Initial Study / Mitigated Negative Declaration

Huron Reclamation Expansion Project

Prepared for:

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TABLE OF CONTENTS

PROJECT INFORMATION **4**

Project title 4

Lead agency name and address 4

Contact person and phone number 4

Project location 4

Project sponsor's name/address 7

General plan designation 7

Zoning 7

Project Description 7

Setting/Surrounding Land Uses 10

Tribal Consultation 11

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED **12**

DETERMINATION **12**

ENVIRONMENTAL CHECKLIST **14**

I. AESTHETICS 14

II. AGRICULTURE AND FOREST RESOURCES 17

III. AIR QUALITY 20

IV. BIOLOGICAL RESOURCES 28

V. CULTURAL RESOURCES 54

VI. ENERGY 60

VII. GEOLOGY AND SOILS 65

VIII. GREENHOUSE GAS EMISSIONS 70

IX. HAZARDS AND HAZARDOUS MATERIALS....72

XII. MINERAL RESOURCES....87

XIII. NOISE....89

XIV. POPULATION AND HOUSING....93

XV. PUBLIC SERVICES....95

XVI. RECREATION....97

XVII. TRANSPORTATION/....99

TRAFFIC....99

XVIII. TRIBAL CULTURAL RESOURCES....101

XIX. UTILITIES AND SERVICE SYSTEMS....103

XX. WILDFIRE....106

XXI. MANDATORY FINDINGS OF SIGNIFICANCE....108

LIST OF PREPARERS....110

APPENDICES

Appendix A – CalEEMod Output Files (Air Emissions)

Appendix B – Biological Evaluation Report

Appendix C – San Joaquin Kit Fox Habitat Assessment Report

Appendix D – Class III Inventory/Phase I Survey Cultural Report

PROJECT INFORMATION

This document is the Initial Study for the potential environmental effects of the City of Huron's (City) Reclamation Expansion Project (Project). The City of Huron will act as the Lead Agency for this project pursuant to the California Environmental Quality Act (CEQA) and the CEQA Guidelines. Copies of all materials referenced in this report are available for review in the project file during regular business hours at 36311 S. Lassen Avenue, Huron, CA 93234.

Project title

Huron Reclamation Expansion Project

Lead agency name and address

City of Huron
36311 S. Lassen Avenue
Huron, CA 93234

Contact person and phone number

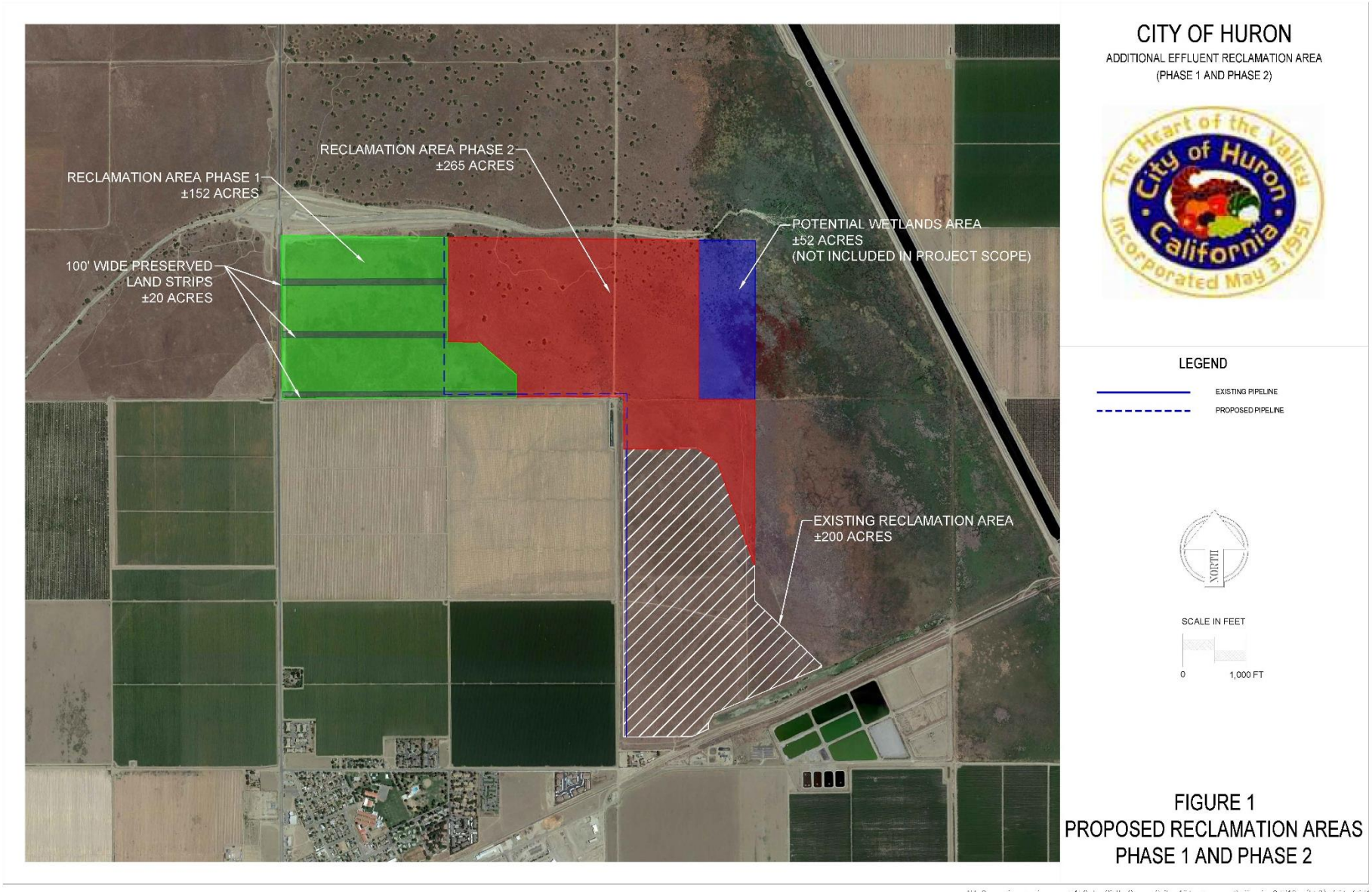
Juanita Veliz, City Clerk: 559.945.2241, Option 3
Alfonso Manrique, PE: 559.473.1371

Project location

The City of Huron (City) lies in the San Joaquin Valley's west-side region, in the south west portion of Fresno County. The City is nine miles east of Interstate 5 (I-5) and three miles south of State Route 198 (SR 198). The existing Wastewater Treatment Plant (WWTP) is in the easternmost portion of the City, along Palmer Avenue, while the land that would be applied with treated effluent is just north of the existing WWTP and 200-acre reclamation area, in Fresno County. The Project site is located approximately ½ mile north of the Huron city limits, within a block of land owned by the Bureau of Reclamation. The entire site is located on the *Huron* U.S. Geological Survey (USGS) 7.5 minute quadrangle within Section 1 of Township 20 South, Range 17 East; and Sections 35 and 36 within Township 19 South, Range 17 East (Mt. Diablo Base and Meridian). See Figure 1 – Location Map.

Figure 1 – Location Map

Figure 2 – Site Map



Project sponsor's name/address

City of Huron
36311 S. Lassen Avenue
Huron, CA 93234

General plan designation

Public Facilities (City of Huron) and Agriculture (Fresno County)

Zoning

PF- Public Facilities (City of Huron) and AE-20– Agriculture Exclusive (Fresno County)

Project Description

Background

The City of Huron's Waste Discharge Requirements for their Wastewater Treatment Plant (WWTP) requires the City to identify potential uses of recycled water within a 1-mile radius of the WWTP and to determine the feasibility of using treated wastewater effluent for any of those potential uses. The City has determined that recycling treated effluent on newly developed agricultural land adjacent to the WWTP is the most beneficial use for their treated effluent. The proposed reclamation areas are located on land generally north of the City's WWTP.

The City previously entered into an agreement with the Bureau of Reclamation to use land north of the City's WWTP to grow non-human consumption crops, such as alfalfa, with treated effluent. The City leased approximately 200 acres of land to dispose approximately 1,011 acre-feet/year of recycled water for agricultural reclamation.

The City is proposing to expand the reclamation area and would enter into a long-term agreement (30 year period) with the Bureau of Reclamation to obtain use of an additional 417 acres of land to grow non-human consumption crops with the treated effluent (proposed Project). The Project is intended to be conducted in phases, with Phase 1 consisting of approximately 152 acres on the western portion of the proposed Project site and, if needed in the future, Phase 2 consisting of approximately 265 acres immediately east of Phase 1 and north of the existing reclamation area. Refer to the Project description herein for additional details.

The City's WWTP produces undisinfected secondary treated water. Section 60304 of the California Code of Regulations Title 22 describes the approved uses of undisinfected secondary treated recycled water. Among those approved uses is fodder and fiber crops (such as alfalfa, which is the crop the City is proposing on the reclamation area).

Existing WWTP

Huron's existing WWTP receives an average monthly flow of 0.44 million gallons per day (MGD) based on records from 2013 to 2015. The current design flow maximum is 1.0 MGD and the WWTP produces undisinfected secondary effluent which is discharged to eleven (11) percolation/evaporation basins.

The current process is not designed to provide nitrogen removal. Total nitrogen concentrations in the treated effluent pose a risk to the underlying groundwater. Some of the nitrogen in the treated effluent will be filtered and removed by the soils as effluent percolates. However, it is likely that the removal efficiencies in the soils are not sufficient to reduce the total nitrogen concentration to less than 10 milligrams per liter. The salinity of the WWTP effluent is considered to be acceptable for the irrigation of most agricultural crops.

The City's current disposal method does not provide any beneficial reuse of the treated effluent. Furthermore, nitrogen concentrations in the effluent could potentially reach and pollute the underlying groundwater.

Project Description

The Project is expanding on a previously approved 200-acre effluent disposal project that is located immediately north of the existing WWTP and immediately south and southeast of the proposed expansion areas proposed by the Project. At full buildout, approximately 417 acres of land would be converted to agriculture (non-human consumption crops such as alfalfa), which would require improvements on the land such as installing an irrigation system and grading. However, Phase 1 only includes 152 acres, and Phase 2 (265 acres) will only be constructed if and when the City determines there is adequate demand. An additional 20 acres of land would be used to preserve existing grassland habitat (see discussion in *Biological Considerations* below).

In order to convey treated wastewater to the reclamation field, improvements on existing land will be required, in addition to new facilities and a conveyance system. Additional facilities and improvement include grading, diversion structures, alfalfa valves, and new pipelines to convey treated effluent to the reclamation field. The pipeline routing and design characteristics are discussed further in the following paragraphs.

Pipeline Alignments

The proposed recycled water project will include approximately 6,280 linear feet of 21-inch diameter recycled water pipelines. The proposed pipeline will be connected to the 21-inch diameter recycled water that lies on the 200-acre reclamation area that is currently being constructed (August 2021). All delivery and irrigation pipelines will be installed 3-feet underground.

Biological Considerations

The effluent reclamation field has been designed to include three (3) 100-foot wide strips of undisturbed land within the 152-acre area for Phase 1. The strips will occur in an east-west pattern within the Phase 1 area and will occupy a total of approximately 20 total acres. The purpose of the strips of land is to provide grassland habitat that would serve as denning/roosting/nesting habitat for burrowing owls, badgers, San Joaquin kit fox and short-nosed kangaroo rats. This will provide connectivity between natural lands to the west and east and will also serve as foraging habitat for these species.

Miscellaneous Improvements

Other miscellaneous improvements include the construction of perimeter fencing, access roads and signage. The access road will consist of a 16-feet wide, 4-inch thick aggregate base roadway around the perimeter of the reclamation field. A chain link fence, 4 feet tall, will also be placed along the perimeter to enclose the reclamation field Recycled water signs will be placed every 100-feet along the perimeter of the fence. The signs will be an aluminum plate that is 10 inches wide and 14 inches long. The signs will read “Recycled Water Do Not Drink” in both English and Spanish.

Process Description and Disposition of Effluent

Effluent will be applied to the reclamation area during periods when alfalfa is being grown/harvested. When effluent is not needed for the crops or otherwise is not discharged to the reclamation area, it will continue to be stored in the lined storage ponds.

The application of recycled water to forage crops is an efficient way to reuse waste and conserve valuable surface and groundwater resources. However, recycle water can contain high levels of nitrogen that can be detrimental to groundwater if it is not carefully applied.

Setting/Surrounding Land Uses

The proposed Project site is located in the southern San Joaquin Valley of California. The valley is a large, nearly flat alluvial plain bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California coast ranges to the west, and the Sacramento-San Joaquin Delta to the north.

Soils in the vicinity of the WWTP are alluvium deposited by Los Gatos Creek, predominately sandy loams and clay loams. The most prevalent soils series in the area are Westhaven loam, West haven clay loam, Cerini sandy loam, and Excelsior sandy loam, all of which are sandy with relatively high permeability.

Like most of California, the southern San Joaquin Valley experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation in the vicinity of the project sites is about 8 inches, about 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The City of Huron is located in the Westside subbasin within the San Joaquin Valley groundwater basin. The Westside subbasin consists mainly of the lands in Westlands Water District.

The principal drainage of the Project vicinity is Los Gatos Creek (Arroyo Pasajero), the historic channel of which travels in an easterly direction approximately 0.7 mile north of the project site. Los Gatos Creek initiates in the Diablo Range, some 30 miles west of the site, at an elevation of approximately 3,000 feet. It originally terminated in a delta in the trough of the San Joaquin Valley, and together with the Kings River delta, formed a sill that marked the northern boundary of the historic Tulare Lake in very wet years. With the construction of the local segment of the California Aqueduct in 1967, Los Gatos Creek was intercepted, and floodwater spilled through agricultural land along the aqueduct's western embankment. The Bureau of Reclamation began buying the affected agricultural properties, and in the mid-2000s constructed the Arroyo Pasajero Westside Detention Basin, which constrains the Los Gatos Creek floodwaters to an approximate 3,800 acre area extending along the west side of the aqueduct from Highway 198 to Gale Avenue. At Gale Avenue, a set of gates allow overflow to be pumped into the aqueduct, as needed. The reclamation areas are located within a 100-year flood zone.

Other land uses in the project vicinity include industrial facilities, rural residences, and municipal Huron. Approximately 0.75 miles west of the site is Chestnut Park while 0.85 miles west is Chestnut High School.

Other Required Approvals

The proposed Project would include, but not be limited to, the following regulatory requirements:

- The adoption of a Mitigated Negative Declaration by the City of Huron.
- Regional Water Quality Control Board approval.
- Report of Waste Discharge compliance.
- Approval/permit from the Union Pacific Railroad Company to install a pipeline under an existing railway.
- San Joaquin Valley Air Pollution Control District – permit to construct/operate.

Tribal Consultation

The City of Huron has not received any project-specific requests from any Tribes in the geographic area with which it is traditionally and culturally affiliated with or otherwise to be notified about projects in the City of Huron.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture Resources and Forest Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☐ Geology / Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities / Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

DETERMINATION

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.

Travis Crawford, AICP (Environmental Consultant) on behalf of

City of Huron

Date: 3/1/22

ENVIRONMENTAL CHECKLIST

I. AESTHETICS

Would the project:

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

ENVIRONMENTAL SETTING

The proposed Project site is located on the San Joaquin Valley floor in the eastern portion of the City of Huron, California. The proposed Project site is bounded by active row crops to the north, south, east and west. Also to the south is a railroad crossing and the existing WWTP. Chestnut Park is approximately 0.75 miles to the west and Chestnut High School is approximately 0.85 miles to the west.

There are no scenic resources or scenic vistas in the area. State Routes (SR) in the proposed Project vicinity include Interstate 5 (I-5).

California Scenic Highway Program

The California Department of Transportation (Caltrans) administers the California Scenic Highway Program, which is the only official program in Fresno County designed to protect and enhance scenic/visual resources. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263. Other regulations that assist in minimizing impacts from urban land uses, to some extent, include County and City zoning and development standards and regulations.

RESPONSES

a. Have a substantial adverse effect on a scenic vista?

Less than Significant Impact. The proposed Project involves converting approximately 417 acres of undeveloped land into agricultural land, or effluent reclamation fields, along with new facilities and a conveyance system within the existing WWTF.

The City of Huron and Fresno County General Plans do not identify any scenic vistas within the Project area; however, the foothills to the west could be considered scenic. A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area.

The proposed Project includes converting undeveloped land into alfalfa crops. Alfalfa and other row crops, such as tomatoes and cotton, are commonly found in the western portion of Fresno County and are commonplace in and around the City of Huron. Proposed Project construction also includes grading activities, however, they will not be seen by the general population as the existing effluent reclamation field and other agricultural land separates the expansion site from the developed portions of the City.

Construction activities will occur over a 12-month period and will be visible from the adjacent roadsides; however, the construction activities will be temporary in nature and will not affect a scenic vista. The impact will be ***less than significant***.

Mitigation Measures: None are required.

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

Less than Significant Impact. There are no state designated scenic highways within the immediate proximity to the Project site. California Department of Transportation Scenic Highway Mapping System identifies SR 198 east of Interstate 5 as an Eligible State Scenic Highway. This is the closest highway,

located approximately ten miles northwest of the Project site; however, the Project site is both physically and visually separated from SR 198 by intervening land uses. In addition, no scenic highways or roadways are listed within the Project area in the City of Huron's General Plan or Fresno County's General Plan. The proposed Project would not damage any trees, rock outcroppings or historic buildings within a State scenic highway corridor. Any impacts would be considered ***less than significant***.

Mitigation Measures: None are required.

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

Less than Significant Impact. The proposed Project includes expanding the existing WWTP and converting undisturbed land to the north into active agricultural land. The site will also be surrounded by a perimeter fence and a 16-foot wide perimeter roadway. The proposed Project site will be similar in visual character to the existing landscape, as public facilities and agriculture are found throughout both rural and urban parts of the Central Valley. As such, the proposed Project will not substantially degrade the existing visual character or quality of the area or its surroundings. As such, the proposed Project will not substantially degrade the existing visual character or quality of the area or its surroundings.

The impact will be ***less than significant***.

Mitigation Measures: None are required.

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

Less Than Significant Impact. Currently the sources of light in the Project area are from street lights, the vehicles traveling along Palmer Avenue, and security lights at the existing WWTP. The proposed Project may include a minimal amount of additional security lighting; however, any additional lighting would not be expected to appreciably change any existing glare or lighting conditions because the visibility of the site from residential areas and public spaces and roadways is limited. Accordingly, the proposed Project would not create substantial new sources of light or glare. Potential impacts are ***less than significant***.

Mitigation Measures: None are required.

II. AGRICULTURE AND FOREST RESOURCES

Would the project:

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

ENVIRONMENTAL SETTING

The proposed Project site is located in an area of the City considered urban, built up land by the State Farmland Mapping and Monitoring Program (FMMP) and an area in Fresno County considered

Farmland of Local Importance by the FMMP. No *Prime Farmland, Unique Farmland, or Farmland of Statewide Importance* or land under the Williamson Act contracts occurs in the proposed Project area.

RESPONSES

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

No Impact. The Project site is located in an area of the City considered urban, built up land by the FMMP and an area of Fresno County considered Farmland of Local Importance. No *Prime Farmland, Unique Farmland, or Farmland of Statewide Importance* or land under the Williamson Act contracts occurs in the proposed Project area. Therefore, no land conversion from Farmland would occur for the Project. Surrounding land uses include agricultural, vacant land, public facilities, and rural residences; as such, the proposed Project does not have the potential to result in the conversion of Farmland to non-agricultural uses or forestland uses to non-forestland. There is ***no impact***.

Mitigation Measures: None are required.

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

No Impact. The Project site is not zoned for agriculture nor is the site covered by a Williamson Act contract; no impacts would occur. The Project is not zoned for forestland and does not propose any zone changes related to forest or timberland. There is ***no impact***.

Mitigation Measures: None are required.

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))? OR

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

No Impact. The proposed Project is not zoned for forestland and does not propose any zone changes related to forest or timberland. No conversion of forest land, as defined under Public Resource Code or General Code would occur as a result of the Project. There is ***no impact***.

Mitigation Measures: None are required.

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. No land conversion from Farmland would occur as a result of the proposed Project. Surrounding land uses include rural residential, vacant land, and agricultural uses; as such, the proposed Project does not have the potential to result in the conversion of Farmland to non-agricultural uses or forestland uses to non-forestland. There is ***no impact***.

Mitigation Measures: None are required.

III. AIR QUALITY

Would the project:

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

ENVIRONMENTAL SETTING

The climate of the San Joaquin Valley is characterized by long, hot summers and stagnant, foggy, winters. Precipitation is low and temperature inversions are common. These characteristics are conducive to the formation and retention of air pollutants and are in part influenced by the surrounding mountains which intercept precipitation and act as a barrier to the passage of cold air and air pollutants.

The proposed Project lies within the San Joaquin Valley Air Basin, which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD or Air District). National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Air quality plans or attainment plans are used to bring the applicable air basin into attainment with all state and federal ambient air quality standards designed to protect the health and safety of residents within that air basin. Areas are classified under the Federal Clean Air Act as either

"attainment", "non-attainment", or "extreme non-attainment" areas for each criteria pollutant based on whether the NAAQS have been achieved or not. Attainment relative to the State standards is determined by the California Air Resources Board (CARB). The San Joaquin Valley is designated as a State and Federal extreme non-attainment area for O_3, a State and Federal non-attainment area for $PM_{2.5}$, a State non-attainment area for PM_{10}, and Federal and State attainment area for CO, SO_2, NO_2, and Pb.

Clean Air Act

The federal Clean Air Act of 1970 (as amended in 1990) required the U.S. Environmental Protection Agency (EPA) to develop standards for pollutants considered harmful to public health or the environment. Two types of National Ambient Air Quality Standards (NAAQS) were established. Primary standards protect public health, while secondary standards protect public welfare, by including protection against decreased visibility, and damage to animals, crops, landscaping and vegetation, or buildings. NAAQS have been established for six "criteria" pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb).

California Air Resources Board

The California Air Resources Board (CARB) is the state agency responsible for implementing the federal and state Clean Air Acts. CARB has established California Ambient Air Quality Standards (CAAQS), which include all criteria pollutants established by the NAAQS, but with additional regulations for Visibility Reducing Particles, sulfates, hydrogen Sulfide (H_2S), and vinyl chloride.

The proposed Project is located within the San Joaquin Valley Air Basin, which includes San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and parts of Kern counties and is managed by the SJVAPCD.

Air basins are classified as attainment, nonattainment, or unclassified. Attainment is achieved when monitored ambient air quality data is in compliance with the standards for a specified pollutant. Non-compliance with an established standard will result in a nonattainment designation and an unclassified designation indicates insufficient data is available to determine compliance for that pollutant.

Standards and attainment status for listed pollutants in the Air District can be found in Table 1. Note that both state and federal standards are presented.

Table 1
Standards and Attainment Status for Listed Pollutants in the Air District

	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.07 ppm (8-hr avg) 0.09 ppm (1-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg)	0.30 ppm (annual avg) 0.18 ppm (1-hr avg)
Sulfur Dioxide	0.03 ppm (annual avg) 0.14 ppm (24-hr avg) 0.5 ppm (3-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1hr avg)
Lead	1.5 µg/m3 (calendar quarter) 0.15 µg/m3 (rolling 3-month avg)	1.5 µg/m3 (30-day avg)
Particulate Matter (PM10)	150 µg/m3 (24-hr avg)	20 µg/m3 (annual avg) 50 µg/m3 (24-hr avg)
Particulate Matter (PM2.5)	15 µg/m3 (annual avg)	35 µg/m3 (24-hr avg) 12 µg/m3 (annual avg)

µg/m3 = micrograms per cubic meter

Additional State regulations include:

CARB Portable Equipment Registration Program – This program was designed to allow owners and operators of portable engines and other common construction or farming equipment to register their equipment under a statewide program so they may operate it statewide without the need to obtain a permit from the local air district.

