contacted include:

- James Rambeau, Chairperson of the Big Pine Paiute Tribe of the Owens Valley
- Julio Quair, Chairperson of the Chumash Council of Bakersfield
- Robert Robinson, Chairperson of the Kern Valley Indian Community
- Delia Dominguez, Chairperson of the Kitanemuk & Yowlumne Tejon Indians
- Octavio Escobedo, Chairperson of the Tejon Indian Tribe
- Robert Gomez, Chairperson of the Tubatulabals of Kern Valley
- Neil Peyron, Chairperson of the Tule River Indian Tribe
- Darrell Mike, Chairperson of the Twenty-Nine Palms Band of Mission Indians

5
CULTURAL RESOURCE SURVEY METHODS AND RESULTS

This chapter details the methods and results of the intensive pedestrian survey of the APE. Approximately 50 percent of the APE was accessible during the survey. The intensive survey was completed by Æ archaeologist Andrew DeLeon on February 13–16, 2023.

5.1 SURVEY METHODS

DeLeon began the survey on the far northern portion of the APE and proceeded southward wherever terrain was accessible on foot, particularly in the dry pond beds and far southeast and east portions of the APE (Figure 5-1). The survey was mainly conducted in 20-meter transects oriented north–south moving westward in the pond areas. Survey of the far southwest corner of the APE immediately adjacent to the current treatment station was completed in 10-meter transects oriented north–south moving westward. Smaller areas and corridors surrounding the treatment ponds were surveyed in 5-meter transects because much of these areas were narrow and difficult to access. On February 16, 2023, DeLeon was accompanied by base biologist Cindy Hopkins to photograph the APE at various locations to document its current condition.



Figure 5-1 Overview of dry pond bed from northern portion of APE, facing southeast.

DeLeon also visited previously recorded resources 15-002050 and 15-017353 mapped within the APE. The resources were surveyed intensively when possible, using 5–10-meter (16–33-foot)

transect intervals to confirm their location within the APE and identify new cultural features or constituents, if any.

5.2 SURVEY RESULTS

Nearly all the Project APE has been previously disturbed by construction activities associated with the existing wastewater treatment facility. The surrounding perimeters of the treatment ponds were mostly inaccessible due to dense patches of Mojave sea-blite throughout the APE (Figure 5-2). DeLeon was able to fully survey the far southwestern portion of the APE, adjacent to the treatment offices, and some of the areas in and around the treatment ponds (Figure 5-3). Ground visibility varied throughout the APE from 90 percent in the dry pond beds to 1 percent in the surrounding perimeter due to brush. When possible, DeLeon inspected exposed areas of soil within the APE that consisted of a light gray (10YR 7/2), dry, friable sand/loamy sand. No previously unidentified cultural resources were encountered within the APE during the survey.



Figure 5-2 Overview of Mojave sea-blite from northeast portion of the APE, facing west.

DeLeon was also able to re-identify 15-002050 and 15-017353 within the APE (Figure 5-4). The condition of the abandoned spur grade (15-002050) remained as described in the most recent update by Tetra Tech in 2021. Æ concurs with the previous evaluation that determined the resource ineligible for listing in the NRHP. DeLeon also inspected the unnamed access road (15-017353) and found the resource in the same condition as described in the original site record prepared by NAWS in 2013. See Appendix A for further details.