U.S. EPA/CARB Off-Road Mobile Sources Emission Reduction Program – The California Clean Air Act (CCAA) requires CARB to achieve a maximum degree of emissions reductions from off-road mobile sources to attain State Ambient Air Quality Standards (SAAQS); off- road mobile sources include most construction equipment. Tier 1 standards for large compression-ignition engines used in off-road mobile sources went into effect in California in 1996. These standards, along with ongoing rulemaking, address emissions of nitrogen oxides (NOX) and toxic particulate matter from diesel engines. CARB is currently developing a control measure to reduce diesel PM and NOX emissions from existing off-road diesel equipment throughout the state.

California Global Warming Solutions Act – Established in 2006, Assembly Bill 32 (AB 32) requires that California's GHG emissions be reduced to 1990 levels by the year 2020. This will be implemented through a statewide cap on GHG emissions, which will be phased in beginning in 2012. AB 32 requires CARB to develop regulations and a mandatory reporting system to monitor global warming emissions levels.

San Joaquin Valley Air Pollution Control District

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is the local agency charged with preparing, adopting, and implementing mobile, stationary, and area air emission control measures and standards. The SJVAPCD has rules and regulations that may apply to the Project, including, but not limited to:

Rules 4101 (Visible Emissions) and 4102 (Nuisance) – These rules apply to any source of air contaminants and prohibits the visible emissions of air contaminants or any activity which creates a public nuisance.

Rule 4702 (Internal Combustion Engine) – This rule applies to any internal combustion engine rated at 25 brake horsepower or greater.

Regulation VIII (Fugitive PM_{10} Prohibitions) – This regulation, a series of eight regulations, is designed to reduce PM_{10} emissions by reducing fugitive dust. Regulation VIII requires implementation of control measures to ensure that visible dust emissions are substantially reduced. The control measures are summarized in Table 2.

Table 2
San Joaquin Valley Air Pollution Control District
Regulation VIII Control Measures for Construction Related Emissions of PM_{10}

The following are required to be implemented at all construction sites:
All disturbed areas, including storage piles, which are not actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizers/suppressants, covered with a tarp or other similar cover, or vegetative
All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions during construction using water or chemical stabilizer
All land clearing, grubbing, scraping, excavation, land leveling, grading cut and fill, and demolition activities during construction shall be effectively controlled of fugitive dust emissions utilizing application of water or pre-soaking.
When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from top of container shall be maintained.
All operations shall limit, or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is
Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site at the end of each workday.
Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

RESPONSES

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

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

c. Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The proposed Project lies within the San Joaquin Valley Air Basin (SJVAB). At the Federal level, the SJVAB is designated as extreme nonattainment for the 8-hour ozone standard, attainment for PM_{10} and CO, and nonattainment fort $PM_{2.5}$. At the State level, the SJVAB is designated as nonattainment for the 8-hour ozone, PM_{10}, and $PM_{2.5}$ standards. Although the Federal 1-hour ozone standard was revoked in 2005, areas must still attain this standard, and the SJVAPCD recently requested an EPA finding that the SJVAB has attained the standard based on 2011-2013 data[1]. To meet Federal Clean Air Act (CAA) requirements, the SJVAPCD has multiple air quality attainment plan (AQAP) documents, including:

- Extreme Ozone Attainment Demonstration Plan (EOADP) for attainment of the 1-hour ozone standard (2004);
- 2007 Ozone Plan for attainment of the 8-hour ozone standard;
- 2007 PM_{10} Maintenance Plan and Request for Redesignation; and
- 2008 $PM_{2.5}$ Plan.

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

The annual significance thresholds to be used for the Project for construction and operational emissions are as follows[2]:

- 10 tons per year ROG;

[1] San Joaquin Valley Air Pollution Control District. Guide to Assessing and Mitigating Air Quality Impacts. March 19, 2015. Page 28. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed July 2020.

[2] San Joaquin Valley Air Control District – Air Quality Threshold of Significance – Criteria Pollutants. http://www.valleyair.org/transportation/0714-GAMAQI-Criteria-Pollutant-Thresholds-of-Significance.pdf. Accessed July 2020.

- 10 tons per year NOx;
- 15 tons per year PM_{10}; and
- 15 tons per year $PM_{2.5}$.

Total Project Emissions

The project will result in construction emissions resulting from converting 417 acres of vacant land to agricultural land in two phases and 6,280 linear feet of pipeline installation, and operational emissions resulting from vehicle trips. The estimated annual construction emissions are provided below. The California Emissions Estimator (CalEEMod), Version 2016.3.2, was used to estimate emissions resulting from creating am effluent reclamation field while the Sacramento Metropolitan Air Quality Management Districts Road Construction Emissions Model, Version 9.0.0 was used to estimate emissions generated by the pipeline installation. A conservative approach was taken by modeling the effluent reclamation field conversion in one phase. Modeling results are provided in Table 3 and the CalEEMod output files are provided in Appendix A.

Table 3 - Proposed Project Construction and Operation Emissions

	VOC (ROG) (tons/year)	NO_x (tons/year)	PM_{10} (tons/year)	$PM_{2.5}$ (tons/year
Effluent Reclamation Field Conversion Emissions	0.52	5.29	2.65	1.55
Pipeline Installation Emissions	0.28	2.95	0.42	0.18
Annual Operational Emissions	1.55	0.40	0.00	0.00
Total Project Emissions	**2.35**	**8.64**	**6.14**	**1.73**
Annual Threshold of Significance	10	10	15	15
Significant?	**No**	**No**	**No**	**No**

Source: CalEEMod results (Appendix A). Crawford & Bowen Planning (2020)

As demonstrated in Table 3, estimated construction emissions would not exceed the SJVAPCD's significance thresholds for ROG, NOx, PM_{10}, and $PM_{2.5}$. As a result, the Project uses would not conflict with emissions inventories contained in regional air quality attainment plans and would not result in a significant contribution to the region's air quality non-attainment status[3]. Likewise, the Project would not result in a cumulatively considerable net increase of any criteria pollutant within the SJVAPCD jurisdiction. Finally, the Project would also not expose sensitive receptors to substantial pollutant concentrations. Due to its location north of the City of Huron, the Project site is not near any sensitive receptors, the nearest residence being over 4,000 feet to the north. It will not cumulatively increase any criteria pollutant and will not result in substantial pollutant concentrations.

[3] San Joaquin Valley Air Pollution Control District. Guide to Assessing and Mitigating Air Quality Impacts. March 19, 2015. Page 65. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed July 2020.

Any impacts to air resources would be considered ***less than significant***.

Mitigation Measures: None are required.

d. Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Less than Significant Impact. If the proposed Project were to result in a sensitive odor receptor being located in the vicinity of an undesirable odor generator, the impact would be considered significant. The SJVAPCD regulates odor sources through its nuisance rule, Rule 4102, but has no quantitative standards for odors. The SJVAPCD presents a list of project screening trigger levels for potential odor sources in its GAMAQI, which is displayed in Table 4. If the project were to result in sensitive receptors being located closer to an odor generator in the list in Table 4 than the recommended distances, a more detailed analysis including a review of SJVAPCD odor complaint records is recommended.

Table 4
Screening Levels for Potential Odor Sources[4]

Odor Generator	Distance (Miles)
Wastewater Treatment Facilities	2
Sanitary Landfill	1
Transfer Station	1
Composting Facility	1
Petroleum Refinery	2
Asphalt Batch Plant	1
Chemical Manufacturing	1
Fiberglass Manufacturing	1
Painting/Coating Operations (e.g., auto body shop)	1
Food Processing Facility	1
Feed Lot/Dairy	1
Rendering Plant	1

Significant odor problems are defined as:

- More than one confirmed complaint per year averaged over a three year period; or
- Three unconfirmed complaints per year averaged over a three-year period.

[4] San Joaquin Valley Air Pollution Control District. March 19, 2015. Guide for Assessing and Mitigating Air Quality Impacts. http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Page 103. Accessed July 2020.

As identified in (d.) above, there are sensitive receptors located within two miles of the Project site. However, these receptors are already located within the vicinity of the existing WWTP and the proposed Project does not substantially bring WWTP operations closer to any existing receptors. The proposed Project includes the expansion of the existing WWTP by adding approximately 417 acres of land for treated water disposal and supporting infrastructure within the existing WWTP. As the expansion will take place north of the existing facility, outside of the City of Huron limits, and generally away from any municipal residential developments, objectionable odors are not expected to be a significant concern during either proposed Project construction or operations. Prevailing winds are generally from the northwest for almost every month except December where it is from the east / southeast[5], thereby carrying potential odors away from the City and sensitive receptors. The existing WWTP and the proposed reclamation areas are therefore rightly sited in relation to sensitive receptors. As described above, for projects such as dairies, WWTPs, etc., odor impacts are regulated by the Air District through its nuisance rule, Rule 4102, but has no quantitative standards for odor.

In addition, the City's WDR (paragraph B. 8), includes the provision: "Objectionable odors shall not be perceivable beyond the limits of the WWTF property at an intensity that creates or threatens to create nuisance conditions." The WDR Monitoring and Reporting Program includes several provisions intended to ensure compliance with the WDR. Among these is weekly monitoring of odors.

As such, any impacts would be considered ***less than significant***.

Mitigation Measures: None are required.

[5] http://www.wrcc.dri.edu/htmlfiles/westwinddir.html#CALIFORNIA

IV. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c. Have a substantial adverse effect on 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?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The proposed Project site is located in a portion of the south San Joaquin Valley that has, for decades, experienced intensive agricultural and urban disturbances. Current agricultural endeavors in the region include dairies, groves, and row crops.

Like most of California, the southern San Joaquin Valley experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation in the vicinity of the project sites is about 8 inches, about 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The principal drainage of the project vicinity is Los Gatos Creek (Arroyo Pasajero), the historic channel of which travels in an easterly direction immediately north of the project site. Los Gatos Creek initiates in the Diablo Range, some 30 miles west of the site, at an elevation of approximately 3,000 feet.

Live Oak Associates (LOA) conducted reconnaissance-level field surveys of the Project site as part of a biological evaluation in late January 2020. The full report is provided in Appendix B of this document. In addition to the evaluation, LOA also prepared a San Joaquin Kit Fox Habitat Assessment Report in late January 2020, which is provided as Appendix C. At the time of the January 2020 field surveys, the project site consisted of vacant land managed as part of the Arroyo Pasajero Westside Detention Basin. Like the other lands of the detention basin, the site was in agricultural production prior to being purchased by the USBR. Historical aerial imagery indicates agricultural use of the entire project site through at least 1977. Images from 1992 show no agricultural use of the east half of the project site, with evidence of trees and shrubs becoming established in this area. The western half of the site remained in agricultural use until sometime in the early 2000's. The project site and detention basin, at large, now

support naturalized habitats that represent an approximately 3,000-acre island of natural lands in an extensive matrix of agricultural uses. Other land uses in the project vicinity include industrial, rural residential and municipal developments.

The topography of the site is nearly flat with elevations ranging from 345 feet National Geodetic Vertical Datum (NGVD) in the west to 329 feet NGVD in the southeast. Two soil-mapping units were identified within the project site: Excelsior, sandy substratum-westhaven association flooded, 0 to 2 percent slopes; and Westhaven loam, 0 to 2 percent slopes.[6] The properties of these soils do not support the formation of vernal pools and do not have unique characteristics that would support edaphic rare plant species. Furthermore, onsite soils have undergone prolonged disturbance due to decades of farming.

Habitat Types

Valley Saltbush Scrub

Valley saltbush scrub generally occurs in areas of undeveloped land within the San Joaquin Valley. On the project site this habitat has become naturalized in areas of the site left fallow for decades. Valley saltbush scrub habitat occupies approximately 231 acres of the project site, all within the Phase 2 area. This vegetation community is characterized by plants adapted to limited rainfall and mostly sandy to sandy loam soils. The dominant shrubs observed in this vegetation community were allscale (*Atriplex polycarpa*) and big saltbush (*Atriplex lentiformis*).

A remnant agricultural ditch occurs within the site's valley saltbush scrub habitat that was found to support a small amount of shallow surface water within a short stretch during the winter 2020 survey, but is expected to be dry for most of the year. The source of water originated from adjacent agricultural lands to the west but was separated from these lands by a levee with a gate at the head of the ditch.

The valley saltbush scrub observed on the site provides habitat for many native terrestrial vertebrate species. Birds observed within the onsite valley saltbush scrub included the loggerhead shrike (*Lanius ludovicianus*), blue-gray gnatcatcher (*Polioptila caerulea*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), Say's phoebe (*Sayornis saya*), house finch (*Haemorhous mexicanus*), and white-crowned sparrow (*Zonotrichia leucophrys*), among others. A number of raptor species were observed here, as well, and included the great-horned owl (*Bubo virginianus*), merlin (*Falco columbarius*), red-tailed hawk (*Buteo jamaicensis*), and northern harrier (*Circus hudsonius*).

[6] City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Biological Evaluation Report. Live Oak Associates. July 2020. Appendix B. Page 9.

Rodent burrows were regularly observed in this habitat at the time of the field surveys. Evidence of mammalian predators utilizing this habitat on the site included American badger fresh burrows and diggings and coyote (*Canis latrans*) burrows, scat, and prints. Other predatory mammals likely occurring here include the raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*). A number of bat species are likely to forage on the site as well; however, roosting habitat is limited.

Non-Native Grassland

At the time of the field surveys, non-native grassland habitat accounted for the entirety of the Phase 1 area and small portions of the Phase 2 area, encompassing approximately 198 acres of the overall project site. This habitat type was dominated by non-native grasses and forbs such as barnyard barley, red brome, rip-gut brome (*Bromus diandrus*), London rocket (*Sisymbrium irio*), red-stemmed filaree, fiddleneck, and Russian thistle.

The reptile and amphibian species expected in valley saltbush scrub habitats of the site could also potentially occur in grasslands of the site.

Avian use of the grassland would include year-round residents such as the horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*), winter migrants such as the savannah sparrow (*Passerculus sandwichensis*) and American pipit (*Anthus rubescens*), and summer migrants such as the western kingbird (*Tyrannus verticalis*); all but the western kingbird were observed during the field surveys. Red-tailed hawks, Swainson's hawks (*Buteo swainsoni*), northern harriers, and American kestrels (*Falco sparverius*) are expected to forage over the grassland.

Mammalian use of the grasslands is expected to be much the same as the valley saltbush scrub habitat.

Jurisdictional Waters

Jurisdictional waters are those rivers, creeks, drainages, lakes, ponds, reservoirs, and wetlands that are subject to the authority of the USACE, CDFW, and/or the RWQCB. In general, the USACE regulates navigable waters, tributaries to navigable waters, and wetlands adjacent to these waters, where wetlands are defined by the presence of hydric soils, hydrophytic vegetation, and wetland hydrology. The CDFW has jurisdiction over waters in California that have a defined bed and bank, and the RWQCB has jurisdiction over California surface water and groundwater.

While a small section of shallow inundation was observed within a remnant agricultural ditch on the site during the January 2020 survey, the ditch is expected to be dry for a majority of the year and would not meet the current USACE definition of a water of the U.S. Furthermore, it is highly unlikely that the CDFW or the RWQCB would assert jurisdiction over this feature.

Sensitive Natural Communities

Sensitive Natural Communities are those that are of limited distribution, distinguished by significant biological diversity, home to special status plant and animal species, of importance in maintaining water quality or sustaining flows, etc. Examples of sensitive natural communities include various types of wetlands, riparian habitat, and valley scrub habitats. CDFW has assigned State Ranks to California's natural communities that reflect the condition and imperilment of that community throughout its range within the state. State Ranks are represent with a letter and number score. Older ranks, which need to be updated in the CNDDB, may still contain a decimal "threat" rank of .1, .2, or .3, where .1 indicates very threatened status, .2 indicates moderate threat, and .3 indicates few or no current known threats.

While the entire site has been historically farmed, farming ceased approximately 20 years ago on the western half of the site and 40 years ago on the eastern half. The project site now supports approximately 231 acres of valley saltbush scrub. According to the CNDDB the valley saltbush scrub natural community has a California State Rank of S2.1. The definition of an S2 ranking value is as follows:

"Imperiled - Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state."

Large areas of natural and naturalized habitats in the San Joaquin Valley are rare due to wide scale agricultural conversion of valley lands that has been occurring over the last 150 years. Such habitats have the capacity to support native wildlife species once abundant in the San Joaquin Valley, many of which are now considered rare, threatened, and/or endangered due to loss of habitat.

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, rivers and creeks supporting riparian vegetation, and ridgelines.

While the Project site provides for local movement of native wildlife species within the naturalized lands associated with the Arroyo Pasajero Westside Detention Basin, the Project site does not contain features that would be likely to function as wildlife movement corridors.

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 of a threatened or endangered species and that may require special management and protection.

Designated critical habitat is absent from the project site and surrounding lands.

Special Status Plants and Animals

Several 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.

The *California Natural Diversity Data Base* (CNDDB) was queried for special status species occurrences in the nine USGS 7.5 minute quadrangles containing and immediately surrounding the project site (*Huron, Harris Ranch, Calflax, Vanguard, Guijarral Hills, Westhaven, Avenal, La Cima,* and *Kettleman City*). An official species list was obtained using the USFWS Information for Planning and Consultation (IPaC) system for federally listed species with the potential to be affected by the project and is provided in Appendix B. Thirty-four species were found to be in the Project vicinity as a result of these queries with 17 of these species determined to not be onsite due to lack of habitat.[7]

RESPONSES

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

Less than Significant Impact with Mitigation. The proposed Project includes the conversion of approximately 417 acres of vacant naturalized land into alfalfa fields for the purpose of disposing wastewater from the City of Huron WWTP. The Project will be constructed in two phases. Phase 1 will result in the conversion of 149 acres of grassland habitat to agricultural use and temporary impacts from the installation of 6,280 linear feet of pipeline. The second phase will be constructed at an unknown point

[7] City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Biological Evaluation Report. Live Oak Associates. July 2020. Appendix B. Table 1, Page 17.

in the future, if or when needed. At the time of this analysis there is no site plan for Phase 2, and this analysis assumes that the entire 269-acre Phase 2 area will be converted to agricultural use. Given the anticipated extensive delay between the two project phases, a separate impact analysis for the two phases follows.

Special Status Animal Species Absent from or Unlikely to Occur on the Project Site

Phase 1 impacts. Twelve regionally occurring special status animal species are considered absent or unlikely to occur on the project site due to past and ongoing disturbance of the site and surrounding lands, the absence of suitable habitat, and/or the site's being situated outside of the species' known distribution. Special status animals considered absent/unlikely comprise the vernal pool fairy shrimp, Delta smelt, California red-legged frog, blunt-nosed leopard lizard, Temblor legless lizard, California glossy snake, giant garter snake, Nelson's antelope squirrel, Fresno kangaroo rat, Tipton kangaroo rat, giant kangaroo rat, and Tulare grasshopper mouse. Phase 1 of the Project does not have the potential to significantly impact these species through construction mortality or loss of habitat because there is little or no likelihood that they are present. Project impacts to 12 special status animal species considered absent or unlikely to occur on the site are less than significant.

Phase 2 impacts. Special status animals considered absent/unlikely comprise the vernal pool fairy shrimp, Delta smelt, California red-legged frog, blunt-nosed leopard lizard, Temblor legless lizard, California glossy snake, giant garter snake, Nelson's antelope squirrel, Fresno kangaroo rat, Tipton kangaroo rat, giant kangaroo rat, and Tulare grasshopper mouse. Phase 2 of the Project does not have the potential to significantly impact these species through construction mortality or loss of habitat because there is little or no likelihood that they are present. Impacts are less than significant.

Special Status Animal Species that May Occur on the Project Site as Foragers but Breed Elsewhere

Phase 1 impacts. Four special status animal species, the mountain plover, tricolored blackbird, yellow-headed blackbird, and western mastiff bat have the potential to forage over the Phase 1 site's non-native grassland, but would not breed on or immediately adjacent to the Phase 1 site. Phase 1 of the Project will result in the conversion of 149 acres of non-native grassland to an alfalfa field. Because alfalfa is also suitable as foraging habitat for the three special status birds, none of these species will be impacted by loss of foraging habitat resulting from Phase 1. Similarly, the special status bat would be expected to continue foraging on and over the Phase 1 site following its conversion to an alfalfa field. Phase 1 of the Project does not have the potential to result in the mortality of individuals of any of the species considered in this section because all are highly mobile while foraging and would be expected to fly

away from construction disturbance. Project impacts to special status animals and sensitive migratory birds that would use the Phase 1 site for foraging only are less than significant.

Phase 2 impacts. Phase 2 of the project will result in the conversion of 259 acres of valley saltbush scrub and non-native grassland to an alfalfa field. Because alfalfa is also suitable as foraging habitat for the three special status birds, none of these species will be impacted by project-related loss of foraging habitat. Similarly, the western mastiff bat would be expected to continue foraging over the site following its conversion to an alfalfa field. Phase 2 of the Project does not have the potential to result in the mortality of individuals of any of the species considered in this section because all are highly mobile while foraging and would be expected to fly away from construction disturbance. Project impacts to special status animals that would use the site for foraging only are less than significant.

Special Status Plant Species

Phase 1 impacts. Five special status plant species have been previously documented in the Project vicinity. These comprise California jewelflower, San Joaquin woolly-threads, Kern mallow, brittlescale, and Lemmon's jewelflower.[8] These plant species are absent from the Phase 1 site due to many decades of past agricultural disturbance that would have eliminated populations of these species if they existed prior to agricultural use of the land. Therefore, Phase 1 of the proposed Project would have a less than significant impact on individuals or regional populations of these special status plant species.

Phase 2 impacts. These plant species are absent from the Phase 2 site due to decades of past agricultural disturbance of the site that would have eliminated populations of these species that may have existed prior to agricultural use of the land many decades ago. Therefore, Phase 2 of the Project would have no effect on individuals or regional populations of these special status plant species. Impacts to special status plant species are less than significant.

San Joaquin Whipsnake

Phase 1 impacts. Observations of a single San Joaquin whipsnakes at two separate locations have been documented in the Arroyo Pasajero Westside Detention Basin outside the Phase 1 area. It is possible that one or more individual San Joaquin whipsnakes could potentially occur within the Phase 1 project site.

[8] City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Biological Evaluation Report. Live Oak Associates. July 2020. Appendix B. Table 1, Page 46.

If whipsnakes were present and a few individuals were injured or killed during project activities, this would not be expected to adversely affect local or regional populations of this species. Therefore, construction-related mortality of the San Joaquin whipsnake is considered a less than significant impact of Phase 1 of the Project.

Phase 1 of the Project will result in the loss of up to 149 acres of non-native grassland currently suitable for the San Joaquin whipsnake. However, the proposed habitat strips would provide habitat for the whipsnake, as well as connectivity opportunity between naturalized lands east and west of the Phase 1 site. Furthermore, suitable habitat for this species is abundant elsewhere in the Arroyo Pasajero Westside Detention Basin. As a result, loss of habitat for the San Joaquin whipsnake is considered a less than significant impact of Phase 1.

Phase 2 impacts. Observations of a single San Joaquin whipsnakes at two separate locations have been documented in the Arroyo Pasajero Westside Detention Basin outside the Phase 2 area. It is possible that one or more individual San Joaquin whipsnakes could potentially occur within the Phase 2 Project site. If whipsnakes were present and a few individuals were injured or killed during project activities, this would not be expected to adversely affect local or regional populations of this species. Therefore, Project-related mortality of the San Joaquin whipsnake is considered a less than significant.

Phase 2 of the Project will result in the loss of up to 259 acres of currently suitable habitat for the San Joaquin whipsnake. The loss of this large area of suitable habitat for the San Joaquin whipsnake is considered a potentially significant impact; however, implementation of BIO-46 will reduce impacts to less than significant.

Short-nosed Kangaroo Rat

Phase 1 impacts. The short-nosed kangaroo rat has not been documented in the Arroyo Pasajero Westside Detention Basin. The closest documented occurrence is approximately 8 miles to the west. This species could conceivably occur within the Project site as Los Gatos Creek provides a potential movement corridor between the closest occurrence in the Guijarral Hills and the Phase 1 Project site. Should short-nosed kangaroo rats occur in the Phase 1 area, their numbers are likely low. Kangaroo rat burrows were relatively sparse within this area and mostly confined to disturbed grassland edges. If this species were present and a few individuals were injured or killed during project activities, this would not be expected to adversely affect local or regional populations of this species. Construction-related mortality of the short-nosed kangaroo rat is therefore considered a less than significant impact of Phase 1 of the Project.

Phase 1 of the project will result in the loss of up to 149 acres of non-native grassland currently suitable for the short-nosed kangaroo rat. However, the proposed habitat strips would provide increased habitat for this species, as this species prefers edge habitat; in addition, the habitat strips will provide connectivity opportunity between naturalized lands east and west of the Phase 1 site. Furthermore, suitable habitat for this species is abundant elsewhere in the Arroyo Pasajero Westside Detention Basin. As a result, loss of habitat for the short-nosed kangaroo rat is considered a less than significant impact of Phase 1.

Phase 2 impacts. The short-nosed kangaroo rat has the potential to occur in the Phase 2 area of the Project in potentially substantial numbers due to the higher quality habitat of this area over the Phase 1 area, and the abundance of kangaroo rat burrows in the Phase 2 area. The closest CNDDB documented occurrence is approximately 8 miles to the west and ESRP and CDFW literature contain maps that illustrate populations of this species in the vicinity of Huron. Therefore, this species could conceivably occur within the Phase 2 site. If this species were present, an unknown number individuals could be injured or killed during project activities, which would be considered a potentially significant impact.

Phase 2 of the Project will result in the loss of up to 259 acres of currently suitable habitat for the short-nosed kangaroo rat. The loss of this large area of suitable habitat for the short-nosed kangaroo rat is considered a potentially significant impact; however, implementation of BIO 24 and BIO 25 will reduce impacts to less than significant.

Western Spadefoot Toad

Phase 1 impacts. The Project site may support breeding habitat for this species and likely supports adult spadefoot toads that forage and aestivate on the site. During years with heavy rains, the spadefoot may still breed at a location on the site in which metamorphs (i.e. young toads) of this species were observed in 2001.[9] A majority of the Phase 1 site is sufficiently far from suitable breeding habitat such that spadefoot toads are not expected to occur within permanently impacted areas of this phase. However, a proposed Phase 1 pipeline would pass through or along an area in which spadefoot toads were observed in 2001. While this Project element will only result in temporary impacts, trenching has the potential to result in the mortality of individual western spadefoot toads. The risk of spadefoot mortality in this area would be highest in the spring, a time when young toads congregate in and around their natal pools,

[9] City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Biological Evaluation Report. Live Oak Associates. July 2020. Appendix B. Table 1, Page 37.

emerging from the pool after they have developed legs. However, even outside of this period, trenching has the potential to injure or kill spadefoot toads in their aestivation burrows. Impacts to spadefoot could be potentially significant; however implementation of BIO- 1 through BIO- 3 will reduce impacts to less than significant.

Phase 2 impacts. The development of Phase 2 of the Project would eliminate this potential breeding habitat. Phase 2 development would have a significant impact on spadefoot breeding and aestivation habitat. The development of this phase would also result in the possible mortality of spadefoot toad individuals. This is most likely in the winter and early spring when larva may be present in inundated areas and in late spring, a time when young toads congregate in and around their natal pools. Even outside of this period, Phase 2 construction activities may result in the mortality of spadefoot toads in their aestivation burrows. Construction-related mortality of spadefoot toads is a significant impact of the Phase 2 project. Implementation of BIO-21 through BIO-23 would reduce impacts to spadefoot to a less than significant level.

Burrowing Owl

Phase 1 impacts. The Phase 1 Project site contains suitable roosting, nesting and foraging habitat for burrowing owls. LOA surveys found one burrowing owl on the site in 2020 and five burrowing owls offsite in 2016. The Phase 1 Project will result in the conversion of most of the site's non-native grassland to an alfalfa field. The alfalfa fields would provide suitable foraging habitat for the burrowing owl of similar quality as the grasslands currently occupying the site. In addition, the proposed upland habitat strips running east to west through the proposed alfalfa field would provide nesting and roosting habitat for the burrowing owl and would make the alfalfa fields more accessible for foraging. However, to increase the likelihood of burrowing owl use of these habitat strips mitigation measures are presented below.

If burrowing owls are present on or adjacent to the Phase 1 site at the time of construction, Project activities could result in nest failure or mortality of individual owls. These small raptors are protected under the CMBPA and California Fish and Game Code. Mortality of individual birds would be a violation of state law, and would constitute a potentially significant impact of this project under CEQA and NEPA. Implementation of BIO-4 through BIO-8 will reduce impacts to less than significant.

Phase 2 impacts. The Phase 2 site contains valley saltbush scrub and non-native grassland habitat suitable for burrowing owl roosting, nesting and foraging. Phase 2 of the Project will result in the conversion of this habitat to an alfalfa field. The alfalfa fields would provide suitable foraging habitat for the burrowing owl of similar quality as habitats currently occupying the site. Nearly all the Phase 2 area would no

longer be suitable nesting or roosting habitat after project construction and nesting and roosting would be limited to field edges. The loss of this large area of suitable habitat for the burrowing owls is considered a potentially significant impact; however, implementation of BIO-46 will reduce potential impacts to less than significant.

If burrowing owls are present on or adjacent to the Phase 2 site at the time of construction, project activities could result in nest failure or mortality of individual owls. These small raptors are protected under the CMBPA and California Fish and Game Code. Mortality of individual birds would be a violation of state law, and would constitute a potentially significant impact; however, implementation of BIO-26 through BIO-28 will ensure impacts are less than significant.

Swainson's Hawk

Phase 1 impacts. Swainson's hawks are well documented in the Project vicinity, are known to forage on the Project site, and could potentially also nest in riparian trees adjacent to the Phase 1 area, although suitable nest trees are absent from Phase 1 itself. If Swainson's hawks are nesting adjacent to the Project site at the time of construction, individual hawks may be disturbed such that they would abandon their nest(s). Project activities that adversely affect the nesting success of Swainson's hawks or result in the mortality of individual hawks would violate state laws and be considered a significant impact under CEQA and NEPA. Implementation of BIO-9 through BIO-11 will reduce potential impacts to less than significant.

At present, grasslands of the Phase 1 site offer suitable foraging habitat for the Swainson's hawk. The Project will result in the conversion of this habitat to an alfalfa field. Alfalfa is the preferred Swainson's hawk foraging cover-type in the Central Valley[10] and its cultivation on the site will represent no significant change in the site's foraging value. Loss of foraging habitat for the Swainson's hawk is not a significant impact.

Phase 2 impacts. Swainson's hawks are well documented in the Project vicinity, are known to forage on the Project site, and could potentially also nest in trees on or adjacent to the Phase 2 site. If Swainson's hawks are nesting on or adjacent to the Phase 2 site at the time of construction, individual hawks may be disturbed such that they would abandon their nest(s). Project activities that adversely affect the nesting success of Swainson's hawks or result in the mortality of individual hawks would violate state and

[10] City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Biological Evaluation Report. Live Oak Associates. July 2020. Appendix B. Table 1, Page 40.

federal laws and be considered a significant impact. Implementation of BIO-29 through BIO-31 will reduce potential impacts to less than significant.

While a number of large athel tamarisk will be removed during this Project phase, these non-native trees were not found to support nesting Swainson hawks during two recent large scale Swainson's hawk nest surveys conducted in the region.[11] Nearly all the Fremont cottonwood trees in this phase were small and/or dead, rendering them unsuitable for Swainson hawk nesting. Furthermore, hundreds of mature athel tamarisk and Fremont cottonwood trees will remain elsewhere in the Arroyo Pasajero Westside Detention Basin. As a result, loss of Swainson's hawk nesting habitat is considered a less than significant impact under CEQA and NEPA.

At present, valley saltbush scrub and grasslands of the Phase 2 site offer suitable foraging habitat for the Swainson's hawk. This project phase will result in the conversion of these habitats to alfalfa fields. Alfalfa is the preferred Swainson's hawk foraging cover-type in the Central Valley and its cultivation on the site will represent no significant change in the site's foraging value. Loss of foraging habitat for the Swainson's hawk is not a significant impact of the project under CEQA and NEPA.

White-tailed Kite, Long-Eared Owl, Short-Eared Owl, Northern Harrier, Loggerhead Shrike, and other Nesting Migratory Birds and Raptors

Phase 1 impacts. The Project site contains grassland habitat that could be used by ground-nesting avian species protected under the California Migratory Bird Protection Act (CMBPA), such as the western meadowlark and mourning dove, and possibly also the special status northern harrier and short-eared owl. CMBPA-protected birds, including the special status loggerhead shrike, white-tailed kite, and long-eared owl, could also nest in the trees, shrubs, and/or tall, dense herbaceous vegetation located adjacent to Phase 1 disturbance areas. If construction occurs during the nesting season, birds nesting on the Phase 1 site could be injured or killed by construction activities, while birds nesting adjacent to the site could be disturbed such that they would abandon their nests. Activities that cause nest abandonment or mortality of CMBPA-protected birds would be a violation of the CMBPA and related state laws; however, implementation of BIO-12 and BIO-13 will ensure impacts remain less than significant.

The Phase 1 Project will not result in significant loss of habitat for the white-tailed kite, long-eared owl, short-eared owl, northern harrier, or loggerhead shrike, as alfalfa fields will provide similar foraging opportunity for these species as the existing grassland. Although suitable nesting habitat for the northern

[11] Ibid. Page 54.

harrier and short-eared owl in ground vegetation of the non-native grassland will be removed, similar habitat occurs throughout the remainder of the Arroyo Pasajero Westside Detention Basin. Similarly, suitable nesting habitat for the loggerhead shrike, white-tailed kite and long-eared owl is located immediately adjacent to the Phase 1 site and will continue to be available and suitable for these species following the site's conversion to an alfalfa field.

Phase 2 impacts. The Phase 2 site contains habitat that could be used by ground-nesting avian species protected under the CMBPA, such as the western meadowlark and mourning dove, and possibly also the special status northern harrier and short-eared owl. CMBPA-protected birds, including the special status loggerhead shrike, white-tailed kite, and long-eared owl, could also nest in the trees, shrubs, and/or tall, dense herbaceous vegetation located on or adjacent to Phase 2 disturbance areas. If construction occurs during the nesting season, birds nesting on the Phase 2 site could be injured or killed by construction activities, while birds nesting adjacent to the site could be disturbed such that they would abandon their nests. Activities that cause nest abandonment or mortality of CMBPA-protected birds would be a violation of the CMBPA and related state laws and would constitute a significant impact. Implementation of BIO-32 and BIO-33 will reduce potential impacts to less than significant.

The Phase 2 project will not result in significant loss of foraging habitat for the white-tailed kite, long-eared owl, short-eared owl, northern harrier, or loggerhead shrike, as alfalfa fields will provide similar foraging opportunity for these species as the existing grassland. While the Phase 2 project will result in a substantial loss of potential nesting habitat for the short-eared owl, northern harrier, and loggerhead shrike, implementation of BIO-46 will offset the loss of nesting habitat through the preservation of offsite lands. While potential nesting habitat for the white-tailed kite and long-eared owl will be lost, primarily in the form of non-native athel tamarisk, numerous athel tamarisk and riparian trees suitable for nesting by these species will remain immediately adjacent to the Phase 2 site, and will continue to be available and suitable for these species following the site's conversion to an alfalfa field.

San Joaquin Kit Fox

Phase 1 impacts. LOA conducted burrow surveys in late January, 2020 and no SJKF sign was observed, however, five burrows appeared to fit the dimensions typical of SJKF dens.[12] Although the Phase 1 grasslands represent suitable denning and foraging habitat for the San Joaquin Kit Fox (SJKF), the CNDDB lists no recent occurrences of the SJKF within 10 miles of the Project site, and the site is located

[12] San Joaquin Kit Fox Habitat Assessment Report. City of Huron Additional Effluent Reclamation Area (Phases 1 and 2). Prepared by Live Oak Associates, Inc. January 2020. Appendix C of this document. Page 11.

over 50 miles from the nearest core kit fox population. For these reasons, the kit fox is expected to be a rare visitor to the site, at most. However, in the unlikely event that a kit fox were present at the time of Phase 1 construction, it would be vulnerable to construction-related injury or mortality. Such an event would constitute a violation of federal and state law and would represent a significant impact of the Project. Implementation of BIO-14 through BIO-18 will ensure impacts remain less than significant.

The Phase 1 Project will not result in loss of foraging habitat for the SJKF because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. Furthermore, the proposed habitat strips will provide suitable denning habitat throughout the alfalfa field and potential denning habitat for the SJKF is abundant elsewhere in the Arroyo Pasajero Westside Detention Basin. Therefore, loss of habitat for the SJKF is considered a less than significant impact.

Phase 2 impacts. Although the valley saltbush scrub and grasslands of the Phase 2 site represent suitable denning and foraging habitat for the SJKF, the CNDDB lists no recent occurrences of the SJKF within 10 miles of the Project site, and the site is located over 50 miles from the nearest core kit fox population. For these reasons, the kit fox is expected to be a rare visitor to the site, at most. However, in the unlikely event that a kit fox were present at the time of Phase 2 construction, it would be vulnerable to construction-related injury or mortality. Such an event would constitute a violation of federal and state law and would represent a significant impact; however, implementation of BIO-35 through BIO-39 will reduce potential impacts to less than significant.

The Phase 2 project will not result in loss of foraging habitat for the SJKF because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. However, it is theoretically possible that SJKF would be precluded from accessing the alfalfa field by perimeter fencing, should any fencing that is ultimately proposed be impermeable to SJKF movement. If the future alfalfa fields are inaccessible to SJKF, a substantial amount of potential foraging habitat for this species would be effectively lost, a significant impact under CEQA and NEPA. Implementation of BIO-34 will reduce this impact to less than significant. Moreover, Phase 2 of the project will result in a significant loss of suitable denning habitat for this species; however, BIO-46 will reduce this impact to less than significant.

American Badger

Phase 1 impacts. The American badger is relatively uncommon in the region and may have been locally extirpated during agricultural conversion of the entire Huron area decades ago. Despite the historic absence of habitat on the project site and vicinity, evidence of American badger was observed adjacent to the Phase 1 Project site in the form of fresh diggings and burrows with distinctive badger claw marks. The presence of badgers in these areas suggests that badgers moved onto the site from naturalized lands

to the west via Los Gatos Creek once agricultural use of the site ceased. If one or more badgers were denning on the Phase 1 site at the time of construction, then these individuals would be at risk of project-related injury or mortality. Construction mortality of American badgers is considered a potentially significant impact of Phase 1 of the Project; however, implementation of BIO-19 and BIO-20 will reduce impacts to less than significant.

Phase 1 of the Project will not result in loss of foraging habitat for the American badger because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. Furthermore, the proposed habitat strips will provide potential denning habitat in close proximity to foraging opportunity in the proposed alfalfa fields. Potential denning habitat for the badger is abundant elsewhere in the Arroyo Pasajero Westside Detention Basin. Therefore, loss of habitat for the badger is not considered a significant impact.

Phase 2 impacts. The American badger is relatively uncommon in the region and may have been locally extirpated during agricultural conversion of the entire Huron area decades ago. Despite the historic absence of habitat on the Project site and vicinity, evidence of American badger was observed within the Phase 2 site in the form of fresh diggings and burrows with distinctive badger claw marks. The presence of badgers in these areas suggests that badgers moved onto the site from naturalized lands to the west via Los Gatos Creek once agricultural use of the site ceased. If one or more badgers were denning on the Phase 2 site at the time of construction, then these individuals would be at risk of project-related injury or mortality. Construction mortality of American badgers is considered a potentially significant impact of Phase 2 of the project; however, implementation of BIO-40 and BIO-41 will reduce any impacts to less than significant.

The Phase 2 project will not result in loss of foraging habitat for the American badger because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. A significant amount of suitable denning habitat will be converted to alfalfa. The loss of this large area of suitable denning habitat for the American badger is considered a potentially significant impact; however, BIO-46 will reduce potential impacts to less than significant.

Pallid Bat

Phase 1 impacts. Because alfalfa is also suitable as foraging habitat for the Pallid bat, this species will not be impacted by loss of foraging habitat resulting from Phase 1. Phase 1 of the Project does not have the potential to result in the mortality of Pallid bats because all are highly mobile while foraging and would be expected to fly away from construction disturbance. Impacts are less than significant.

Phase 2 impacts. The Phase 2 site contains trees within which the pallid bat could roost. If any trees containing bat maternity roosts are removed, many individual bats could be killed. Such a mortality event would be considered a potentially significant impact; however, implementation of BIO-42 through BIO-45 will reduce impacts to less than significant.

Although Phase 2 of the Project will result in the loss of potential roosting habitat for the pallid bat, numerous trees suitable for bat roosting occur elsewhere in the Arroyo Pasajero Westside Detention Basin and will continue to be available following the Phase 2 site's conversion to an alfalfa field. Phase 2 of the Project will not result in a significant loss of foraging habitat for the pallid bat, as the proposed alfalfa fields will provide similar foraging habitat to what currently exists on the site. Therefore, the loss of potential roosting habitat and foraging habitat for the pallid bat is considered a less than significant impact.

Mitigation Measures:

Phase I Mitigation

BIO- 1. The pipeline alignment at the location of the 2001 observation shall be located as far south as possible against the toe of slope of the existing offsite irrigation ditch.

BIO-2. To avoid the mortality of numerous young toads, the pipeline shall be installed between June and October before the first significant rain event occurs.

BIO-3. Seven (7) days prior to construction of the pipeline, a qualified biologist shall survey the pipeline alignment within 890 feet of the documented observation site for western spadefoot. Any spadefoot observed shall be captured and relocated to a burrow outside the pipeline alignment but within 1,200 feet of the location of the documented breeding location.

BIO-4. The City shall install 24" high perching posts every 500 feet within each of the habitat strips. Perching posts shall consist of a cut, 2-foot long section of T-post welded to the top of another T-post at a right angle to the main post.

BIO-5. To increase roosting and nesting habitat within the habitat strips created by ground squirrels, rodent control measures (other than encouraging natural predator use) shall be forbidden within and out to 100 feet from the habitat strips.

BIO-6. A pre-construction "take avoidance" survey shall be conducted by a qualified biologist for burrowing owls within 14 days of the onset of Phase 1 construction according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The

survey area shall include all suitable habitat on and within 200 meters of Phase 1 impact areas, where accessible.

BIO-7. If Phase 1 project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near project impact areas, a 200-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers shall remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described in BIO-8.

BIO-8. During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may either be avoided, or passively relocated to alternative habitat. If the City chooses to avoid active owl burrows within the impact area during the non-breeding season, a 50-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.

BIO-9. In order to avoid impacts to nesting Swainson's hawks, Phase 1 construction activities shall occur, where possible, outside the nesting season, typically defined as March 1-September 15.

BIO-10. If construction activities must occur between March 1 and September 15, a qualified biologist shall conduct nest surveys for Swainson's hawks on and within ½ mile of the Phase 1 site in accordance with Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (SHTAC 2000). Three nest surveys shall be conducted in each of two survey periods, with the survey periods defined as follows: Period I – January 1 to March 20, Period II – March 20 to April 5, Period III – April 5 to April 20, Period IV – April 21 to June 10, and Period V – June 10 to July 30. Surveys shall take place in the two survey periods immediately prior to the start of construction, with the exception of Period IV, when no surveys should take place per

the SHTAC 2000 guidelines. The surveys will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

BIO-11. Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer shall be established based on local conditions and agency guidelines. Disturbance-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

BIO-12. If feasible, Phase 1 of the Project shall be implemented outside of the avian nesting season, typically defined as February 1 to August 31.

BIO-13. If Phase 1 construction is to occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 14 days of the onset of construction. 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 and are capable of foraging independently.

BIO-14. Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of Phase 1 ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on the project site and evaluate their use by kit foxes. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS shall be contacted immediately to determine the best course of action.

BIO-15. Should active kit fox dens be detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be notified. A disturbance-free buffer shall be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.

BIO-16. All minimization measures presented in the *USFWS Standardized Recommendations* will be implemented for Phase 1 of the Project. Such measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g.,

pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.

BIO-17. Prior to the start of Phase 1 construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the Project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

BIO-18. The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be notified in writing within three working days in case of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification shall include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

BIO-19. A preconstruction survey for American badgers shall be conducted by a qualified biologist within 30 days of the start of Phase 1 construction. Preconstruction surveys shall be conducted in all suitable denning habitat of the Project site.

BIO-20. Should an active den or natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer shall be established around the den and maintained until a qualified biologist has determined that the badgers have dispersed or the den has been abandoned.

Phase 2 Mitigation

BIO-21. To avoid the mortality of numerous larvae or young toads, ground disturbance within 890 feet of the CNDDB occurrence on the site will be initiated between June and October before the first significant rain event occurs.

BIO-22. Seven (7) days prior to construction of the project within 890 feet of the documented onsite occurrence, a qualified biologist will survey the development area within 1,200 feet of the documented observation site for western spadefoot. Any spadefoot observed will be captured and relocated to a burrow outside the project area but within 890 feet of potential breeding habitat elsewhere on the Arroyo Pasajero Westside Detention Basin.

BIO-23. The City shall purchase land or conservation bank credits as described in BIO-46 that has been determined to support western spadefoot toads.

BIO-24. Focused protocol-level trapping surveys shall be conducted by a qualified wildlife biologist that has been issued the appropriate permits by CDFW and USFWS to determine if short-nosed kangaroo rats occur within Phase 2 of the Project site. These surveys will be conducted in accordance with USFWS 2013 *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* well in advance of ground-disturbing activities.

BIO-25. If the short-nosed kangaroo rat is identified during the protocol-level surveys, the project applicant shall purchase land or conservation bank credits as described in BIO-46 that has been determined to support short-nosed kangaroo rat.

BIO-26. A pre-construction "take avoidance" survey shall be conducted by a qualified biologist for burrowing owls within 14 days of the onset of Phase 2 construction according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The survey area shall include all suitable habitat on and within 200 meters of Phase 2 impact areas, where accessible.

BIO-27. If Phase 2 project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near project impact areas, a 200-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers shall remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described in BIO-28.

BIO-28. During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may either be avoided, or passively relocated to alternative habitat. If the City chooses to avoid active owl burrows within the impact area during the non-breeding season, a 50-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the City chooses to passively relocate owls during the non-breeding season, this

activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.

BIO-29. In order to avoid impacts to nesting Swainson's hawks, Phase 2 construction activities shall occur, where possible, outside the nesting season, typically defined as March 1-September 15.