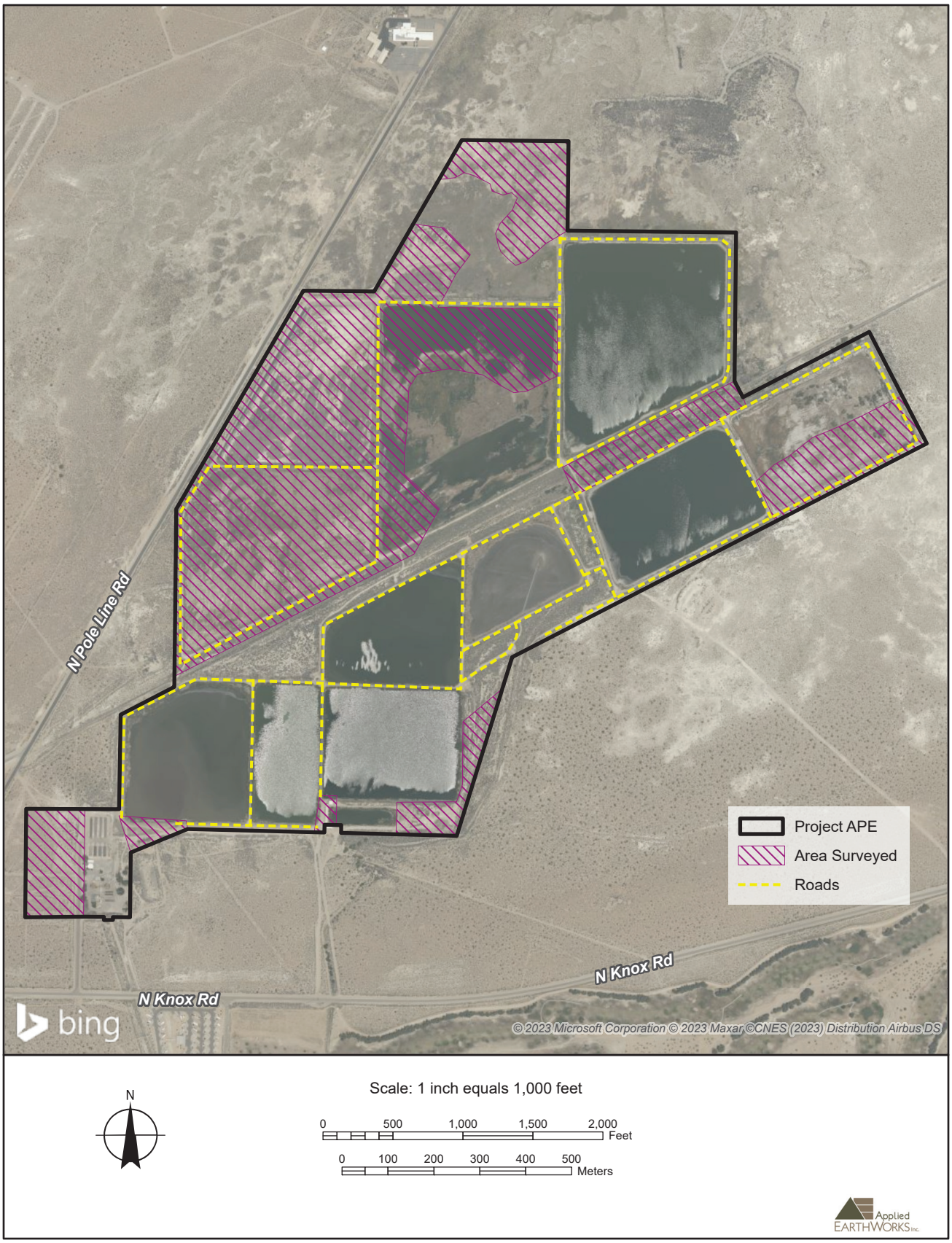


Figure 5-3 Survey coverage of the APE.



Figure 5-4 Overview of access road (15-017353), facing south.

6
MANAGEMENT RECOMMENDATIONS

Æ did not encounter any previously unrecorded cultural resources within the APE during the pedestrian survey. Both previously recorded resources within the APE, a railroad spur grade (15-002050) and paved access road (15-017353), were revisited during the survey. Both resources appear to be in the same condition as previously noted in the most recent updates. The rail grade was previously determined ineligible for listing on the NRHP. The paved road was never evaluated for NRHP eligibility; however, it was previously noted as no longer retaining integrity of workmanship or feeling. Æ concurs with the previous findings of both resources. Therefore, no further management of these resources is required.

Nearly all the Project APE has been previously disturbed by construction activities associated with the current wastewater treatment facility. While geological data for the APE was unavailable, the area within and surrounding China Lake is known to be archaeologically sensitive. Despite the highly disturbed nature of the APE, the archaeological sensitivity surrounding the APE and within China Lake presents a possibility of encountering intact archaeological deposits or features during construction. Therefore, Æ recommends archaeological monitoring during surface grubbing/clearing and initial grading within the APE.

It should be noted that as of the writing of this report, Æ has not received any responses from contacted Tribal representatives regarding the Project. However, any correspondence received after submittal of this report will be forwarded to the client for review by the lead compliance agencies.

Finally, if the APE is expanded to include areas not covered by this survey or other recent cultural resource studies, additional cultural resource studies may be required.