BIO-30. If construction activities must occur between March 1 and September 15, a qualified biologist shall conduct nest surveys for Swainson's hawks on and within ½ mile of the Phase 2 site in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTAC 2000). Three nest surveys shall be conducted in each of two survey periods, with the survey periods defined as follows: Period I – January 1 to March 20, Period II – March 20 to April 5, Period III – April 5 to April 20, Period IV – April 21 to June 10, and Period V – June 10 to July 30. Surveys shall take place in the two survey periods immediately prior to the start of construction, with the exception of Period IV, when no surveys should take place per the SHTAC 2000 guidelines. The surveys shall consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

BIO-31. Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer shall be established based on local conditions and agency guidelines. Disturbance-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

BIO-32. If feasible, Phase 2 of the Project shall be implemented outside of the avian nesting season, typically defined as February 1 to August 31.

BIO-33. If Phase 2 construction is to occur between February 1 and August 31, a qualified biologist shall conduct pre-construction surveys for active migratory bird nests within 14 days of the onset of construction. Should any active nests be discovered in or near proposed construction zones, the biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.

BIO-34. Any perimeter fencing of the Phase 2 site shall allow for San Joaquin kit fox passage. This can be accomplished through the installation of barbed-wire fencing or a

gap of 6 inches or greater between the ground and the bottom of impermeable fencing material such as chainlink fencing. Wire at the bottom portion of such chainlink fencing shall be knuckled upward to prevent injury to animals passing beneath the fence.

BIO-35. Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of Phase 2 ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on the project site and evaluate their use by kit foxes. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS shall be contacted immediately to determine the best course of action.

BIO-36. Should active kit fox dens be detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.

BIO-37. All minimization measures presented in the *USFWS Standardized Recommendations* shall be implemented for Phase 2 of the Project. Such measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.

BIO-38. Prior to the start of Phase 2 construction, the City shall retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training shall include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

BIO-39. The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be notified in writing within three working days in case of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification shall include

the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

BIO-40. A preconstruction survey for American badgers shall be conducted by a qualified biologist within 30 days of the start of Phase 2 construction. Preconstruction surveys shall be conducted in all suitable denning habitat of the Phase 2 site.

BIO-41. Should an active den or natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer shall be established around the den and maintained until a qualified biologist has determined that badgers have dispersed or the den has been abandoned.

BIO-42. To avoid potential impacts to maternity bat roosts, Phase 2 tree removal shall occur outside of the period between April 15 and August 31, the time frame within which colony-roosting bats generally assemble, give birth, nurse their young, and ultimately disperse.

BIO-43. If tree removal is to occur between April 15 and August 31 (general maternity bat roost season), a qualified biologist shall survey suitable trees for the presence of bats within 30 days prior to their removal. The biologist shall look for individuals, guano, and staining, and shall listen for bat vocalizations. If necessary, the biologist shall wait for nighttime emergence of bats from roost sites. If no bats are observed to be roosting or breeding, then no further action would be required, and construction could proceed.

BIO-44. If a non-breeding bat roost is found in disturbance areas, the individuals shall be humanely evicted via two-stage removal of buildings/trees, under the direction of a qualified biologist to ensure that no harm or "take" of any bats occurs as a result of construction activities.

BIO-45. If a maternity colony is detected during preconstruction surveys, a disturbance-free buffer shall be established around the colony and remain in place until a qualified biologist determines that the nursery is no longer active. The disturbance-free buffer shall range from 50 to 100 feet as determined by the biologist.

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

Less Than Significant Impact with Mitigation. As discussed in the environmental setting, approximately 231 acres of the Project site supports valley saltbush scrub habitat, which is an "imperiled" sensitive natural community. A vast majority of saltbush scrub habitat has been eliminated from the San Joaquin Valley. Conversion of this habitat to alfalfa fields is considered potentially significant; however, implementation of BIO-46 will ensure that impacts remain ***less than significant.***

Mitigation Measures:

> **BIO-46.** Prior to the implementation of Phase 2 Project activities, the City shall either purchase a minimum of 462 acres of land determined by a qualified biologist to contain saltbush scrub habitat and place a conservation easement over this land, to be protected and maintained in perpetuity, or the City shall purchase a minimum of 462 credits from a CDFW-approved conservation bank that contains saltbush scrub habitat. Should the City choose to purchase land for a conservation easement, a five-strand barbed wire fence shall be maintained around the property with signs placed every 500 feet stating that the property is a protected ecological area.

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?

No Impact. As described in the setting section, there are no natural waterways, protected wetlands, or migratory corridors on the subject site. As such, there is ***no impact.***

Mitigation Measures: None are required.

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

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

No Impact. The City of Huron does not have an adopted tree preservation policy or other ordinance protecting biological species, nor does it have an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or is within an area of other approved local, regional. Or state habitat conservation plan. As such, there is ***no impact.***

Mitigation Measures: None are required.

V. CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined 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 formal cemeteries?	☐	☒	☐	☐

ENVIRONMENTAL SETTING

Archaeological resources are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric (before the introduction of writing in a particular area) or historic (after the introduction of writing). The majority of such places in this region are associated with either Native American or Euroamerican occupation of the area. The most frequently encountered prehistoric and early historic Native American archaeological sites are village settlements with residential areas and sometimes cemeteries; temporary camps where food and raw materials were collected; smaller, briefly occupied sites where tools were manufactured or repaired; and special-use areas like caves, rock shelters, and sites of rock art. Historic archaeological sites may include foundations or features such as privies, corrals, and trash dumps.

The Project area lies within the homeland of the Southern Valley Yokuts. At the time of first contact with the Spanish missionaries, the Yokuts people, which included northern valley and foothill groups, collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Fresno River southward to the Kern River. The Yokuts language belongs to the broader Penutian family, which subsumes a relatively diverse assemblage of languages including Miwok, Costanoan, Maiduan, and Wintuan. Compared to other Penutian languages, however, Yokuts shows considerable internal linguistic homogeneity, especially given the extent of its geographic distribution. Dialects differ minimally and were mutually intelligible at least among speakers of contiguous groups. This relative lack of linguistic differentiation suggests that ancestors of the Yokuts entered California after the arrival

and subsequent radiation of the more linguistically diverse Penutian groups such as the Miwok and Costanoan.

The Tulare Lake basin offered a rich and varied array of resources to the several Southern Valley Yokuts tribes occupying its environs. Of these groups, the Tachi occupied the western shores of Tulare Lake and the area around the Fresno Slough. In particular, mid-twentieth century ethnographer Frank Latta identified the town of Huron as the Tachian village site of Holón (Golon), based on his interviews with Native American informants. Other nearby villages included Údgeu (Udjiu) about five miles southwest from Holón and Walnau (Walna) on the westernmost shores of Tulare Lake about 12 miles south of Huron.

Like many valley towns, Huron owes its existence to the railroad. In the spring of 1872, the Southern Pacific Railroad rolled into Fresno County, connecting this previously remote region with the San Francisco Bay area. Five years later, the railroad built a branch line from Goshen 40 miles westward; the endpoint of this line became Huron. It appears that the railroad's intent was to improve the area's infrastructure in order to better market its land holdings there. Up to this time, stockmen grazed their sheep and cattle on the wild grasses that once covered the valley. At Posa Chiné/Poso Chané, the Higueras were succeeded by Gustav Kreyenhagen and family, who had moved their flocks and herds from the Los Banos area in 1875. The Kreyenhagens sheered as many as 150,000 sheep per year and shipped the wool to the railhead at Huron. By the 1880s, area farmers like W. P. Kerr and J. M. Wells were reaping substantial harvests of barley and hay. Edward Vogelsang built a grain warehouse in Huron in 1888, and ranchers such as the McSwain family constructed their homes in the town. In 1892, Huron included a general merchandise store, two smaller shops, a blacksmith, and two livery stables.

To meet state and federal requirements, the City retained Petra Resource Management (Petra) to conduct background research, complete a records search, request a search of the Native American Heritage Commission's Sacred Lands File and reach out to appropriate Native American contacts, conduct a cultural resources survey, and prepare a technical report (see Appendix D).

As part of a Cultural Resources Inventory for the proposed Project site, a records search was conducted at the Southern San Joaquin Valley Information Center (SSJVIC), California Historical Resources Information System in April of 2020, by Petra (see Appendix D). Records searched included the National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, California Inventory of Historic Resources, California Points of Historical Interest, Directory of Properties in the Historic Property Data File and Archaeological Determinations of Eligibility, California Department of Transportation State and Local Bridge Survey, General Land Office (GLO) plats, and other pertinent historic maps.

According to the SSJVIC records, there are no identified previously recorded cultural resources within the proposed Project area. Eight cultural resources have been identified within 0.5 mile of the site, both are unrecorded segments of historical linear built environment resources, the San Joaquin Valley Railroad and the California Aqueduct.

Along with the records search, Petra archaeologists conducted a pedestrian survey over the entire 417-acre site plus an additional 83 acres, for a total of 500 acres. No isolated artifacts, archaeological sites, or historical built environment resources were identified during the survey.

The cultural resource investigation documented in this report was carried out to satisfy the requirements of both the CEQA and Section 106 of the NHPA, and the results are presented in accordance with Archaeological Resource Management Reports (ARMR): Recommended Contents and Formats (Office of Historic Preservation 1990). A copy of this report will be transmitted to the Southern San Joaquin Valley Information Center at California State University, Bakersfield for inclusion in the California Historical Resources Information System. Field notes and photographs are on file at Petra's office in Tehachapi, California.

The Project is subject to the California Environmental Act (CEQA), which holds municipal and state agencies accountable for impacts to the cultural environment. If a project has the potential to cause substantial adverse change in the characteristics of an important cultural resource, known as a "historical resource" under CEQA—either through demolition, destruction, relocation, alteration, or other means—then the project is judged to have a significant impact on the environment (CEQA Guidelines, Section 15064.5[b]). Section 15064.5(a) of the CEQA Guidelines (as amended) defines a historical resource as one that: (1) is listed or determined eligible for listing in the California Register of Historical Resources (California Public Resources Code [PRC] Section 5024.1; Title 14, California Code of Regulations [CCR], Section 4852); (2) is included in a local register of historical resources (pursuant to Section 5020.1[k]) of the PRC) or identified as significant in a historical resources survey per the California Register eligibility criteria (PRC 5024.1[c]); or (3) is considered eligible by a lead agency under PRC 5020.1(j) or 5024.1. The definition subsumes a variety of resources, including prehistoric and historical archaeological sites, as well as built-environment resources, such as buildings, structures, and objects (CEQA Guidelines Section 15064.5[a][3] and Section 15064.5[c]). Given that the project will involve ground-disturbing activities and demolition, it has the potential to impact historical resources, if present, within the Project area.

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains

until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper and dignified treatment of the remains and associated grave artifacts.

Paleontological Resources

Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources.

CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 (see above) also applies to paleontological resources.

RESPONSES

a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

No Impact. As discussed above, no historic resources were identified within or adjacent to the project site. There is ***no impact***.

Mitigation Measures: None are required.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

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

Less Than Significant Impact With Mitigation. The project area is highly disturbed, consisting of vacant land. There are no known or visible cultural or archaeological resources, paleontological resources, or human remains that exist on the surface of the project area. Therefore, it is determined that the project has low potential to impact any sensitive resources and no further cultural resources

work is required unless project plans change to include work not currently identified in the project description.

Although no cultural or archaeological resources, paleontological resources or human remains have been identified in the project area, the possibility exists that such resources or remains may be discovered during Project site preparation, excavation and/or grading activities. Mitigation Measures CUL – 1 and CUL – 2 will be implemented to ensure that Project will result in ***less than significant impacts with mitigation***.

Mitigation Measures:

CUL – 1. Should evidence of prehistoric archeological resources be discovered during construction, the contractor shall halt all work within 25 feet of the find and the resource shall be evaluated by a qualified archaeologist. If evidence of any archaeological, cultural, paleontological and/or historical deposits is found, hand excavation and/or mechanical excavation shall proceed to evaluate the deposits for determination of significance as defined by the CEQA guidelines. The archaeologist shall submit reports, to the satisfaction of the City of Huron, describing the testing program and subsequent results. These reports shall identify any program mitigation that the project proponent shall complete in order to mitigate archaeological impacts (including resource recovery and/or avoidance testing and analysis, removal, reburial, and curation of archaeological resources).

CUL – 2. In order to ensure that the proposed project does not impact buried human remains during project construction, the City shall be responsible for on-going monitoring of project construction. If buried human remains are encountered during construction, further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall be halted until the Fresno County coroner is contacted and the coroner has made the determinations and notifications required pursuant to Health and Safety Code Section 7050.5. If the coroner determines that Health and Safety Code Section 7050.5(c) require that he give notice to the Native American Heritage Commission, then such notice shall be given within 24 hours, as required by Health and Safety Code Section 7050.5(c). In that event, the NAHC will conduct the notifications required by Public Resources Code Section 5097.98. Until the consultations described below have been completed, the landowner shall further ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices where Native American human remains are located, is not disturbed by further development activity until the landowner has discussed and conferred with the

Most Likely Descendants on all reasonable options regarding the descendants' preferences and treatments, as prescribed by Public Resources Code Section 5097.98(b). The NAHC will mediate any disputes regarding treatment of remains in accordance with Public Resources Code Section 5097.94(k). The landowner shall be entitled to exercise rights established by Public Resources Code Section 5097.98(e) if any of the circumstances established by that provision become applicable.

VI. ENERGY

Would the project:

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

ENVIRONMENTAL SETTING

California's total energy consumption is second-highest in the nation, but, in 2016, the state's per capita energy consumption ranked 48th, due in part to its mild climate and its energy efficiency programs. In 2017, California ranked second in the nation in conventional hydroelectric generation and first as a producer of electricity from solar, geothermal, and biomass resources while also in 2017, solar PV and solar thermal installations provided about 16% of California's net electricity generation.[13]

Energy usage is typically quantified using the British thermal unit (BTU). As a point of reference, the approximately amounts of energy contained in common energy sources are as follows:

Energy Source	BTUs[14]
Gasoline	120,429 per gallon
Natural Gas	1,037 per cubic foot
Electricity	3,412 per kilowatt-hour

[13] U.S. Energy Information Administration. Independent Statistics and Analysis. California Profile Overview. https://www.eia.gov/state/?sid=CA#tabs-1. Accessed June 2020.
[14] U.S. Energy Information Administration. Energy Units and Calculators Explained. https://www.eia.gov/energyexplained/index.php?page=about_energy_units. Accessed June 2020.

California electrical consumption in 2016 was 7,830.8 trillion BTU[15], as provided in Table 5, while total electrical consumption by Fresno County in 2018 was 26.109 trillion BTU.[16]

Table 5 – 2016 California Energy Consumption[17]

End User	BTU of energy consumed (in trillions)	Percentage of total consumption
Residential	1,384.4	17.7
Commercial	1,477.2	18.9
Industrial	1,854.3	23.7
Transportation	3,114.9	39.8
Total	**7,830.8**	--

The California Department of Transportation (Caltrans) reports that approximately 25.1 million automobiles, 5.7 million trucks, and 889,024 motorcycles were registered in the state in 2017, resulting in a total estimated 339.8 billion vehicles miles traveled (VMT).[18]

Applicable Regulations

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

California Code of Regulations Title 24, Part 6 comprises the California Energy Code, which was adopted to ensure that building construction, system design and installation achieve energy efficiency. The California Energy Code was first established in 1978 by the CEC in response to a legislative mandate to reduce California's energy consumption, and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The standards are updated periodically to increase the baseline energy efficiency requirements. The 2013 Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings and include requirements to enable both demand reductions during critical peak periods and future solar electric and thermal system installations. Although it was not originally intended to reduce greenhouse gas (GHG) emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

[15] U.S. Energy Information Administration. Independent Statistics and Analysis. California Profile Overview. https://www.eia.gov/state/?sid=CA#tabs-1. Accessed June 2020.
[16] California Energy Commission. Electricity Consumption by County. http://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed June 2020.
[17] U.S. Energy Information Administration. Independent Statistics and Analysis. California Profile Overview. https://www.eia.gov/state/?sid=CA#tabs-1. Accessed June 2020.
[18] Caltrans. 2017. California Transportation Quick Facts. http://www.dot.ca.gov/drisi/library/qf/qf2017.pdf. Accessed June 2020.

California Green Building Standards Code (Title 24, Part II, CALGreen)

The California Building Standards Commission adopted the California Green Buildings Standards Code (CALGreen in Part 11 of the Title 24 Building Standards Code) for all new construction statewide on July 17, 2008. Originally a volunteer measure, the code became mandatory in 2010 and the most recent update (2019) will go into effect on January 1, 2020. CALGreen sets targets for energy efficiency, water consumption, dual plumbing systems for potable and recyclable water, diversion of construction waste from landfills, and use of environmentally sensitive materials in construction and design, including eco-friendly flooring, carpeting, paint, coatings, thermal insulation, and acoustical wall and ceiling panels. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; water use; weather resistance and moisture management; construction waste reduction, disposal, and recycling; building maintenance and operation; pollutant control; indoor air quality; environmental comfort; and outdoor air quality. Mandatory measures for residential development pertain to green building; planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; environmental quality; and installer and special inspector qualifications.

Clean Energy and Pollution Reduction Act (SB 350)

The Clean Energy and Pollution Reduction Act (SB 350) was passed by California Governor Brown on October 7, 2015, and establishes new clean energy, clean air, and greenhouse gas reduction goals for the year 2030 and beyond. SB 350 establishes a greenhouse gas reduction target of 40 percent below 1990 levels for the State of California, further enhancing the ability for the state to meet the goal of reducing greenhouse gas emissions by 80 percent below 1990 levels by the year 2050.

Renewable Portfolio Standard (SB 1078 and SB 107)

Established in 2002 under SB 1078, the state's Renewables Portfolio Standard (RPS) was amended under SB 107 to require accelerated energy reduction goals by requiring that by the year 2010, 20 percent of electricity sales in the state be served by renewable energy resources. In years following its adoption, Executive Order S-14-08 was signed, requiring electricity retail sellers to provide 33 percent of their service loads with renewable energy by the year 2020. In 2011, SB X1-2 was signed, aligning the RPS target with the 33 percent requirement by the year 2020. This new RPS applied to all state electricity retailers, including publicly owned utilities, investor-owned utilities, electrical service providers, and community choice aggregators. All entities included under the RPS were required to adopt the RPS 20 percent by year 2020 reduction goal by the end of 2013, adopt a reduction goal of 25 percent by the end of 2016, and meet the 33 percent reduction goal by the end of 2020. In addition, the Air Resources Board,

under Executive Order S-21-09, was required to adopt regulations consistent with these 33 percent renewable energy targets.

RESPONSES

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

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

Less Than Significant Impact. The proposed Project includes construction of 417 acres of an effluent reclamation field in support of the existing WWTP. Also included is the installation of perimeter fencing and internal roadway, and the installation of 6,280 linear feet of pipeline. The Project at build-out will consume energy in the short-term during Project construction, and also minimal amounts of energy in the long-term during Project operation.

During construction, the Project would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as pipes. Title 24 Building Energy Efficiency Standards provide guidance on construction techniques to maximize energy conservation and it is expected that contractors and owners have a strong financial incentive to use recycled materials and products originating from nearby sources in order to reduce materials costs. As such, it is anticipated that materials used in construction and construction vehicle fuel energy would not involve the wasteful, inefficient, or unnecessary consumption of energy.

Minimal operational energy consumption would occur as treated effluent would be pumped through pipelines to be applied onto converted fields, similar to WWTP operations on the adjacent effluent reclamation field. CalEEMod was utilized to generate the estimated construction energy demand of the effluent reclamation field portion of the project. Estimated electricity use and natural gas use for the proposed Project is zero, as provided in Appendix A.

As discussed in Impact XVII – Transportation/Traffic, at build-out the Project will generate a maximum of two (field maintenance) daily trips. The length of these trips and the individual vehicle fuel efficiencies are not known; therefore, the resulting energy consumption cannot be accurately calculated. Adopted federal vehicle fuel standards have continually improved since their original adoption in 1975 and assists in avoiding the inefficient, wasteful, and unnecessary use of energy by vehicles.

The proposed Project would be required to implement and be consistent with existing energy design standards at the local and state level. The Project would be subject to energy conservation requirements in the California Energy Code and CALGreen. Adherence to state code requirements would ensure that

the Project would not result in wasteful and inefficient use of non-renewable resources due to building operation.

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

Mitigation Measures: None are required.

VII. GEOLOGY AND SOILS

Would the project:

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

	substantial direct or indirect risks to life or property?			
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

ENVIRONMENTAL SETTING

Huron is located near the western edge of the Great Central Valley, which is a nearly flat northwest-southeast trending basin approximately 450 miles long by 50 miles wide. Huron, along with the majority of the western portion of Fresno County is on soils derived from quaternary alluvial materials. The Nunez Fault is located approximately 21 miles northwest of the proposed Project site and is designated as an Earthquake Hazard Zone under the Alquist-Priolo Earthquake Fault Zoning Act of 1994. The City of Huron is located in a Seismic Zone 3, as defined by the California Uniform Building Code.[19]

Uniform 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. The California Building Code incorporates by reference the Uniform Building Code with necessary California amendments. The Uniform Building Code is a widely adopted model building code in the United States published by the International Conference of Building Officials. About one-third of the text within the California Building Code has been tailored for California earthquake conditions.

RESPONSES

a-i. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo

[19] Fresno County Background Report for the General Plan Update. Adopted 2000. Page 9-6. http://www.co.fresno.ca.us/viewdocument.aspx?id=5696

Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The proposed Project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone. Since no known surface expression of active faults is believed to cross the site, fault rupture through the site is not anticipated. Any impacts would be ***Less Than Significant.***

Mitigation Measures: None are required.

a-ii. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking, liquefaction or landslides?

Less than Significant Impact. Fresno County has extremely low seismic activity levels, although shaking may be felt from earthquakes whose epicenter lie to the south and west. No new structures are included in the proposed Project. Due to the relatively flat topography of the proposed Project area, impacts associated with landslides are not anticipated. Impacts would be ***less than significant.***

Mitigation Measures: None are required.

b. Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. The proposed Project site has a generally flat topography and does not include any Project features that would result in soil erosion or loss of topsoil. Therefore, the impact is ***less than significant***.

Mitigation Measures: None are required.

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

d. Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?

Less than Significant Impact. The City of Huron sits on top of the alluvial soils of the Quaternary period,[20] with the predominant soils on the proposed Project site being Westhaven loam and Excelsior, sandy substratum- Westhaven association. These soils are characterized as moderately deep, well-drained, and with low shrink/swell potential.

According to the City's current WDR (paragraph 13), a geotechnical report was prepared characterizing soils underlying the WWTF. The report presents the results of sieve and hydrometer tests for samples collected at the depth of pond bottoms, and field percolation rates at the same depths. Soils in the upper 15 feet were characterized as either sandy or silty clay. Percolation test results ranged from 28 minutes per inch beneath Pond 1 to 363 minutes per inch beneath Pond 12 with an average of 87 minutes per inch.

Loam soils (such as those covering the reclamation area) are often best suited for irrigated crop production because they contain intermediate percentages of sand, silt and clay with adequate rooting depth and water holding / nutrient retention capacities.[21] These soils will support the cultivation of alfalfa and are adequate to accept the volume of City's treated effluent that is needed to grow the alfalfa and to remove nitrogen at a rate that will not contribute to groundwater contamination. Shortly after the application of recycled water to the reclamation areas, several conversion processes take place in the soil converting organic nitrogen and/or ammonium to nitrate. As a result of this process, the nitrogen will be converted and will be available to the alfalfa plant during growing season. The rates of these processes are primarily dependent upon temperature, irrigation application amounts, soil aeration, soil type and the level of organic matter. Section 6.1.1 of the Feasibility Report provides a full analysis of soils, water balance and nitrogen removal.

The impact is ***less than significant.***

Mitigation Measures: None are required.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

[20] Natural Resources Conservation Service. Soil Survey of Fresno County California, Western Part. Page 13.

http://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/CA653/0/fresno.pdf

[21] Soil, Water and Crop Production Considerations in Municipal Wastewater Applications to Forage Crops. (Poole, Sanden, Hays)

No Impact. The Project does not include the construction, replacement, or disturbance of septic tanks or alternative wastewater disposal systems. Therefore, there is ***no impact.***

Mitigation Measures: None are required.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation. There are no unique geologic features in the Project vicinity. Although there are no knows paleontological resources located in the project area, site development does have the potential to directly or indirectly destroy an unknown paleontological resource. Mitigation measures CUL-1 and CUL-2 are included to reduce any impacts to a less than significant level.

Mitigation Measures: CUL-1 and CUL-2

VIII. GREENHOUSE GAS EMISSIONS

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

ENVIRONMENTAL SETTING

Various gases in the earth's atmosphere play an important role in moderating the earth's surface temperature. Solar radiation enters 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. GHGs are transparent to solar radiation but are effective in absorbing infrared radiation. Consequently, radiation that would otherwise escape back into space is retained, resulting in a warming of the earth's atmosphere. This phenomenon is known as the greenhouse effect. Scientific research to date indicates that some of the observed climate change is a result of increased GHG emissions associated with human activity. Among the GHGs contributing to the greenhouse effect are water vapor, carbon dioxide (CO_2), methane (CH_4), ozone, Nitrous Oxide (NO_x), and chlorofluorocarbons. Human-caused emissions of these GHGs in excess of natural ambient concentrations are considered responsible for enhancing the greenhouse effect. GHG emissions contributing to global climate change are attributable, in large part, to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Global climate change is, indeed, a global issue. GHGs are global pollutants, unlike criteria pollutants and TACs (which are pollutants of regional and/or local concern). Global climate change, if it occurs, could potentially affect water resources in California. Rising temperatures could be anticipated to result in sea-level rise (as polar ice caps melt) and possibly change the timing and amount of precipitation, which could alter water quality. According to some, climate change could result in more extreme weather patterns; both heavier precipitation that could lead to flooding, as well as more extended drought periods. There is uncertainty regarding the timing, magnitude, and nature of the potential changes to water resources as a result of climate change; however, several trends are evident.

Snowpack and snowmelt may also be affected by climate change. Much of California's precipitation falls as snow in the Sierra Nevada and southern Cascades, and snowpack represents approximately 35 percent of the state's useable annual water supply. The snowmelt typically occurs from April through July; it provides natural water flow to streams and reservoirs after the annual rainy season has ended. As air temperatures increase due to climate change, the water stored in California's snowpack could be affected by increasing temperatures resulting in: (1) decreased snowfall, and (2) earlier snowmelt.

RESPONSES

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

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

Less Than Significant Impact. The U.S. Environmental Protection Agency published a rule for the mandatory reporting of greenhouse gases from sources that in general emit 25,000 metric tons or more of carbon dioxide (CO2e) per year. As shown in the modeling results (Appendix A), the Project will produce the following CO2e (effluent reclamation field emissions were generated by using operational emissions and adding them to 30-year amortized construction emissions):

Effluent Reclamation Field Conversion Emissions	25.63 MT/yr
Pipeline Installation Emissions	443.71 MT/yr
Total Project Construction Emissions	469.34 MT/yr

This represents less than one percent of the reporting threshold. As such, any impacts resulting from conflicting a GHG plan, policy, or regulation, or significantly impacting the environment as a result of project development is considered ***less than significant.***

Mitigation Measures: None are required.

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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

IX. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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

SETTING

Environmental

The proposed Project site is located in the easternmost portion of the City at the existing WWTP, and the land immediately to the north, which is in Fresno County.

The nearest residence is over 4,000 feet south of the proposed effluent reclamation field. The proposed Project site is approximately 12 miles southeast of the New Coalinga Municipal Airport while the Fresno-Yosemite International Airport is the closest regional airport, approximately 43 miles northwest. Chestnut Park is approximately 0.75 miles to the west and Chestnut High School is approximately 0.85 miles to the west.

US EPA

The primary federal agencies with responsibility for hazardous materials management include the EPA, U.S. Department of Labor Occupational Safety and Health Administration (OSHA), and the U.S. Department of Transportation (DOT). The Environmental Protection Agency (EPA) was created to protect human health and to safeguard the natural environment – air, water and land – and works closely with other federal agencies, and state and local governments to develop and enforce regulations under existing environmental laws. Where national standards are not met, EPA can issue sanctions and take other steps to assist the states in reaching the desired levels of environmental quality. EPA also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

State of California

The California Department of Industrial Relations, Division of Occupational Safety and Health is the administering agency designed to protect worker health and general facility safety. The California Department of Forestry and Fire Protection has designated the area that includes the proposed Project site as a Local Responsibility Area, defined as an area where the local fire jurisdiction is responsible for emergency fire response.

In addition, the proposed Project is being evaluated pursuant to CEQA.

RESPONSES

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

Less than Significant Impact. Proposed Project implementation would not result in any new chemicals or hazardous materials being used or stored onsite, nor would it result in the increase in volume of frequency of delivery of chemicals or hazardous materials to the site. The use, storage and transport of any chemicals onsite is part of existing plant operations, and constitute the existing environmental baseline condition. Any impacts would be ***less than significant.***

Mitigation Measures: None are required.

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

Less than Significant Impact With Mitigation. In 1980, the Metropolitan Water District of Southern California detected levels of asbestos waters in the upper Arroyo Pasajero Watershed along White Creek. Asbestos is found in soils of the Arroyo Pasajero alluvial fan, which historically spanned an area of 450 square miles, including the City of Huron and the surrounding agricultural lands. Human exposure to airborne asbestos fibers originating in the soils of the alluvial fan occurs when soils become dry and are disturbed by wind or mechanical actions. Based on review of available geologic maps for California, it does not appear that the area is situated within a region known to contain Naturally Occurring Asbestos.[22] The landowner (Bureau of Reclamation) is aware of the issue on this Project site and around the surrounding larger areas. The Bureau of Reclamation was contacted regarding the proposed Project

[22] San Luis Canal/Arroyo Pasajero Flood Control Improvement Project IS/MND. US Bureau of Reclamation (2004) pgs. 64-65.

and they indicated that they do not see the need for any further testing regarding asbestos. (Email correspondence with Chuck Halstead, U.S. Bureau of Reclamation 12/5/16). Although impacts are anticipated to be less than significant with regard to asbestos, the Project will be required to implement SJVAPCD Regulation VIII Control Measures (See Table 2 in the Air Quality Section). This regulation, a series of eight regulations, is designed to reduce PM_{10} emissions by reducing fugitive dust, however, it will also serve to reduce potential impacts from asbestos. Regulation VIII requires implementation of control measures to ensure that visible dust emissions are substantially reduced. In addition, the following measures will be enforced to further reduce potential impacts below significance levels:

HAZ-1. The Project will be required to implement the SJVAPCD Regulation VIII Control Measures to reduce visible dust. In addition, the Project will enforce the following dust control measures:

- Any visible track-out on a paved public road where vehicles exit the work site will be removed using a wet sweeping vacuum device at the end of the work day.
- Provide adequate watering of all active soil storage areas and trenches (for pipelines) to prevent dust from becoming airborne.
- Provide adequate watering of paved and unpaved roadways within the project site.
- During earthmoving activities, provide adequate watering of areas involving earthmoving prior to, during and after activities to prevent dust from becoming airborne.
- Implement other watering strategies as necessary on and around the project site to ensure that dust does not become airborne.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. No schools are located within 0.25 mile of the Project site. Chestnut High School is the nearest school at approximately 0.85 miles west of the WWTP. This condition precludes the possibility of activities associated with the proposed Project exposing schools within a 0.25-mile radius of the project site to hazardous materials. ***No impact*** would occur.

Mitigation Measures: None are required.

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

No Impact. The proposed Project site is not located on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5.[23] The nearest Department of Toxic Substances Control listed site is Huron Middle School, located on 4th Street, over a mile to the southwest of the proposed Project site. There are no hazardous materials sites that impact the Project. As such, ***no impacts*** would occur that would create a significant hazard to the public or the environment.

Mitigation Measures: None are required.

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. **T**he proposed Project site is approximately 12 miles southeast of the New Coalinga Municipal Airport and the airport's safety zones do not extend in to the City of Huron. There is ***no impact***.

Mitigation Measures: None are required.

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

No Impact. The proposed Project site will continue to be accessible via Palmer Avenue and the existing entrance to the WWTP. As such, the proposed Project will not interfere with any adopted emergency response or evacuation plan and there is ***no impact***.

Mitigation Measures: None are required.

g. 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?

[23] California Department of Toxic Substance Control. EnviroStor. http://www.envirostor.dtsc.ca.gov/public/mapfull.asp?global_id=&x=-119&y=37&zl=18&ms=640,480&mt=m&findaddress=True&city=Huron%20ca&zip=&county=&federal_superfund=true&state_response=true&voluntary_cleanup=true&school_cleanup=true&ca_site=true&tiered_permit=true&evaluation=true&military_evaluation=true&school_investigation=true&operating=true&post_closure=true&non_operating=true. Accessed June 2020.

No Impact. As the proposed Project site is the existing WWTP and the land immediately to the north, which will be converted to active agriculture, there are no wildlands on the Project site. There is ***no impact***.

Mitigation Measures: None are required.

X. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i. Result in substantial erosion or siltation on- or off- site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. impede or redirect flood flows?	☐	☐	☒	☐

X. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

SETTING

Environmental

The City of Huron has a dry climate with evaporation rates that exceed rainfall. Annual precipitation in the vicinity of the project sites is about 8 inches, about 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The principal drainage of the proposed Project vicinity is Los Gatos Creek (Arroyo Pasajero), the historic channel of which travels in an easterly direction is immediately north of the proposed Project site. Los Gatos Creek initiates in the Diablo Range, some 30 miles west of the site, at an elevation of approximately 3,000 feet. It originally terminated in a delta in the trough of the San Joaquin Valley, and together with the Kings River delta, formed a sill that marked the northern boundary of the historic Tulare Lake in very wet years. With the construction of the local segment of the California Aqueduct in 1967, Los Gatos Creek was intercepted, and floodwater spilled through agricultural land along the aqueduct's western embankment. The Bureau of Reclamation (BOR) began buying the affected agricultural properties, and in the mid-2000s constructed the Arroyo Pasajero Westside Detention Basin, which constrains the Los Gatos Creek floodwaters to an approximate 3,800 acre area extending along the west side of the aqueduct from Highway 198 to Gale Avenue. At Gale Avenue, south of the proposed Project site, a set of gates allow overflow to be pumped into the aqueduct, as needed.

RESPONSES

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less than Significant Impact. The Regional Water Quality Control Board (RWQCB), Central Valley Region, issued Waste Discharge Requirements (WDR) Order No. R5-2014-0163 to the City of Huron in December of 2014. Provision F.19 of that WDR requires the City to either reduce effluent nitrogen concentrations or otherwise demonstrate that disposal practices will not cause groundwater to contain concentrations of nitrate above the USEPA regulated maximum contaminate level (MCL). The City has determined that recycling treated effluent on newly developed agricultural land adjacent to the existing WWTP is the most beneficial use for their treated effluent, and that by irrigating approximately 417 acres of alfalfa fields, nitrate levels in the groundwater will resume to levels below EPA-determined maximum contaminate levels (MCLs). The City prepared a "Recycled Water Feasibility Report" which outlined and analyzed the existing hydrogeologic conditions, soil conditions, water supply and balance, effluent treatment process, nitrogen levels, and other relevant Project-related components and impacts. The results of the Report are summarized herein within the context of CEQA.

Water Quality:

The Project site is in the Westlands Hydrologic Area (No. 551.10) of the South Valley Floor Hydrologic Unit. There are no groundwater monitoring wells onsite and the SWRCB shows no groundwater monitoring wells installed in the City. Groundwater quality in the area generally contains high concentrations of calcium and magnesium sulfate. According to the City's WDR (paragraph 47), underlying groundwater quality is expected to be of poorer quality than the City's WWTP discharge. For example, WWTF effluent EC, which is indicative of overall salinity, averages about 1,100 umhos/cm compared to a groundwater EC likely above 2,000 umhos/cm. While groundwater data is limited (and was gathered from 29 wells within 3 miles of the Project site), it appears to indicate that first encountered groundwater contains low concentrations of nitrate, below the maximum amounts allowed as nitrogen. Only 3 of the 29 wells were installed above the Corcoran Clay (at depths of 301 ft., 200 ft., and 151 feet).

The City conducts periodic sampling of the water quality from the City's raw water source, the California Aqueduct, and from Water Treatment Plant No. 2. The City's water supply is tested for many constituents as required by state and federal regulations and distributes a Consumer Confidence Report on a yearly basis. According to the July 16, 2015 survey, the City's water system has a history of color

and iron levels above the state mandated maximum control levels.[24] The City is in the process of upgrading the existing water treatment process, which will enable them to effectively remove contaminants from the water supply.

One of the goals of the project is to use the treated effluent to irrigate crops that can uptake the nitrogen and prevent it from reaching the groundwater. Lining of the existing ponds will also reduce impacts to groundwater.

Wastewater Characteristics:

The WWTP effluent discharge is regulated by the RWQCB WDR Order which prescribes requirements for the WWTP and limits the wastewater flow to no more than 1.0 MGD for the City of Huron. Currently, the treated effluent is disposed to ponding basins where it either evaporates or percolates. Solids are then transported to facilities permitted to receive such waste. The wastewater characteristics are included in the City's WDR. The current treatment process is not designed to provide nitrogen removal and does not provide any beneficial reuse of the treated effluent. The proposed Project is intended to assist in the removal of nitrogen and to provide a beneficial reuse of treated effluent.

Water Balance:

Effluent will be applied to the reclamation area during periods when alfalfa is being grown/harvested. When effluent is not needed for the crops or otherwise is not discharged to the reclamation area, it will continue to be stored in the lined storage ponds.

The application of recycled water to forage crops is an efficient way to reuse waste and conserve valuable surface and groundwater resources. However, recycled water can contain high levels of nitrogen that can be detrimental to groundwater if it is not carefully applied. Monitoring of the amounts of reclaimed effluent applied to the effluent reclamation field will be required to ensure that adequate nitrogen removal is achieved through the growing of the alfalfa. Excess amounts will be retained in the existing ponds (which are lined).

Monitoring and Compliance:

The City's WDR includes a Monitoring and Reporting Program (R5-2014-0163) which requires various analytical procedures, field tests and other methods of monitoring to determine if there are variations in the magnitude of constituent concentrations or parameters. These include monitoring of influent,

[24] City of Huron – Recycled Water Feasibility Report. (Sept. 2016), page 12.

effluent, ponds, source water and biosolids/sludge. Reports are submitted quarterly to the Central Valley Water Board. The WDR also includes provisions for compliance with the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan), which designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. The project design engineers have developed this Project to comply with the Basin Plan and Antidegradation Policies developed by the State Water Board. The antidegradation policies include:

a. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;
b. The degradation will not unreasonably affect present and anticipated future beneficial uses;
c. The discharger employs Best Practicable Treatment or Control (BPTC) to minimize degradation; and,
d. The degradation is consistent with the maximum benefit to the people of the state.

Implementation of the proposed Project will facilitate compliance with the WWTP's Waste Discharge Requirements, Basin Plan and antidegradation policies, and as such, any impacts would be ***less than significant***.

Mitigation Measures: None are required.

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

Less Than Significant Impact. The proposed Project includes converting approximately 417 acres of undisturbed land into effluent reclamation fields, which will recharge treated effluent from the WWTP. The Project will not increase the use of groundwater supplies or impede a sustainable groundwater management plan. Conversely, the Project will utilize previously unavailable wastewater for the proposed alfalfa crops, thus providing a beneficial use. Any impacts would be ***less than significant***.

Mitigation Measures: None are required.

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

i. result in substantial erosion or siltation on- or offsite;

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

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

iv. impede or redirect flood flows?

Less Than Significant Impact. No facilities are being proposed that would substantially alter the existing drainage pattern of the area. Small structures such as pumps, or other minor facilities will be included in the proposed reclamation area of the Project, however, these structures will not significantly impede flood flows through the site. Design considerations have been made and will be incorporated into grading plans. As described earlier, the reclamation area is currently located in a flood area surrounded by levees and will require minimal grading and other dirt movement activities that will not modify existing drainage conditions significantly. To accommodate 100-year flood conditions, the Project has incorporated various design features that will reduce flood/drainage impacts to a less than significant level. During wet years, when the reclamation areas may be temporarily flooded, treated wastewater flows will be stored until flood waters recede. Currently, 8 feet tall flood control levees surround the reclamation area to the south and levees around the existing percolation ponds have been constructed well above the base flood elevation. Proper site drainage and erosion control, as described herein, will be put into place to further reduce potential impacts of severe storms.

Additionally, as required by the Clean Water Act, construction of the proposed improvements would require an approved Stormwater Pollution Prevention Plan (SWPPP) that includes best management practices for grading and preservation of topsoil. The City or contractor is required to submit the SWPPP with a Notice of Intent to the RWQCB to obtain a General Permit. Any impacts would be ***less than significant.***

Mitigation Measures: None are required.

d. In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. There are no inland water bodies that could be potentially susceptible to a seiche in the Project vicinity. This precludes the possibility of a seiche inundating the Project site. The Project site is more than 100 miles from the Pacific Ocean, a condition that precludes the possibility of inundation by tsunami. There are no steep slopes that would be susceptible to a mudflow in the Project vicinity, nor are there any volcanically active features that could produce a mudflow in the City of Huron. This precludes the possibility of a mudflow inundating the Project site. Additionally, the Project will not conflict with any water quality control plans or sustainable groundwater management plan. There will be ***a less than significant impact*** associated with Project implementation.

Mitigation Measures: None are required.

XI. LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

SETTING

Environmental

The existing WWTP is located in the easternmost part of the City of Huron and the land immediately north is owned by the Bureau of Reclamation in Fresno County. See Figure 2 – Site Map. The WWTP site is designated as public facilities by the City of Huron and the land immediately north is designated as AE-20 by Fresno County.

RESPONSES

a. Physically divide an established community?

No Impact. The proposed Project is located within the eastern portion of the City of Huron. The construction and continued operation of the WWTP would not cause any land use changes in the surrounding vicinity nor would it divide an established community. ***No impacts*** would occur as a result of Project implementation.

Mitigation Measures: None are required.

b. 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?

No Impact. The proposed Project involves improvements at the existing WWTP and the approximately 417 acres immediately north of the plant. The land to the north will be converted to agricultural effluent reclamation fields which is allowable within the AE-20 zone district. There are ***no impacts.***

Mitigation Measures: None are required.

XII. MINERAL RESOURCES

Would the project:

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

SETTING

Environmental

Fresno County has been a leading producer of minerals because of the abundance and wide variety of mineral resources that are present in the County. Extracted resources include aggregate products (sand and gravel), fossil fuels (oil and coal), metals (chromite, copper, gold, mercury, and tungsten), and other minerals used in construction or industrial applications (asbestos, high-grade clay, diatomite, granite, gypsum, and limestone). Aggregate and petroleum are considered the County's most significant extractive mineral resources. No mineral resource locations are within the vicinity of the City of Huron.[25]

RESPONSES

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? OR

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

No Impact. There are no known mineral resources in the proposed Project area and the site is not included in a State classified mineral resource zones. Therefore, there is ***no impact***.

[25] Fresno County General Plan Background Report. Adopted 2000. Page 7-66. Accessed July, 2020. http://www.co.fresno.ca.us/viewdocument.aspx?id=5696

Mitigation Measures: None are required.

XIII. NOISE

Would the project:

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

SETTING

Environmental

The proposed Project site is located in the eastern part of the City of Huron and the existing WWTP and the land immediately north of the site in Fresno County. See Figure 2 – Site Map. The site is surrounded by rural residences, active agriculture, and undisturbed land owned by the Bureau of Reclamation.

Federal Railway Administration

The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. The FRA has determined that ground vibrations from construction activities do not often reach the levels that can damage structures, but they can be within

the audible and perceptible ranges in buildings very close to the site[26]. The FTA has identified the human annoyance response to vibration levels as 80 RMS[27].

California Noise Control Act

The California Noise Control Act was enacted in 1973 (Health and Safety Code § 46010 et seq.), and states that the Office of Noise Control (ONC) should provide assistance to local communities in developing local noise control programs. It also indicates that ONC staff will 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.

In addition, this proposed Project is being evaluated pursuant to CEQA.

Fresno County

Measuring and reporting noise levels involves accounting for variations in sensitivity to noise during the daytime versus nighttime hours. Noise descriptors used for analysis need to factor in human sensitivity to nighttime noise when background noise levels are generally lower than in the daytime and outside noise intrusions are more noticeable. Common descriptors include the Community Noise Equivalent Level (CNEL) and the Day-Night Average Level (Ldn). Both reflect noise exposure over an average day with weighting to reflect the increased sensitivity to noise during the evening and night. The two descriptors are roughly equivalent. The CNEL descriptor is used in relation to major continuous noise sources, such as aircraft or traffic, and is the reference level for the Noise Element under State planning law.

RESPONSES

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

[26] U.S. Federal Railroad Administration. High Speed Ground Transportation Noise and Vibration Impact Assessment. Final Report No. DOT/FRA/ORD-12/15. September 2012. Page 10-11.

[27] U.S. Federal Transit Administration. Transit Noise and Vibration Impact Assessment. Final Report No. FTA-VA-90-1003 prepared by Harris Miller Miller & Hanson Inc., May 2006. Page 7-5. http://www.rtd-fastracks.com/media/uploads/nm/14_Section_38_NoiseandVibration_Part3.pdf. Accessed June 2020.

Less than Significant Impact. Improvements at the WWTP and pipeline installation will not generate noise. The land immediately to the north to be converted to an effluent reclamation field will generate extremely low amounts of noise, typically generated by agricultural maintenance activities and harvest. Once constructed, noise levels generated during normal operation would not exceed applicable noise standards established in the Fresno County Municipal Code.

Neither the City of Huron Municipal Code nor the Fresno County Municipal Code identifies a short-term, construction-noise-level threshold. The distinction between short-term construction noise impacts and long-term operational noise impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are to be expected from time to time in urban environments. Most residents of urban areas recognize this reality and expect to hear construction activities on occasion. As the construction period will only last for period of 12 months, and construction hours would be limited to those established in the City's Municipal Code, any impacts would be ***less than significant***.

Mitigation Measures: None are required.

b. Generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact. Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. Construction associated with the proposed Project is earthmoving activities associated with site grading, installing pipelines, installing perimeter fencing and installing a perimeter roadway.

The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day[28]. Table 6 describes the typical construction equipment vibration levels.

[28] Transit Noise and Vibration Impact Assessment. Final Report No. FTA-VA-90-1003 prepared for the U.S. Federal Transit Administration by Harris Miller Miller & Hanson Inc., May 2006. Page 7-5. http://www.rtd-fastracks.com/media/uploads/nm/14_Section_38_NoiseandVibration_Part3.pdf. Accessed June 2020.

Table 6
Typical Construction Vibration Levels

Equipment	VdB at 25 ft
Small Bulldozer	58
Jackhammer	79

Vibration from construction activities will be temporary and not exceed the Federal Transit Authority threshold for the nearest residence which is located over 4,000 feet south of the proposed effluent reclamation field. The impact will be ***less than significant***.

Mitigation Measures: None are required.