7
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APPENDIX B

Native American Communication

LIST OF NATIVE AMERICAN CONTACTS AND RECORD OF RESPONSES

Name	Date & Time of Calls	Responses
James Rambeau Chairperson Big Pine Paiute Tribe of the Owens Valley	February 17, 2023	Scoping letter sent via email. No response received.
Julio Quair, Chairperson Chumash Council of Bakersfield	February 20, 2023	Scoping letter sent via post. Follow up phone call made. Phone number has been disconnected.
Robert Robinson, Chairperson Kern Valley Indian Community	February 17, 2023	Scoping letter sent via email. No response received.
Delia Dominguez, Chairperson Kitanemuk & Yowlumne Tejon Indians	February 17, 2023	Scoping letter sent via email. No response received.
Octavio Escobedo, Chairperson Tejon Indian Tribe	February 17, 2023	Scoping letter sent via email. No response received.
Robert Gomez, Chairperson Tubatulabals of Kern Valley	February 20, 2023 March 17, 2023	Scoping letter sent via post. Letter returned via post.
Neil Peyron, Chairperson Tule River Indian Tribe	February 17, 2023	Scoping letter sent via email. No response received.
Darrell Mike, Chairperson Twenty-Nine Palms Band of Mission Indians	February 17, 2023	Scoping letter sent via email. No response received.

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

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Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[Vacant]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

December 2, 2022

Milo Honsberger
Applied Earthworks Inc.

Via Email to: mhonsberger@appliedearthworks.com

Re: 4439 Ridgecrest Water Treatment Plant Project, San Bernardino, Kern County

Dear Mr. Honsberger:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Kern, San Bernardino Counties
12/2/2022

Big Pine Paiute Tribe of the Owens Valley
James Rambeau, Chairperson
P. O. Box 700 — Paiute-Shoshone
Big Pine, CA, 93513
Phone: (760) 938 - 2003
Fax: (760) 938-2942
j.rambeau@bigpinepaiute.org

Big Pine Paiute Tribe of Owens Valley
Sally Manning, Environmental Director
P. O. Box 700 — Paiute-Shoshone
Big Pine, CA, 93513
Phone: (760) 938 - 2003
s.manning@bigpinepaiute.org

Big Pine Paiute Tribe of the Owens Valley
Danelle Gutierrez, Tribal Historic Preservation Officer
P.O. Box 700 — Paiute-Shoshone
Big Pine, CA, 93513
Phone: (760) 938 - 2003
Fax: (760) 938-2942
d.gutierrez@bigpinepaiute.org

Chumash Council of Bakersfield
Julio Quair, Chairperson
729 Texas Street — Chumash
Bakersfield, CA, 93307
Phone: (661) 322 - 0121
chumashtribe@sbcglobal.net

Kern Valley Indian Community
Brandy Kendricks,
30741 Foxridge Court — Kawaiisu
Tehachapi, CA, 93561 — Tubatulabal
Phone: (661) 821 - 1733 — Koso
krazykendricks@hotmail.com

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010 — Kawaiisu
Lake Isabella, CA, 93240 — Tubatulabal
Phone: (661) 340 - 0032 — Koso

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010 — Kawaiisu
Lake Isabella, CA, 93240 — Tubatulabal
Phone: (760) 378 - 2915 — Koso
bbutterbredt@gmail.com

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
115 Radio Street — Kitanemuk
Bakersfield, CA, 93305 — Southern Valley
Phone: (626) 339 - 6785 — Yokut
2deedominguez@gmail.com

Tejon Indian Tribe
Octavio Escobedo, Chairperson
P.O. Box 640 — Kitanemuk
Arvin, CA, 93203
Phone: (661) 834 - 8566
oescobedo@tejonindiantribe-nsn.gov

Tejon Indian Tribe
Colin Rambo,
P.O. Box 640 — Kitanemuk
Arvin, CA, 93203
Phone: (661) 834 - 8566
colin.rambo@tejonindiantribe-nsn.gov

Tubatulabals of Kern Valley
Robert Gomez, Chairperson
P.O. Box 226 — Tubatulabal
Lake Isabella, CA, 93240
Phone: (760) 379 - 4590
Fax: (760) 379-4592

Tule River Indian Tribe
Kerri Vera, Environmental Department
P. O. Box 589 — Yokut
Porterville, CA, 93258
Phone: (559) 783 - 8892
Fax: (559) 783-8932
kerri.vera@tulerivertribe-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 4439 Ridgecrest Water Treatment Plant Project, Kern, San Bernardino Counties.