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

No Impact. The Project is not located within an airport land use plan, nor is it within two miles of a public airport or public use airport. Therefore, there is ***no impact***.

Mitigation Measures: None are required.

XIV. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a. Induce substantial 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 housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

SETTING

Environmental

The City of Huron's primary industry is agriculture, but there is sufficient labor force in the area to support many other types of industries, including manufacturing. Huron's population has shown a slow pattern of growth since 2010. The population in 2010 was 6,754 while the current population is at 6,914.[29] The City of Huron has 1,620 households with an average of 4.47 people per household.

RESPONSES

a. 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)?

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

No Impact. The proposed Project is in response to Waste Discharge Requirements issued by the Regional Water Quality Control Board, requiring the City of either reduce effluent nitrogen concentrations or be

[29] State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State – Januay 1, 2011- 2015. Sacramento, California, May 2015. http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php. Accessed June 2020.

able to demonstrate that disposal practices would not cause groundwater nitrate levels to be above maximum contaminate levels (MCL). Proposed Project implementation would reduce groundwater nitrogen concentrations to below MCL's. The existing WWTP capacity would not expand with Project implementation. As such, the proposed Project would not directly or indirectly induce population growth. The proposed Project will take place at the existing WWTP and the undeveloped land immediately north and northwest of the existing reclamation area. It would not result in the displacement of housing or people. There is ***no impact***.

Mitigation Measures: None are required.

XV. PUBLIC SERVICES

Would the project:

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

SETTING

Environmental

The existing WWTP site is protected by the City of Huron Police Department, which is located at 36389 Lassen Avenue, approximately one mile southwest of the proposed Project site. The proposed effluent disposal site is within the jurisdiction of the Fresno County Sheriff's Department. The Fresno County Fire Protection District provides fire protection to the City of Huron, along with the majority of Fresno County. The City of Huron is overseen by Battalion 14 with a fire station within the City at 36421 S. Lassen Avenue, approximately one mile southwest of the proposed Project site. Chestnut Park is approximately 0.75 miles to the west and Chestnut High School is approximately 0.85 miles to the west.

California Fire Code and Building Code

The 2007 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety and assistance to fire fighters and emergency responders during emergency operations. The provision of the Fire Code includes regulations regarding fire-resistance rated construction, fire protection systems such as alarm and sprinkler systems, fire service features such as fire apparatus access roads, fire safety during construction and demolition, and wildland urban interface areas.

RESPONSES

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

Fire protection?

No Impact. The proposed Project would improve the existing WWTP and convert approximately 188 acres of undeveloped land into an effluent reclamation field for the application of treated wastewater. The proposed Project would not directly or indirectly induce population growth and no impact would occur. There is ***no impact.***

Police Protection?

No Impact. The proposed Project will continue to be served by the City of Huron police department and the Fresno County Sheriff's Department. No additional police personnel or equipment is anticipated. There is ***no impact.***

Schools, Parks, Other Public Facilities?

No Impact. The proposed Project would not increase the number of residents in the City, as the Project does not include residential units. Because the demand for schools, parks, and other public facilities is driven by population, the proposed Project would not increase demand for those services. As such, the proposed Project would result in ***no impacts.***

Mitigation Measures: None are required.

XVI. RECREATION

Would the project:

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

SETTING

Environmental

There are three parks within the City of Huron, Chestnut Park, Huron Community Parkand Keenan Park, approximately 0.75 miles east, 0.77 miles east and 1.45 miles southwest of the proposed Project site, respectively. These parks are managed by the Coalinga-Huron Recreation and Park District. The Coalinga-Huron Recreational District also operates and maintains a community center (Keenan Community Center) and a community recreational pool in the City.

RESPONSES

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

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

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

Mitigation Measures: None are required.

XVII. TRANSPORTATION/ TRAFFIC

Would the project:

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

SETTING

Environmental

The City of Huron is nine miles east of Interstate 5 (I-5) and three miles south of Highway 198. Lassen Avenue (Highway 269) runs north and south through the City providing easy access for local produce to major markets.

The proposed Project site is approximately 12 miles southeast of the New Coalinga Municipal Airport while the Fresno-Yosemite International Airport is the closest regional airport, approximately 43 miles northwest. The Railroad bisects the City and rail service is provided by the San Joaquin Valley Rail Road Company, who leases the rail line from the Union Pacific Railroad Company.

RESPONSES

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

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

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

d. Result in inadequate emergency access?

Less Than Significant Impact. The proposed Project would not cause a substantial increase in traffic, reduce the existing level of service, or create any additional congestion at any intersections. The proposed Project would require periodic maintenance, approximately two trips per day. As such, level of service standards would not be exceeded and the proposed Project would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system. In addition, no roadway design features are associated with the proposed Project that could interfere with existing emergency access. There is ***no impact***.

Mitigation Measures: None are required.

XVIII. TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
Would the project:				
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 a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☒	☐

RESPONSES

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

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

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

Less than Significant Impact. A Tribal Cultural Resource (TCR) is defined under Public Resources Code section 21074 as a site, feature, place, cultural landscape that is geographically defined in terms of size and scope, sacred place, and object with cultural value to a California Native American tribe that are either included and that is listed or eligible for inclusion in the California Register of Historic Resources or in a local register of historical resources, or if the City of Huron, acting as the Lead Agency, supported by substantial evidence, chooses at its discretion to treat the resource as a TCR. As discussed above, under Section V, Cultural Resources, criteria (b) and (d), no known archeological resources, ethnographic sites or Native American remains are located on the proposed Project site. As discussed under criterion (b) implementation of Mitigation Measure CUL-1 would reduce impacts to unknown archaeological deposits, including TCRs, to a less than significant level. As discussed under criterion (d), compliance with California Health and Safety Code Section 7050.5 would reduce the likelihood of disturbing or discovering human remains, including those of Native Americans.

The Native American Heritage Commission (NAHC) has performed a Sacred Lands File search for sites located on or near the Project site, with negative results. The NAHC also provided a consultation list of tribal governments with traditional lands or cultural places located within the project area. An opportunity has been provided to Native American tribes listed by the Native American Heritage Commission during the CEQA process as required by AB 52. Any impacts to TCR would be considered ***less than significant***.

Mitigation Measures: No additional measures are required.

XIX. UTILITIES AND SERVICE SYSTEMS

Would the project:

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

SETTING

Environmental

The proponent for the proposed Project is the City of Huron that has responsibility for providing water and wastewater services for the community. The proposed Project would not involve any construction or changes to stormwater drainage or solid waste management.

RESPONSES

a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact With Mitigation. The Project itself is the construction of new/expanded effluent disposal associated with the existing wastewater treatment facility and any environmental impacts resulting from the improvements are discussed within this document. No other facilities will require relocation or new construction as a result of Project implementation.

Mitigation Measures: The Project will require multiple mitigation measures as identified throughout this document.

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

No Impact. The proposed Project includes improving portions of the existing WWTP and converting approximately 417 acres of undisturbed land to an effluent reclamation field. The land would be planted in alfalfa irrigated with treated effluent from the WWTP. No new water supplies would be required as a result of this project. There is ***no impact.***

Mitigation Measures: None are required.

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

No Impact. The proposed Project includes improvements to the existing WWTP. There is ***no impact.***

Mitigation Measures: None are required.

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less than Significant Impact. Proposed Project construction and operation will generate minimal amounts of solid waste and will comply with all federal, state and local statues and regulations related to solid waste. Any impacts will be ***less than significant*.**

Mitigation Measures: None are required.

XX. WILDFIRE

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

ENVIRONMENTAL SETTING

The proposed Project site is located in the easternmost portion of the City at the existing WWTP, and the land immediately to the north, which is in Fresno County. The nearest residence is over 4,000 feet south of the proposed effluent reclamation field.

RESPONSES

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Less Than Significant. The City of Huron is over six miles northwest of the nearest State Responsibility Area and 15 miles northeast of the nearest Very High State Responsibility Area.[30] The City lies on the Valley floor and is surrounded by active agriculture, in various stages of production. Impacts associated with the improvements to the existing WWTP will be less than significant related to wildfires given the distance of the Project site from the State Responsibility Area and the State's Very High Fire Hazards Severity Zone and the intervening land uses between them. The proposed Project does not include any elements that would impair an adopted emergency plan as the site will only be accessible to WWTP workers.

As such, any wildfire risk to the project structures or people would be ***less than significant.***

Mitigation Measures: None are required.

[30] California Department of Forestry and Fire Protection. Fire Hazard Severity Zones Maps. Fresno County. https://osfm.fire.ca.gov/media/6449/fhszs_map10.jpg. Accessed July 2020.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:

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

RESPONSES

a. <u>Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of</u>

a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

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

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

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

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

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

LIST OF PREPARERS

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- David Whitley, Ph.D., RPA

Appendices

Appendix A

CalEEMod Output Files

Huron Effluent disposal entire project

San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	417.00	Acre	417.00	18,164,520.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2022
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - There's no demolition or building structures associated with the project. No need for architectural coatings.

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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					
2021	0.5202	5.2938	2.8508	5.2400e-003	2.3869	0.2670	2.6538	1.3037	0.2456	1.5494	0.0000	461.3963	461.3963	0.1418	0.0000	464.9403
2022	0.4753	4.9460	3.6829	7.8900e-003	2.0769	0.2123	2.2892	0.6788	0.1953	0.8741	0.0000	694.1589	694.1589	0.2166	0.0000	699.5740
2023	0.4440	4.4949	3.7297	8.3600e-003	1.8426	0.1854	2.0279	0.5499	0.1706	0.7204	0.0000	734.7054	734.7054	0.2299	0.0000	740.4518
2024	0.4331	4.2485	3.7090	8.4100e-003	1.8488	0.1751	2.0240	0.5532	0.1611	0.7144	0.0000	739.1646	739.1646	0.2315	0.0000	744.9521
2025	0.0477	0.4479	0.4300	1.0300e-003	1.1277	0.0181	1.1458	0.1650	0.0167	0.1816	0.0000	90.1378	90.1378	0.0283	0.0000	90.8444
Maximum	**0.5202**	**5.2938**	**3.7297**	**8.4100e-003**	**2.3869**	**0.2670**	**2.6538**	**1.3037**	**0.2456**	**1.5494**	**0.0000**	**739.1646**	**739.1646**	**0.2315**	**0.0000**	**744.9521**

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					
2021	0.5202	5.2938	2.8508	5.2400e-003	2.3869	0.2670	2.6538	1.3037	0.2456	1.5494	0.0000	461.3958	461.3958	0.1418	0.0000	464.9398
2022	0.4753	4.9460	3.6829	7.8900e-003	2.0769	0.2123	2.2892	0.6788	0.1953	0.8741	0.0000	694.1581	694.1581	0.2166	0.0000	699.5732
2023	0.4440	4.4949	3.7297	8.3600e-003	1.8426	0.1854	2.0279	0.5499	0.1706	0.7204	0.0000	734.7046	734.7046	0.2299	0.0000	740.4509
2024	0.4331	4.2485	3.7090	8.4100e-003	1.8488	0.1751	2.0240	0.5532	0.1611	0.7144	0.0000	739.1637	739.1637	0.2315	0.0000	744.9512
2025	0.0477	0.4479	0.4300	1.0300e-003	1.1277	0.0181	1.1458	0.1650	0.0167	0.1816	0.0000	90.1377	90.1377	0.0283	0.0000	90.8443
Maximum	**0.5202**	**5.2938**	**3.7297**	**8.4100e-003**	**2.3869**	**0.2670**	**2.6538**	**1.3037**	**0.2456**	**1.5494**	**0.0000**	**739.1637**	**739.1637**	**0.2315**	**0.0000**	**744.9512**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2021**	**3-31-2021**	1.4325	1.4325
2	**4-1-2021**	**6-30-2021**	1.4480	1.4480
3	**7-1-2021**	**9-30-2021**	1.4640	1.4640
4	**10-1-2021**	**12-31-2021**	1.4643	1.4643
5	**1-1-2022**	**3-31-2022**	1.2485	1.2485
6	**4-1-2022**	**6-30-2022**	1.3858	1.3858

7	**7-1-2022**	**9-30-2022**	1.4011	1.4011
8	**10-1-2022**	**12-31-2022**	1.4014	1.4014
9	**1-1-2023**	**3-31-2023**	1.2216	1.2216
10	**4-1-2023**	**6-30-2023**	1.2349	1.2349
11	**7-1-2023**	**9-30-2023**	1.2484	1.2484
12	**10-1-2023**	**12-31-2023**	1.2488	1.2488
13	**1-1-2024**	**3-31-2024**	1.1619	1.1619
14	**4-1-2024**	**6-30-2024**	1.1616	1.1616
15	**7-1-2024**	**9-30-2024**	1.1744	1.1744
16	**10-1-2024**	**12-31-2024**	1.1747	1.1747
17	**1-1-2025**	**3-31-2025**	0.4870	0.4870
		Highest	1.4643	1.4643

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	1.5534	4.0000e-005	3.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.4500e-003	7.4500e-003	2.0000e-005	0.0000	7.9400e-003
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5534**	**4.0000e-005**	**3.8400e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.4500e-003**	**7.4500e-003**	**2.0000e-005**	**0.0000**	**7.9400e-003**

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	1.5534	4.0000e-005	3.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.4500e-003	7.4500e-003	2.0000e-005	0.0000	7.9400e-003
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5534**	**4.0000e-005**	**3.8400e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.4500e-003**	**7.4500e-003**	**2.0000e-005**	**0.0000**	**7.9400e-003**

	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	Site Preparation	Site Preparation	1/1/2021	2/24/2022	5	300	
2	Grading	Grading	2/25/2022	2/13/2025	5	775	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1937.5

Acres of Paving: 417

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48

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
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

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					2.3577	0.0000	2.3577	1.2960	0.0000	1.2960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5074	5.2849	2.7606	4.9600e-003		0.2668	0.2668		0.2455	0.2455	0.0000	436.3361	436.3361	0.1411	0.0000	439.8641
Total	**0.5074**	**5.2849**	**2.7606**	**4.9600e-003**	**2.3577**	**0.2668**	**2.6245**	**1.2960**	**0.2455**	**1.5414**	**0.0000**	**436.3361**	**436.3361**	**0.1411**	**0.0000**	**439.8641**

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	0.0128	8.8900e-003	0.0902	2.8000e-004	0.0292	1.9000e-004	0.0294	7.7600e-003	1.8000e-004	7.9400e-003	0.0000	25.0602	25.0602	6.4000e-004	0.0000	25.0762
Total	**0.0128**	**8.8900e-003**	**0.0902**	**2.8000e-004**	**0.0292**	**1.9000e-004**	**0.0294**	**7.7600e-003**	**1.8000e-004**	**7.9400e-003**	**0.0000**	**25.0602**	**25.0602**	**6.4000e-004**	**0.0000**	**25.0762**

3.2 Site Preparation - 2021

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					2.3577	0.0000	2.3577	1.2960	0.0000	1.2960	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5074	5.2849	2.7606	4.9600e-003		0.2668	0.2668		0.2455	0.2455	0.0000	436.3356	436.3356	0.1411	0.0000	439.8636
Total	**0.5074**	**5.2849**	**2.7606**	**4.9600e-003**	**2.3577**	**0.2668**	**2.6245**	**1.2960**	**0.2455**	**1.5414**	**0.0000**	**436.3356**	**436.3356**	**0.1411**	**0.0000**	**439.8636**

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	0.0128	8.8900e-003	0.0902	2.8000e-004	0.0292	1.9000e-004	0.0294	7.7600e-003	1.8000e-004	7.9400e-003	0.0000	25.0602	25.0602	6.4000e-004	0.0000	25.0762
Total	**0.0128**	**8.8900e-003**	**0.0902**	**2.8000e-004**	**0.0292**	**1.9000e-004**	**0.0294**	**7.7600e-003**	**1.8000e-004**	**7.9400e-003**	**0.0000**	**25.0602**	**25.0602**	**6.4000e-004**	**0.0000**	**25.0762**

3.2 Site Preparation - 2022

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					0.3523	0.0000	0.3523	0.1937	0.0000	0.1937	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0618	0.6451	0.3841	7.4000e-004		0.0315	0.0315		0.0289	0.0289	0.0000	65.2068	65.2068	0.0211	0.0000	65.7340
Total	**0.0618**	**0.6451**	**0.3841**	**7.4000e-004**	**0.3523**	**0.0315**	**0.3837**	**0.1937**	**0.0289**	**0.2226**	**0.0000**	**65.2068**	**65.2068**	**0.0211**	**0.0000**	**65.7340**

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	1.7700e-003	1.1900e-003	0.0123	4.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.6107	3.6107	9.0000e-005	0.0000	3.6128
Total	**1.7700e-003**	**1.1900e-003**	**0.0123**	**4.0000e-005**	**4.3600e-003**	**3.0000e-005**	**4.3900e-003**	**1.1600e-003**	**3.0000e-005**	**1.1900e-003**	**0.0000**	**3.6107**	**3.6107**	**9.0000e-005**	**0.0000**	**3.6128**

3.2 Site Preparation - 2022

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					0.3523	0.0000	0.3523	0.1937	0.0000	0.1937	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0618	0.6451	0.3841	7.4000e-004		0.0315	0.0315		0.0289	0.0289	0.0000	65.2067	65.2067	0.0211	0.0000	65.7340
Total	**0.0618**	**0.6451**	**0.3841**	**7.4000e-004**	**0.3523**	**0.0315**	**0.3837**	**0.1937**	**0.0289**	**0.2226**	**0.0000**	**65.2067**	**65.2067**	**0.0211**	**0.0000**	**65.7340**

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	1.7700e-003	1.1900e-003	0.0123	4.0000e-005	4.3600e-003	3.0000e-005	4.3900e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.6107	3.6107	9.0000e-005	0.0000	3.6128
Total	**1.7700e-003**	**1.1900e-003**	**0.0123**	**4.0000e-005**	**4.3600e-003**	**3.0000e-005**	**4.3900e-003**	**1.1600e-003**	**3.0000e-005**	**1.1900e-003**	**0.0000**	**3.6107**	**3.6107**	**9.0000e-005**	**0.0000**	**3.6128**

3.3 Grading - 2022

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					1.6928	0.0000	1.6928	0.4767	0.0000	0.4767	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4005	4.2922	3.2091	6.8600e-003		0.1807	0.1807		0.1662	0.1662	0.0000	602.6073	602.6073	0.1949	0.0000	607.4797
Total	**0.4005**	**4.2922**	**3.2091**	**6.8600e-003**	**1.6928**	**0.1807**	**1.8735**	**0.4767**	**0.1662**	**0.6429**	**0.0000**	**602.6073**	**602.6073**	**0.1949**	**0.0000**	**607.4797**

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	0.0111	7.4700e-003	0.0774	2.5000e-004	0.0275	1.8000e-004	0.0277	7.3000e-003	1.6000e-004	7.4600e-003	0.0000	22.7340	22.7340	5.4000e-004	0.0000	22.7474
Total	**0.0111**	**7.4700e-003**	**0.0774**	**2.5000e-004**	**0.0275**	**1.8000e-004**	**0.0277**	**7.3000e-003**	**1.6000e-004**	**7.4600e-003**	**0.0000**	**22.7340**	**22.7340**	**5.4000e-004**	**0.0000**	**22.7474**

3.3 Grading - 2022

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					1.6928	0.0000	1.6928	0.4767	0.0000	0.4767	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4005	4.2922	3.2091	6.8600e-003		0.1807	0.1807		0.1662	0.1662	0.0000	602.6066	602.6066	0.1949	0.0000	607.4790
Total	**0.4005**	**4.2922**	**3.2091**	**6.8600e-003**	**1.6928**	**0.1807**	**1.8735**	**0.4767**	**0.1662**	**0.6429**	**0.0000**	**602.6066**	**602.6066**	**0.1949**	**0.0000**	**607.4790**

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	0.0111	7.4700e-003	0.0774	2.5000e-004	0.0275	1.8000e-004	0.0277	7.3000e-003	1.6000e-004	7.4600e-003	0.0000	22.7340	22.7340	5.4000e-004	0.0000	22.7474
Total	**0.0111**	**7.4700e-003**	**0.0774**	**2.5000e-004**	**0.0275**	**1.8000e-004**	**0.0277**	**7.3000e-003**	**1.6000e-004**	**7.4600e-003**	**0.0000**	**22.7340**	**22.7340**	**5.4000e-004**	**0.0000**	**22.7474**

3.3 Grading - 2023

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					1.8102	0.0000	1.8102	0.5413	0.0000	0.5413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4318	4.4870	3.6467	8.0700e-003		0.1852	0.1852		0.1704	0.1704	0.0000	708.9577	708.9577	0.2293	0.0000	714.6900
Total	**0.4318**	**4.4870**	**3.6467**	**8.0700e-003**	**1.8102**	**0.1852**	**1.9954**	**0.5413**	**0.1704**	**0.7116**	**0.0000**	**708.9577**	**708.9577**	**0.2293**	**0.0000**	**714.6900**

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	0.0122	7.8700e-003	0.0831	2.8000e-004	0.0323	2.0000e-004	0.0325	8.5900e-003	1.8000e-004	8.7700e-003	0.0000	25.7477	25.7477	5.6000e-004	0.0000	25.7618
Total	**0.0122**	**7.8700e-003**	**0.0831**	**2.8000e-004**	**0.0323**	**2.0000e-004**	**0.0325**	**8.5900e-003**	**1.8000e-004**	**8.7700e-003**	**0.0000**	**25.7477**	**25.7477**	**5.6000e-004**	**0.0000**	**25.7618**

3.3 Grading - 2023

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					1.8102	0.0000	1.8102	0.5413	0.0000	0.5413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4318	4.4870	3.6467	8.0700e-003		0.1852	0.1852		0.1704	0.1704	0.0000	708.9569	708.9569	0.2293	0.0000	714.6891
Total	**0.4318**	**4.4870**	**3.6467**	**8.0700e-003**	**1.8102**	**0.1852**	**1.9954**	**0.5413**	**0.1704**	**0.7116**	**0.0000**	**708.9569**	**708.9569**	**0.2293**	**0.0000**	**714.6891**

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	0.0122	7.8700e-003	0.0831	2.8000e-004	0.0323	2.0000e-004	0.0325	8.5900e-003	1.8000e-004	8.7700e-003	0.0000	25.7477	25.7477	5.6000e-004	0.0000	25.7618
Total	**0.0122**	**7.8700e-003**	**0.0831**	**2.8000e-004**	**0.0323**	**2.0000e-004**	**0.0325**	**8.5900e-003**	**1.8000e-004**	**8.7700e-003**	**0.0000**	**25.7477**	**25.7477**	**5.6000e-004**	**0.0000**	**25.7618**

3.3 Grading - 2024

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					1.8163	0.0000	1.8163	0.5446	0.0000	0.5446	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4216	4.2414	3.6317	8.1300e-003		0.1749	0.1749		0.1609	0.1609	0.0000	714.2058	714.2058	0.2310	0.0000	719.9805
Total	**0.4216**	**4.2414**	**3.6317**	**8.1300e-003**	**1.8163**	**0.1749**	**1.9912**	**0.5446**	**0.1609**	**0.7055**	**0.0000**	**714.2058**	**714.2058**	**0.2310**	**0.0000**	**719.9805**

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	0.0115	7.1300e-003	0.0773	2.8000e-004	0.0326	2.0000e-004	0.0328	8.6500e-003	1.8000e-004	8.8400e-003	0.0000	24.9588	24.9588	5.1000e-004	0.0000	24.9716
Total	**0.0115**	**7.1300e-003**	**0.0773**	**2.8000e-004**	**0.0326**	**2.0000e-004**	**0.0328**	**8.6500e-003**	**1.8000e-004**	**8.8400e-003**	**0.0000**	**24.9588**	**24.9588**	**5.1000e-004**	**0.0000**	**24.9716**

3.3 Grading - 2024

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					1.8163	0.0000	1.8163	0.5446	0.0000	0.5446	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4216	4.2414	3.6317	8.1300e-003		0.1749	0.1749		0.1609	0.1609	0.0000	714.2049	714.2049	0.2310	0.0000	719.9796
Total	**0.4216**	**4.2414**	**3.6317**	**8.1300e-003**	**1.8163**	**0.1749**	**1.9912**	**0.5446**	**0.1609**	**0.7055**	**0.0000**	**714.2049**	**714.2049**	**0.2310**	**0.0000**	**719.9796**

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	0.0115	7.1300e-003	0.0773	2.8000e-004	0.0326	2.0000e-004	0.0328	8.6500e-003	1.8000e-004	8.8400e-003	0.0000	24.9588	24.9588	5.1000e-004	0.0000	24.9716
Total	**0.0115**	**7.1300e-003**	**0.0773**	**2.8000e-004**	**0.0326**	**2.0000e-004**	**0.0328**	**8.6500e-003**	**1.8000e-004**	**8.8400e-003**	**0.0000**	**24.9588**	**24.9588**	**5.1000e-004**	**0.0000**	**24.9716**

3.3 Grading - 2025

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					1.1237	0.0000	1.1237	0.1639	0.0000	0.1639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0464	0.4471	0.4213	9.9000e-004		0.0181	0.0181		0.0167	0.0167	0.0000	87.2099	87.2099	0.0282	0.0000	87.9151
Total	**0.0464**	**0.4471**	**0.4213**	**9.9000e-004**	**1.1237**	**0.0181**	**1.1418**	**0.1639**	**0.0167**	**0.1805**	**0.0000**	**87.2099**	**87.2099**	**0.0282**	**0.0000**	**87.9151**

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	1.3200e-003	7.9000e-004	8.7100e-003	3.0000e-005	3.9800e-003	2.0000e-005	4.0000e-003	1.0600e-003	2.0000e-005	1.0800e-003	0.0000	2.9279	2.9279	6.0000e-005	0.0000	2.9293
Total	**1.3200e-003**	**7.9000e-004**	**8.7100e-003**	**3.0000e-005**	**3.9800e-003**	**2.0000e-005**	**4.0000e-003**	**1.0600e-003**	**2.0000e-005**	**1.0800e-003**	**0.0000**	**2.9279**	**2.9279**	**6.0000e-005**	**0.0000**	**2.9293**

3.3 Grading - 2025

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					1.1237	0.0000	1.1237	0.1639	0.0000	0.1639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0464	0.4471	0.4213	9.9000e-004		0.0181	0.0181		0.0167	0.0167	0.0000	87.2098	87.2098	0.0282	0.0000	87.9150
Total	**0.0464**	**0.4471**	**0.4213**	**9.9000e-004**	**1.1237**	**0.0181**	**1.1418**	**0.1639**	**0.0167**	**0.1805**	**0.0000**	**87.2098**	**87.2098**	**0.0282**	**0.0000**	**87.9150**

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	1.3200e-003	7.9000e-004	8.7100e-003	3.0000e-005	3.9800e-003	2.0000e-005	4.0000e-003	1.0600e-003	2.0000e-005	1.0800e-003	0.0000	2.9279	2.9279	6.0000e-005	0.0000	2.9293
Total	**1.3200e-003**	**7.9000e-004**	**8.7100e-003**	**3.0000e-005**	**3.9800e-003**	**2.0000e-005**	**4.0000e-003**	**1.0600e-003**	**2.0000e-005**	**1.0800e-003**	**0.0000**	**2.9279**	**2.9279**	**6.0000e-005**	**0.0000**	**2.9293**

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	0.0000	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Non-Asphalt Surfaces	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.511925	0.031902	0.170344	0.119204	0.018408	0.005097	0.021580	0.111258	0.001794	0.001564	0.005229	0.000954	0.000741

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Other Non-Asphalt Surfaces	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
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

	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					
Other Non-Asphalt Surfaces	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
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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	1.5534	4.0000e-005	3.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.4500e-003	7.4500e-003	2.0000e-005	0.0000	7.9400e-003
Unmitigated	1.5534	4.0000e-005	3.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.4500e-003	7.4500e-003	2.0000e-005	0.0000	7.9400e-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	tons/yr										MT/yr					
Architectural Coating	0.3789					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1742					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.6000e-004	4.0000e-005	3.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.4500e-003	7.4500e-003	2.0000e-005	0.0000	7.9400e-003
Total	**1.5534**	**4.0000e-005**	**3.8400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.4500e-003**	**7.4500e-003**	**2.0000e-005**	**0.0000**	**7.9400e-003**

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	0.3789					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1742					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.6000e-004	4.0000e-005	3.8400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.4500e-003	7.4500e-003	2.0000e-005	0.0000	7.9400e-003
Total	**1.5534**	**4.0000e-005**	**3.8400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.4500e-003**	**7.4500e-003**	**2.0000e-005**	**0.0000**	**7.9400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Biological Evaluation Report

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

CITY OF HURON ADDITIONAL EFFLUENT RECLAMATION AREA (PHASES 1 AND 2) BIOLOGICAL EVALUATION REPORT

By:

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Director of Ecological Services
Jeff Gurule, Senior Project Manager / Staff Ecologist

For:

Travis Crawford
Principal Environmental Planner
Crawford & Bowen Planning, Inc.
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July 23, 2020 Project No. 2023-03

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EXECUTIVE SUMMARY

The City of Huron proposes conversion of naturalized lands to alfalfa fields on a 428-acre property ("project site" or "site") that will enable treated effluent from the City's wastewater treatment plant (WWTP) to be reclaimed as agricultural irrigation water ("project"). The project consists of two phases (Phase 1 and Phase 2). Phase 2 of the project is expected to be completed many years into the future, if or when the City of Huron needs the additional disposal capacity. As such, a site plan has not yet been developed for Phase 2. The project site is located in western Fresno County, approximately ½ mile north of Huron city limits, within a block of natural land owned by the Bureau of Reclamation. Live Oak Associates, Inc. (LOA) conducted an investigation of the biotic resources of the project site, and assessed potential impacts to those resources pursuant to both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The site was surveyed on January 29, 30, and 31, 2020 for biotic habitats, the plants and animals occurring in those habitats, and significant habitat values that may be protected by state and federal law. The surveys also included a pedestrian transect burrow survey.

The project site consists of portions of the USBR-owned Arroyo Pasajero Westside Detention Basin. At the time of the field surveys, the site consisted of non-native grassland and valley saltbush scrub habitat suitable for a variety of flora and fauna. While a small section of shallow inundation occurred within a remnant agricultural ditch, this feature does not meet the current USACE definition of a water of the U.S., and the California Department of Fish and Wildlife and Regional Water Quality Control Board are also not expected to assert jurisdiction.

A separate assessment of impacts has been prepared for each project phase. Phase 1 of the project has the potential to result in construction mortality of the western spadefoot, San Joaquin kit fox, burrowing owl, American badger, six nesting special status bird species, and other migratory birds protected by state laws. Mortality of any of these animals would be considered a significant impact of the project under CEQA and NEPA. Project avoidance of active nests, dens, and roost sites identified during preconstruction surveys, relocation of individual animals, and implementation of minimization measures consistent with the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* will reduce the magnitude of these potential impacts to a less than significant level. Phase 1 of the project also has the potential to result in the degradation of downstream waters during construction, which will be mitigated through the implementation of a Storm Water Pollution Prevention Plan (SWPPP).

No other biological resources would be significantly impacted by Phase 1 of the project as defined by NEPA and CEQA. Impacts would be less than significant for all locally occurring special status plant species, 12 locally occurring special status animal species that would not be expected to occur on the project site, 5 special status animal species that would use the Phase 1 site for foraging only, wildlife movement corridors, designated critical habitat, waters of the State and U.S., and local policies and habitat conservation plans. The San Joaquin whipsnake and short-nosed kangaroo rat, both California Species of Special Concern, may occur on the Phase 1 site and be vulnerable to construction mortality, but the loss of a few individuals of these species is not expected to significantly impact local or regional populations. Loss of

habitat for special status animal species would not be considered a significant impact of Phase 1 of the project under NEPA and CEQA.

Phase 2 of the project will result in the conversion of approximately 231 acres of valley saltbush scrub, which is designated a Sensitive Natural Community. The conversion of valley saltbush scrub to alfalfa fields is considered a significant impact of the Phase 2 project. Preservation of offsite valley saltbush scrub at a 2:1 ratio through land purchase and conservation easement or purchase of conservation bank credits would reduce project impacts to Sensitive Natural Communities to a less than significant level. Phase 2 of the project also has the potential to result in construction mortality of the western spadefoot, San Joaquin kit fox, burrowing owl, short-nosed kangaroo rat, American badger, pallid bat, six nesting special status bird species, and other migratory birds protected by state laws. Mortality of any of these animals would be considered a significant impact of the project under CEQA and NEPA. Project avoidance of active nests, dens, and roost sites identified during preconstruction surveys; relocation of individual animals; implementation of minimization measures consistent with the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance*; and preservation of offsite valley saltbush scrub habitat supporting short-nosed kangaroo rat populations, should this species be found on the site during trapping surveys, will reduce the magnitude of these potential impacts to a less than significant level. Phase 2 of the project will also significantly impact many of the above species, along with the San Joaquin whipsnake, through loss of habitat; however, the preservation of offsite habitat to offset the loss of valley saltbush scrub, combined with perimeter fence design accommodations to maintain permeability for the kit fox and badger, would reduce impacts to these species' habitats to a less than significant level. Phase 2 of the project also has the potential to result in the degradation of downstream waters during construction, which will be mitigated through the implementation of a SWPPP.

No other biological resources would be significantly impacted by Phase 2 of the project as defined by NEPA and CEQA. Impacts would be less than significant for all locally occurring special status plant species, 12 locally occurring special status animal species that would not be expected to occur on the project site, 4 special status animal species that would use the site for foraging only, wildlife movement corridors, designated critical habitat, waters of the State and U.S., and local policies and habitat conservation plans. Although the San Joaquin whipsnake may occur on the site and be vulnerable to construction mortality, the loss of a few individuals of this species is not expected to significantly impact local or regional populations.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... **ii**

1.0 INTRODUCTION **1**

1.1 PROJECT DESCRIPTION 1
1.2 REPORT OBJECTIVES 6
1.3 STUDY METHODOLOGY 6

2.0 EXISTING CONDITIONS **8**

2.1 REGIONAL SETTING 8
2.2 PROJECT SITE 9
2.3 BIOTIC HABITATS 9
2.3.1 Valley Saltbush Scrub 9
2.3.2 Non-native Grassland 12
2.4 SPECIAL STATUS PLANTS AND ANIMALS 13
2.5 ENDANGERED, THREATENED, OR SPECIAL STATUS PLANT AND ANIMAL SPECIES MERITING FURTHER DISCUSSION 22
2.5.1 Western Spadefoot (*Spea hammondii*). Federal Listing Status: None; State Listing Status: Species of Special Concern 22
2.5.2 Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened. 23
2.5.3 Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern. 24
2.5.4 Short-nosed Kangaroo Rat (*Dipodomys nitratoides brevinasus*). Federal Listing Status: None; State Listing Status: Species of Special Concern 24
2.5.5 San Joaquin Kit Fox (*Vulpes macrotis mutica*). Federal Listing Status: Endangered; State Listing Status: Threatened. 25
2.6 JURISDICTIONAL WATERS 25
2.7 SENSITIVE NATURAL COMMUNITIES 25
2.8 WILDLIFE MOVEMENT CORRIDORS 26
2.9 DESIGNATED CRITICAL HABITAT 27

3.0 REGULATORY SETTING **28**

3.1 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) 28
3.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) 29
3.3 RELEVANT POLICIES AND LAWS 31
3.3.1 Threatened and Endangered Species 31
3.3.2 Migratory Birds 31
3.3.3 Birds of Prey 32
3.3.4 Bald and Golden Eagle Protection Act 32
3.3.5 Bats 32
3.3.6 Wetlands and Other Jurisdictional Waters 33

4.0 IMPACT ANALYSIS 37

4.1 POTENTIALLY SIGNIFICANT PROJECT EFFECTS OF PHASE 1 37
4.1.1 Western Spadefoot 37
4.1.2 Burrowing Owl 38
4.1.3 Swainson's Hawk 40
4.1.4 White-Tailed Kite, Long-Eared Owl, Short-Eared Owl, Northern Harrier, Loggerhead Shrike, and Other Nesting Migratory Birds and Raptors 41
4.1.5 San Joaquin Kit Fox 42
4.1.6 American Badger 44
4.1.7 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters 45
4.2 LESS THAN SIGNIFICANT PROJECT IMPACTS OF PHASE 1 46
4.2.1 Special Status Plant Species 46
4.2.2 San Joaquin Whipsnake 46
4.2.3 Short-nosed Kangaroo Rat 47
4.2.4 Special Status Animal Species Absent from, or Unlikely to Occur on, the Project Site 47
4.2.5 Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere 48
4.2.6 Wildlife Movement Corridors 48
4.2.7 Critical Habitat 48
4.2.8 Waters of the State and U.S. 49
4.2.9 Local Policies or Habitat Conservation Plans 49
4.3 POTENTIALLY SIGNIFICANT PROJECT EFFECTS OF PHASE 2 49
4.3.1 Disturbance to Sensitive Natural Communities and Other Sensitive Habitats 49
4.3.2 Western Spadefoot 50
4.3.3 San Joaquin Whipsnake 51
4.3.4 Short-nosed Kangaroo Rat 51
4.3.5 Burrowing Owl 52
4.3.6 Swainson's Hawk 54
4.3.7 White-Tailed Kite, Long-Eared Owl, Short-Eared Owl, Northern Harrier, Loggerhead Shrike, and Other Nesting Migratory Birds and Raptors 55
4.3.8 San Joaquin Kit Fox 56
4.3.9 American Badger 58
4.3.10 Pallid Bat 59
4.3.11 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters 60
4.4 LESS THAN SIGNIFICANT PROJECT IMPACTS OF PHASE 2 61
4.4.1 Special Status Plant Species 61
4.4.2 Special Status Animal Species Absent from, or Unlikely to Occur on, the Project Site 62
4.4.3 Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere 62
4.4.4 Wildlife Movement Corridors 63
4.4.5 Critical Habitat 63
4.4.6 Waters of the State and U.S. 63
4.4.7 Local Policies or Habitat Conservation Plans 63

LITERATURE REFERENCED OR CITED 64

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE 66

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE 69

APPENDIX C: SELECTED PHOTOGRAPHS OF THE PROJECT SITE 74

APPENDIX D: USFWS SPECIES LIST 79

APPENDIX E: SAN JOAQUIN KIT FOX HABITAT ANALYSIS REPORT 89

APPENDIX F: USFWS STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE 113

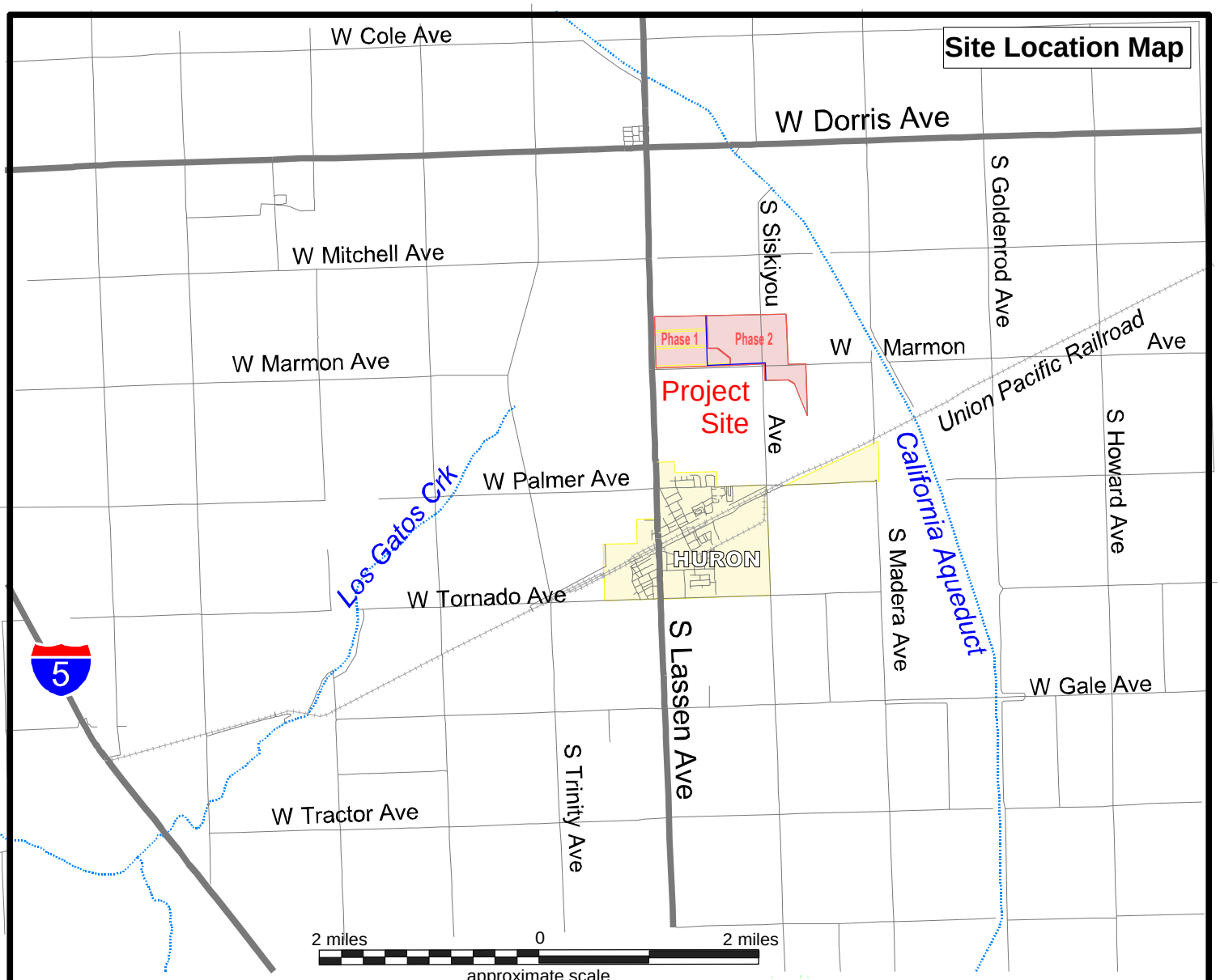
1.0 INTRODUCTION

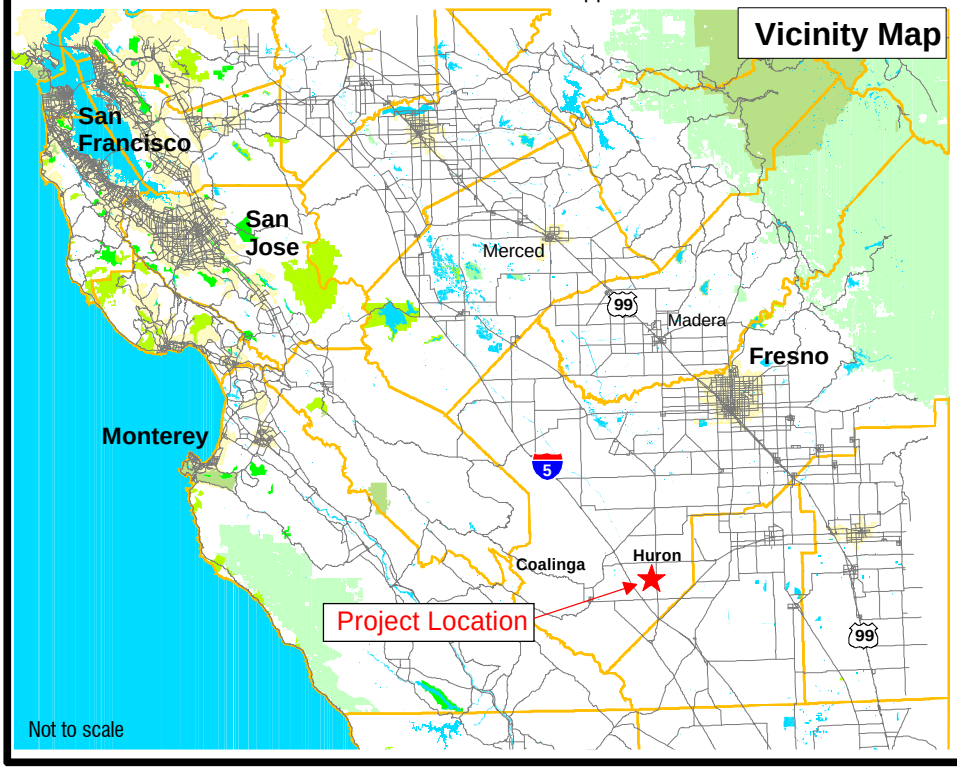
The City of Huron proposes improvements to a 428-acre property ("project site" or "site") that will enable treated effluent from the City's wastewater treatment plant (WWTP) to be used for agricultural irrigation ("project"). The following technical report, prepared by Live Oak Associates, Inc. (LOA) in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), describes the biotic resources of the project site, and evaluates potential impacts to those resources that could result from project development. The project site is located approximately ½ mile north of Huron city limits in western Fresno County (Figure 1), within a block of land owned by the Bureau of Reclamation (USBR). It can be found on the *Huron* U.S. Geological Survey (USGS) 7.5 minute quadrangle within Section 1 of Township 20 South, Range 17 East; and Sections 35 and 36 within Township 19 South, Range 17 East (Mt. Diablo Base and Meridian) (Figure 2).

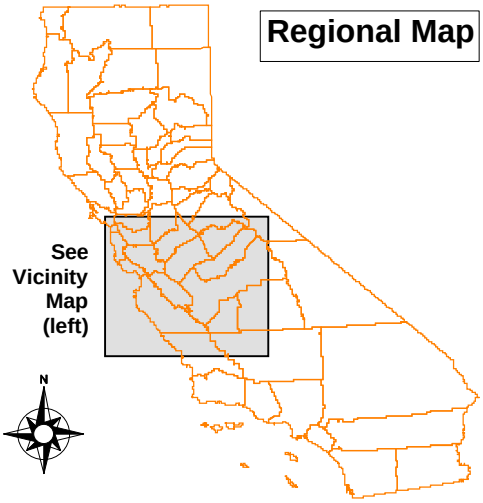
1.1 PROJECT DESCRIPTION

The two-phased project would convert approximately 408 acres of naturalized land to alfalfa fields, which would then be used for effluent disposal from the City's existing wastewater treatment plant (WWTP). Phase 1 of the project includes approximately 169 acres, 20 acres of which would be used to preserve existing grassland habitat within the Phase 1 development area (see discussion in *Biological Considerations* below). Phase 2 includes approximately 259 acres, and would only be implemented if and when the City of Huron determines there is adequate demand. The current project is in addition to a previously approved 200-acre effluent disposal project that is located immediately north of the WWTP and immediately south of the current project's Phase 2 (Figure 3).

In order to convey treated wastewater to the reclamation fields, improvements on existing land will be required, in addition to new facilities and a conveyance system. Additional facilities and improvement include grading, pump stations, diversion structures, a tailwater return pond, alfalfa valves, and new pipelines to convey treated effluent to the reclamation field. These project elements have been designed for Phase 1 but not for Phase 2, as it is presently unknown whether Phase 2 will be implemented. However, for both phases, the facilities and improvements would be generally as described below.