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 Yokut
Porterville, CA, 93258
Phone: (559) 781 - 4271
Fax: (559) 781-4610
neil.peyron@tulerivertribe-nsn.gov

Tule River Indian Tribe
Joey Garfield, Tribal Archaeologist
P. O. Box 589 Yokut
Porterville, CA, 93258
Phone: (559) 783 - 8892
Fax: (559) 783-8932
joey.garfield@tulerivertribe-nsn.gov

Twenty-Nine Palms Band of Mission Indians
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place Chemehuevi
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov

Twenty-Nine Palms Band of Mission Indians
Darrell Mike, Chairperson
46-200 Harrison Place Chemehuevi
Coachella, CA, 92236
Phone: (760) 863 - 2444
Fax: (760) 863-2449
29chairman@29palmsbomi-nsn.gov

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Applied EARTHWORKS Inc.

3550 E. Florida Ave., Suite H
Hemet, CA 92544-4937
O: (951) 766-2000 | F: (951) 766-0020
www.appliedearthworks.com

February 17, 2023

Delia Dominguez
Chairperson
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA, 93305

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Dominguez:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

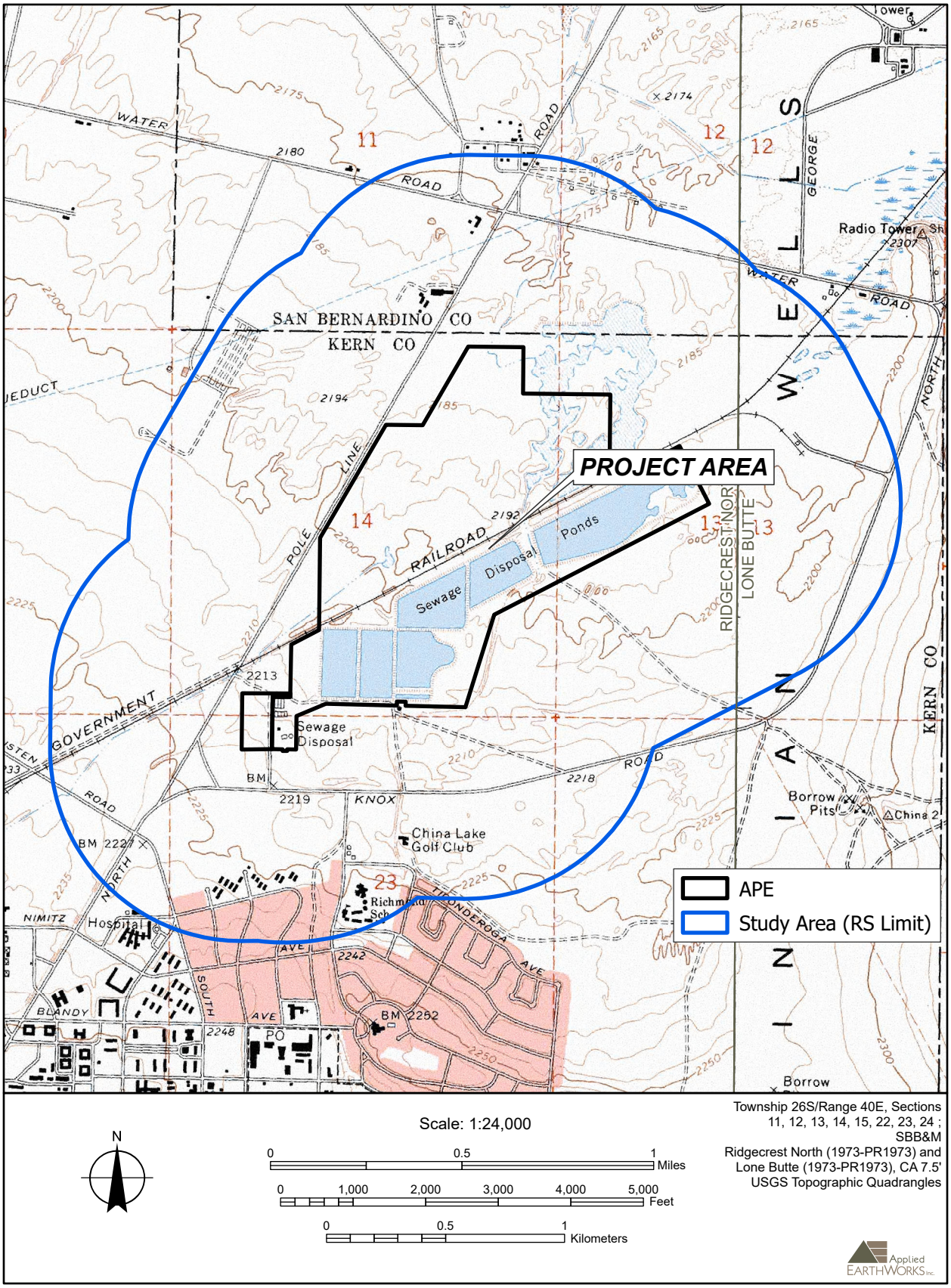
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Please be aware that your comments and concerns are very important to us, as well as to the successful completion of this Project. I look forward to hearing from you in the near future. Thank you, in advance, for taking the time to review this request.

Respectfully yours,

Andrew DeLeon, MA, RPA
Associate Archaeologist
Applied EarthWorks, Inc.



Project location location map for the *Ridgecrest WWTP Project - AE4439.*

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February 17, 2023

Octavio Escobedo
Chairperson
Tejon Indian Tribe
P.O. Box 640
Arvin, CA, 93203

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Escobedo:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

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February 17, 2023

Robert Gomez
Chairperson
Tubatulabals of Kern Valley
P.O. Box 226
Lake Isabella, CA, 93240

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Gomez:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

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February 17, 2023

Darrell Mike
Chairperson
Twenty-Nine Palms Band of Mission Indians
46-200 Harrison Place
Coachella, CA, 9223

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Mike:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

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Applied EarthWorks, Inc.

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Hemet, CA 92544-4937
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February 17, 2023

Neil Peyron
Chairperson
Tule River Indian Tribe
P.O. Box 589
Porterville, CA, 93258

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Peyron:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

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Respectfully yours,

Andrew DeLeon, MA, RPA
Associate Archaeologist
Applied EarthWorks, Inc.

Applied EARTHWORKS Inc.

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Hemet, CA 92544-4937
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February 17, 2023

Julio Quair
Chairperson
Chumash Council of Bakersfield
729 Texas Street
Bakersfield, CA, 93307

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Quair:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

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February 17, 2023

James Rambeau
Chairperson
Big Pine Paiute Tribe of the Owens Valley
P.O. Box 700
Big Pine, CA, 93513

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Rambeau:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

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February 17, 2023

Robert Robinson
Chairperson
Kern Valley Indian Community
P.O. Box 1010
Lake Isabella, CA, 93240

Re: Cultural Resource Assessment for the Ridgecrest Wastewater Treatment Plant Project, City of Ridgecrest, Kern County, California

Dear Chairperson Robinson:

On behalf of Provost & Pritchard Consulting Group, Applied EarthWorks, Inc. (*Æ*) is conducting a cultural resource study for the Ridgecrest Wastewater Treatment Plant Project in the City of Ridgecrest (City), Kern County, California (Project). The City proposes to construct approximately 360 acres of new wastewater treatment facilities, of which 240 consist of holding ponds, at Naval Air Weapons Station, China Lake (NAWS). The Project is subject to the California Environmental Quality Act (CEQA) with the City as the lead CEQA agency. The Project is also subject to Section 106 of the National Historic Preservation Act (NHPA) with NAWS as the lead federal agency. The Project is located in Township 26 South, Range 40 East, as indicated on the attached map. Specifically, the Area of Potential Effect (APE) is located immediately east of Pole Line Road and north of Knox Road, within NAWS. Ground disturbance is expected as a result of Project construction.

Æ conducted a literature and records search review which indicated 16 cultural resources and 10 built environment resources within a half-mile radius of the APE. Two of these resources, one historic road and one historic rail grade, are documented within the APE. *Æ* was contracted to perform an archaeological survey of the APE which was completed on February 16, 2023. The APE consists mainly of active and inactive wastewater ponds and smaller surrounding areas with dense weed cover. *Æ* was able to re-identify the two previously documented historic resources within the APE. No other historic-era or prehistoric cultural resources were identified during the survey.

As part of the cultural resource assessment of the APE, *Æ* requested a search of the *Sacred Lands File* by the Native American Heritage Commission (NAHC) on October 17, 2022. The NAHC responded on December 2, 2022 noting that *Sacred Lands File* search was completed with negative results. Should your records show that cultural properties exist within or near the Project area shown on the enclosed map, or if you have any concerns regarding Native American issues related to the overall Project, please contact me at (951) 766-2000 or via letter expressing your concerns. You may also e-mail me at adeleon@appliedearthworks.com. If I do not hear from you within the next two weeks, I will contact you with a follow-up phone call or email.

Please be aware that your comments and concerns are very important to us, as well as to the successful completion of this Project. I look forward to hearing from you in the near future. Thank you, in advance, for taking the time to review this request.

Respectfully yours,

Andrew DeLeon, MA, RPA
Associate Archaeologist
Applied EarthWorks, Inc.