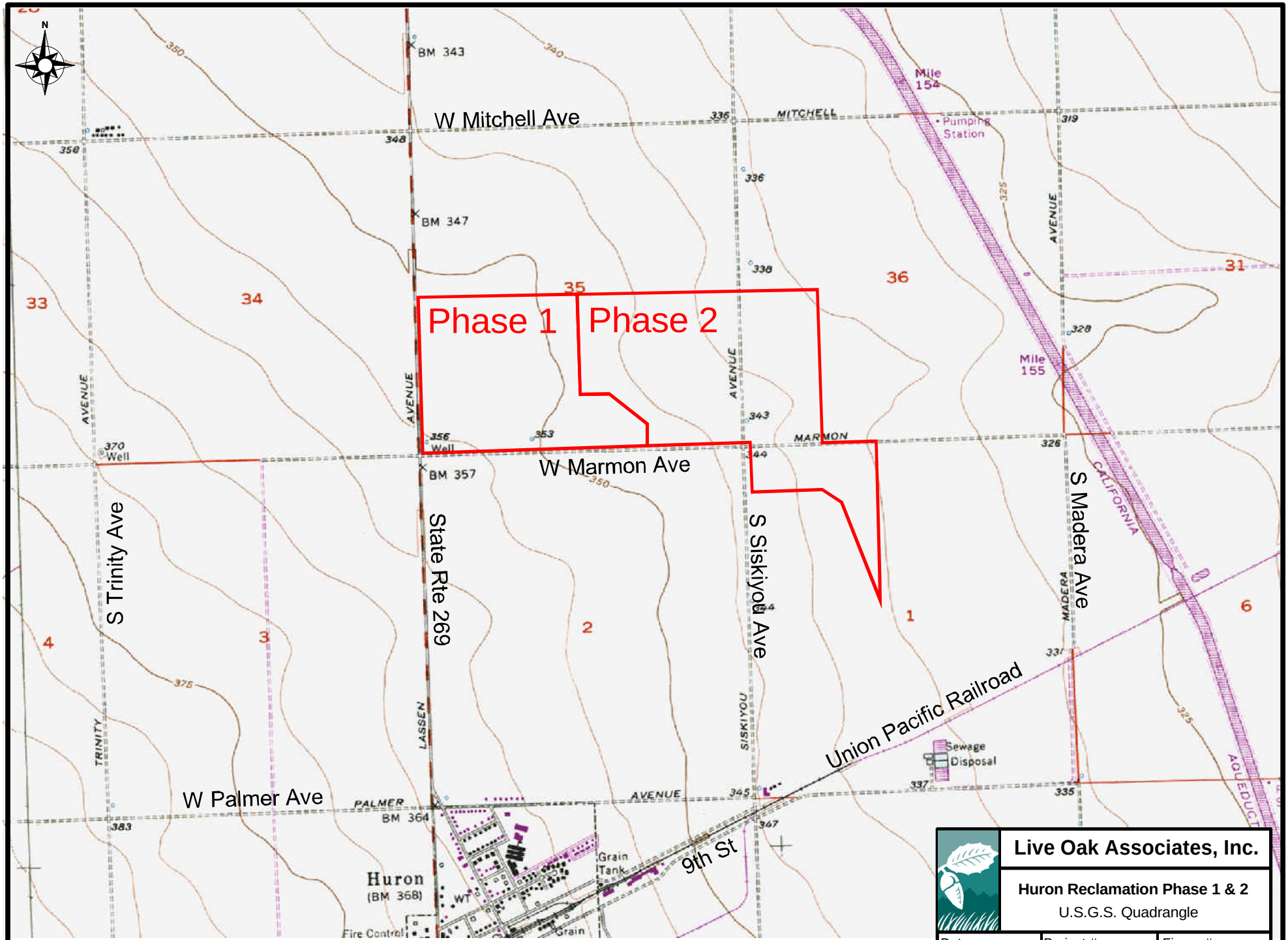




Live Oak Associates, Inc.

Huron Reclamation Phase 1 & 2
Site / Vicinity Map

Date	Project #	Figure #
5/05/2020	2023-03	1

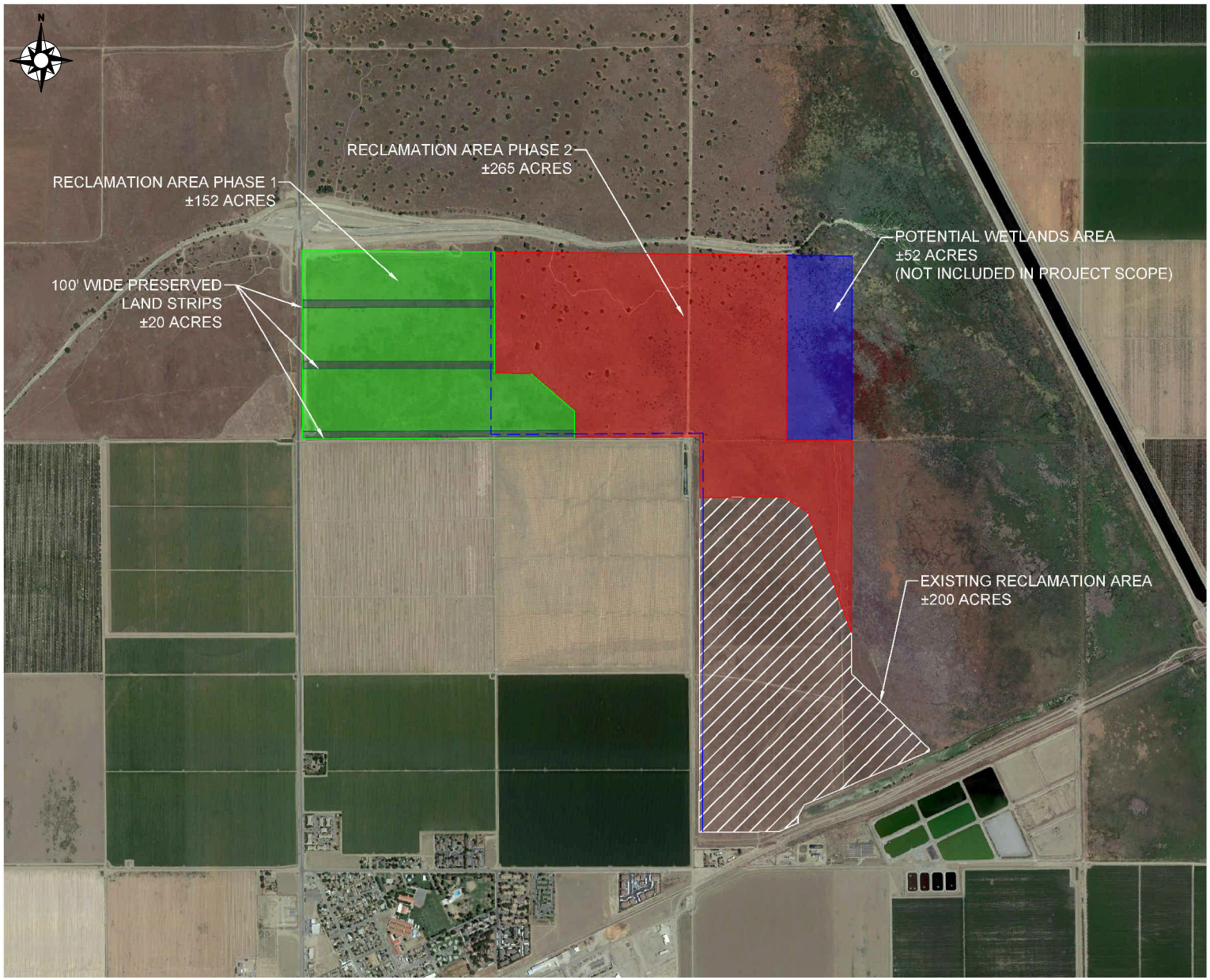


From USGS
Huron 7.5' Quadrangle 1971

Live Oak Associates, Inc.

Huron Reclamation Phase 1 & 2
U.S.G.S. Quadrangle

Date	Project #	Figure #
5/05/2020	2023-03	2



CITY OF HURON

ADDITIONAL EFFLUENT RECLAMATION AREA
(PHASE 1 AND PHASE 2)

LEGEND

EXISTING PIPELINE

PROPOSED PIPELINE

NORTH

SCALE IN FEET

0 1,000 FT

FIGURE 1
PROPOSED RECLAMATION AREAS
PHASE 1 AND PHASE 2

Live Oak Associates, Inc.

Huron Reclamation Phase 1 & 2
Site Plan

Date	Project #	Figure #
5/05/2020	2023-03	3

4,000' 0 2,000' 4,000 feet
approximate scale

AM Consulting Engineers • 5130 N. Sixth Street, Suite 12[illegible] • Fresno, California 93710 • (559) 173 [illegible]37

Pipeline Alignments

The proposed project includes approximately 6,280 linear feet of 21-inch diameter recycled water pipeline. The proposed pipeline will be connected to the 21-inch diameter recycled water line that lies on the 200-acre reclamation area that is currently being constructed (as of June 2020). The proposed pipeline will be constructed during Phase 1, but will serve both the Phase 1 and Phase 2 fields, assuming the latter is developed. All delivery and irrigation pipelines will be installed 3 feet underground.

Miscellaneous Improvements

Other miscellaneous improvements include the construction of perimeter fencing, access roads and signage. The access road will consist of a 16-feet wide, 4-inch thick aggregate base roadway around the perimeter of the reclamation field. A chain link fence, 4 feet tall, will also be placed along the perimeter to enclose the reclamation field and will be raised six inches off the ground so SJKF can pass through the site. Recycled water signs will be placed every 100-feet along the perimeter of the fence. The signs will be an aluminum plate that is 10 inches wide and 14 inches long. The signs will read “Recycled Water Do Not Drink” in both English and Spanish.

Biological Considerations (Phase 1 Only)

The Phase 1 field has been designed to include three (3) 100-foot-wide strips of undisturbed land configured in an east-west pattern and totaling approximately 20 acres (see Figure 3). The purpose of the strips of land is to provide undisturbed grassland habitat that would serve as denning/roosting/nesting habitat for burrowing owls (*Athene cunicularia*), American badgers (*Taxidea taxus*), San Joaquin kit fox (*Vulpes macrotis mutica*; SJKF), and short-nosed kangaroo rats (*Dipodomys nitratoides brevinasus*). Denning/roosting/nesting habitat interspersed through the alfalfa fields in this manner will also serve as foraging habitat for these species and facilitate increased use of the alfalfa for foraging. Another benefit the habitat strips will provide is connectivity between naturalized lands to the west and east. However, this benefit may be diminished if and when Phase 2 is developed east of Phase 1.

1.2 REPORT OBJECTIVES

Effluent reclamation projects such as that proposed by the City of Huron may damage or modify biotic habitats used by sensitive plant and animal species. In such cases, projects may be regulated by state or federal agencies, subject to provisions of CEQA and/or NEPA, and/or subject to local policies and ordinances. In the case of the proposed project, environmental review under both CEQA and NEPA are required.

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 site development.
- Identify and discuss project impacts to biological resources that may occur on the site within the context of CEQA and NEPA guidelines and relevant state and federal laws.
- Identify avoidance and mitigation measures that would reduce the magnitude of project impacts in a manner consistent with the requirements of CEQA and NEPA and that are generally consistent with recommendations of the resource agencies regulating affected biological resources.

1.3 STUDY METHODOLOGY

Reconnaissance-level field surveys of the project site were conducted on January 29, 30, and 31, 2020 by LOA staff ecologists Jeff Gurule, Anna Godinho, and Geoff Cline. The surveys consisted of walking transects spaced approximately 25 to 75 feet apart through the project site while identifying the principal land uses and biotic habitats of the site, identifying plant and animal species encountered, and assessing the suitability of the site's habitats for special status

species. Included in this survey effort was an inspection and mapping of every small mammal burrow within the project site in support of a kit fox habitat assessment requested by the USBR.

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 2020), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2020), and (3) manuals, reports, and references related to plants and animals of the San Joaquin Valley region.

LOA's field investigation did not include a wetland delineation. The field surveys were sufficient to generally describe those features of the site that could be subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and/or the Regional Water Quality Control Board (RWQCB).

2.0 EXISTING CONDITIONS

2.1 REGIONAL SETTING

The project site is located in the southern San Joaquin Valley of California. The valley is a large, nearly flat alluvial plain bordered by the Sierra Nevada to the east, the Tehachapi Mountains to the south, the California Coast Ranges to the west, and the Sacramento-San Joaquin Delta to the north.

Like most of California, the southern San Joaquin Valley experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 90 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely exceed 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation in the vicinity of the project sites is about 8 inches, about 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain.

The principal drainage of the project vicinity is Los Gatos Creek (Arroyo Pasajero), the historic channel of which travels in an easterly direction immediately north of the project site. Los Gatos Creek initiates in the Diablo Range, some 30 miles west of the site, at an elevation of approximately 3,000 feet. It originally terminated in a delta in the trough of the San Joaquin Valley, and together with the Kings River delta, formed a sill that marked the northern boundary of the historic Tulare Lake in very wet years. With the construction of the local segment of the California Aqueduct in 1967, Los Gatos Creek was intercepted, and floodwater spilled through agricultural land along the aqueduct's western embankment. The USBR began buying the affected agricultural properties, and in the mid-2000s constructed the Arroyo Pasajero Westside Detention Basin, which constrains the Los Gatos Creek floodwaters to an approximate 3,800 acre area extending along the west side of the aqueduct from just south of Highway 198 to Gale Avenue. At Gale Avenue, a set of gates allow overflow to be pumped into the aqueduct, as needed.

2.2 PROJECT SITE

At the time of the January 2020 field surveys, the project site consisted of vacant land managed as part of the Arroyo Pasajero Westside Detention Basin. Like the other lands of the detention basin, the site was in agricultural production prior to being purchased by the USBR. Historical aerial imagery indicates agricultural use of the entire project site through at least 1977. Images from 1992 show no agricultural use of the east half of the project site, with evidence of trees and shrubs becoming established in this area. The western half of the site remained in agricultural use until sometime in the early 2000's. The project site and detention basin, at large, now support naturalized habitats that represent an approximately 3,000-acre island of natural lands in an extensive matrix of agricultural uses. Other land uses in the project vicinity include industrial, rural residential and municipal developments.

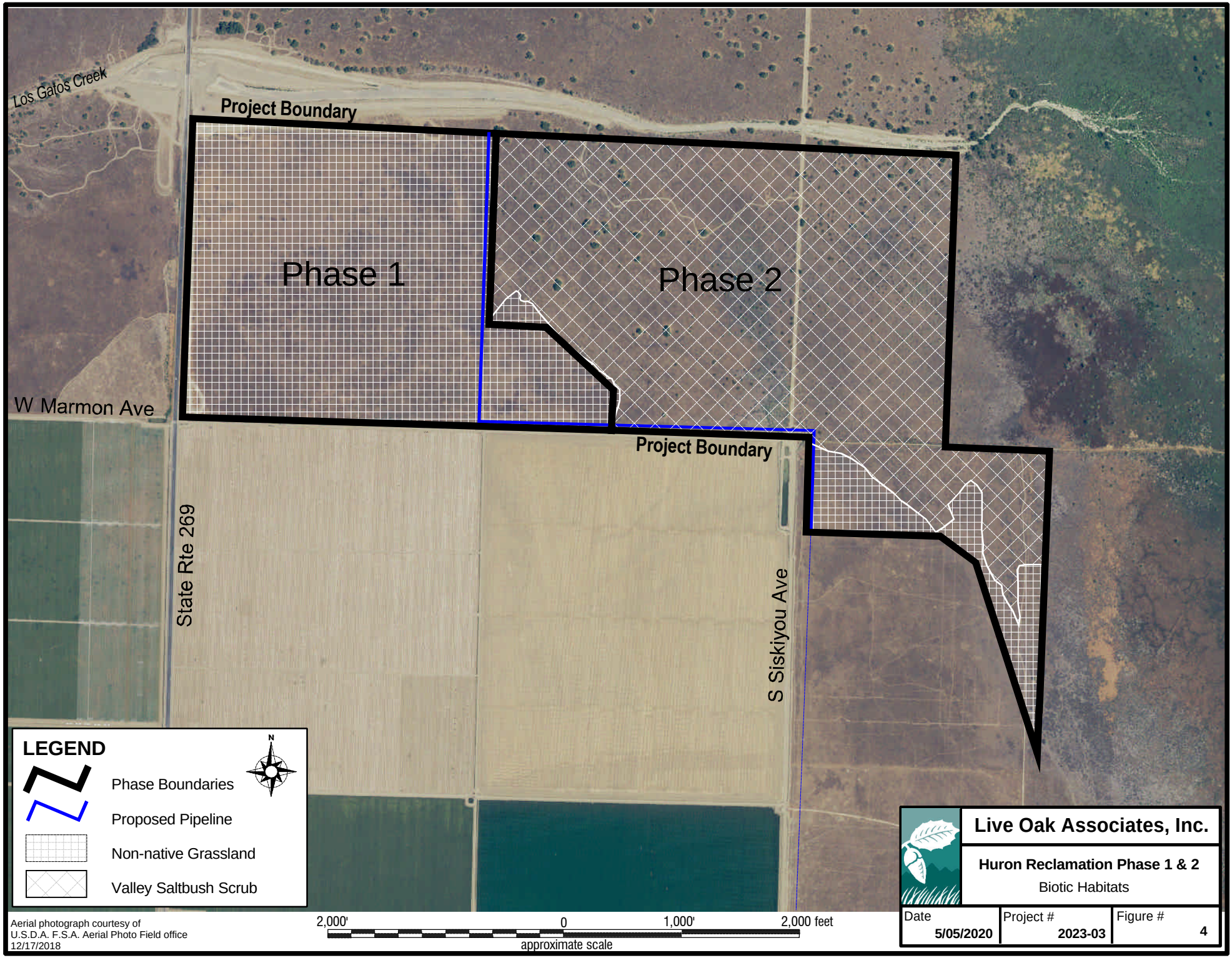
The topography of the site is nearly flat with elevations ranging from 345 feet National Geodetic Vertical Datum (NGVD) in the west to 329 feet NGVD in the southeast. Two soil-mapping units were identified within the project site: Excelsior, sandy substratum-westhaven association flooded, 0 to 2 percent slopes; and Westhaven loam, 0 to 2 percent slopes (California Soil Resource Lab, 2008). The properties of these soils do not support the formation of vernal pools and do not have unique characteristics that would support edaphic rare plant species. Furthermore, onsite soils have undergone prolonged disturbance due to decades of farming.

2.3 BIOTIC HABITATS

Two biotic habitats, valley saltbush scrub and non-native grassland, were observed on the project site during the January 2020 field surveys (Figure 4). 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.

2.3.1 Valley Saltbush Scrub

Valley saltbush scrub generally occurs in areas of undeveloped land within the San Joaquin Valley. On the project site this habitat has become naturalized in areas of the site left fallow for



Aerial photograph courtesy of
U.S.D.A. F.S.A. Aerial Photo Field office
12/17/2018

Live Oak Associates, Inc.

Huron Reclamation Phase 1 & 2

Biotic Habitats

Date	Project #	Figure #
5/05/2020	**2023-03**	**4**

decades. Valley saltbush scrub habitat occupies approximately 231 acres of the project site, all within the Phase 2 area. This vegetation community is characterized by plants adapted to limited rainfall and mostly sandy to sandy loam soils. The dominant shrubs observed in this vegetation community were allscale (*Atriplex polycarpa*) and big saltbush (*Atriplex lentiformis*). Other common native shrubs in this habitat were screwbean mesquite (*Prosopis pubescens*), bladderpod (*Peritoma arborea*), coyote brush (*Baccharis pilularis*), and mule fat (*Baccharis salicifolia*). A common non-native shrub in this area was tamarisk (*Tamarix ramosissima*). Two tree species, athel tamarisk (*Tamarix aphylla*) and Fremont cottonwood (*Populus fremontii*), were also found in this habitat. Annual grasses and forbs in this area included barnyard barley (*Hordeum murinum* spp. *leporinum*), red brome (*Bromus madritensis* ssp. *rubens*), red-stemmed filaree (*Erodium cicutarium*), fiddleneck (*Ansinckia sp*), and Russian thistle (*Salsola tragus*).

A remnant agricultural ditch occurs within the site's valley saltbush scrub habitat that was found to support a small amount of shallow surface water within a short stretch during the winter 2020 survey, but is expected to be dry for most of the year. The source of water originated from adjacent agricultural lands to the west but was separated from these lands by a levee with a gate at the head of the ditch.

The valley saltbush scrub observed on the site provides habitat for many native terrestrial vertebrate species. Amphibians expected in this habitat include the California toad (*Anaxyrus boreas halophilus*) (observed), western spadefoot toad (*Spea hammondii*), and Sierran treefrog (*Pseudacris sierra*), which, while not observed, could potentially breed in a section of the small ditch in this habitat. Reptiles expected in this habitat include the side-blotched lizard (*Uta stansburiana*) (observed), western whiptail (*Cnemidophorus tigris mundus*), northern Pacific rattlesnake (*Crotalus oreganus oreganus*), San Joaquin whipsnake (*Masticophis flagellum ruddocki*), gopher snake (*Pituophis melanoleucus*), and common kingsnake (*Lampropeltis getulus*).

Birds observed within the onsite valley saltbush scrub included the loggerhead shrike (*Lanius ludovicianus*), blue-gray gnatcatcher (*Polioptila caerulea*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), Say's phoebe

(*Sayornis saya*), house finch (*Haemorhous mexicanus*), and white-crowned sparrow (*Zonotrichia leucophrys*), among others. A number of raptor species were observed here, as well, and included the great-horned owl (*Bubo virginianus*), merlin (*Falco columbarius*), red-tailed hawk (*Buteo jamaicensis*), and northern harrier (*Circus hudsonius*).

Small mammal species potentially occurring in valley saltbush scrub habitat on the site include the Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi*), Heermann's kangaroo rat (*Dipodomys heermanni*), western harvest mouse (*Reithrodontomys megalotis*), deer mouse (*Peromyscus maniculatus*), southern grasshopper mouse (*Onychomys torridus*), and Audubon's cottontail (*Sylvilagus audubonii*). Rodent burrows were regularly observed in this habitat at the time of the field surveys. Evidence of mammalian predators utilizing this habitat on the site included American badger fresh burrows and diggings and coyote (*Canis latrans*) burrows, scat, and prints. Other predatory mammals likely occurring here include the raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*). A number of bat species are likely to forage on the site as well; however, roosting habitat is limited.

2.3.2 Non-native Grassland

At the time of the field surveys, non-native grassland habitat accounted for the entirety of the Phase 1 area and small portions of the Phase 2 area, encompassing approximately 198 acres of the overall project site. This habitat type was dominated by non-native grasses and forbs such as barnyard barley, red brome, rip-gut brome (*Bromus diandrus*), London rocket (*Sisymbrium irio*), red-stemmed filaree, fiddleneck, and Russian thistle.

The reptile and amphibian species expected in valley saltbush scrub habitats of the site could also potentially occur in grasslands of the site.

Avian use of the grassland would include year-round residents such as the horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*), winter migrants such as the savannah sparrow (*Passerculus sandwichensis*) and American pipit (*Anthus rubescens*), and summer migrants such as the western kingbird (*Tyrannus verticalis*); all but the western kingbird were observed during the field surveys. Red-tailed hawks, Swainson's hawks (*Buteo*

swainsoni), northern harriers, and American kestrels (*Falco sparverius*) are expected to forage over the grassland.

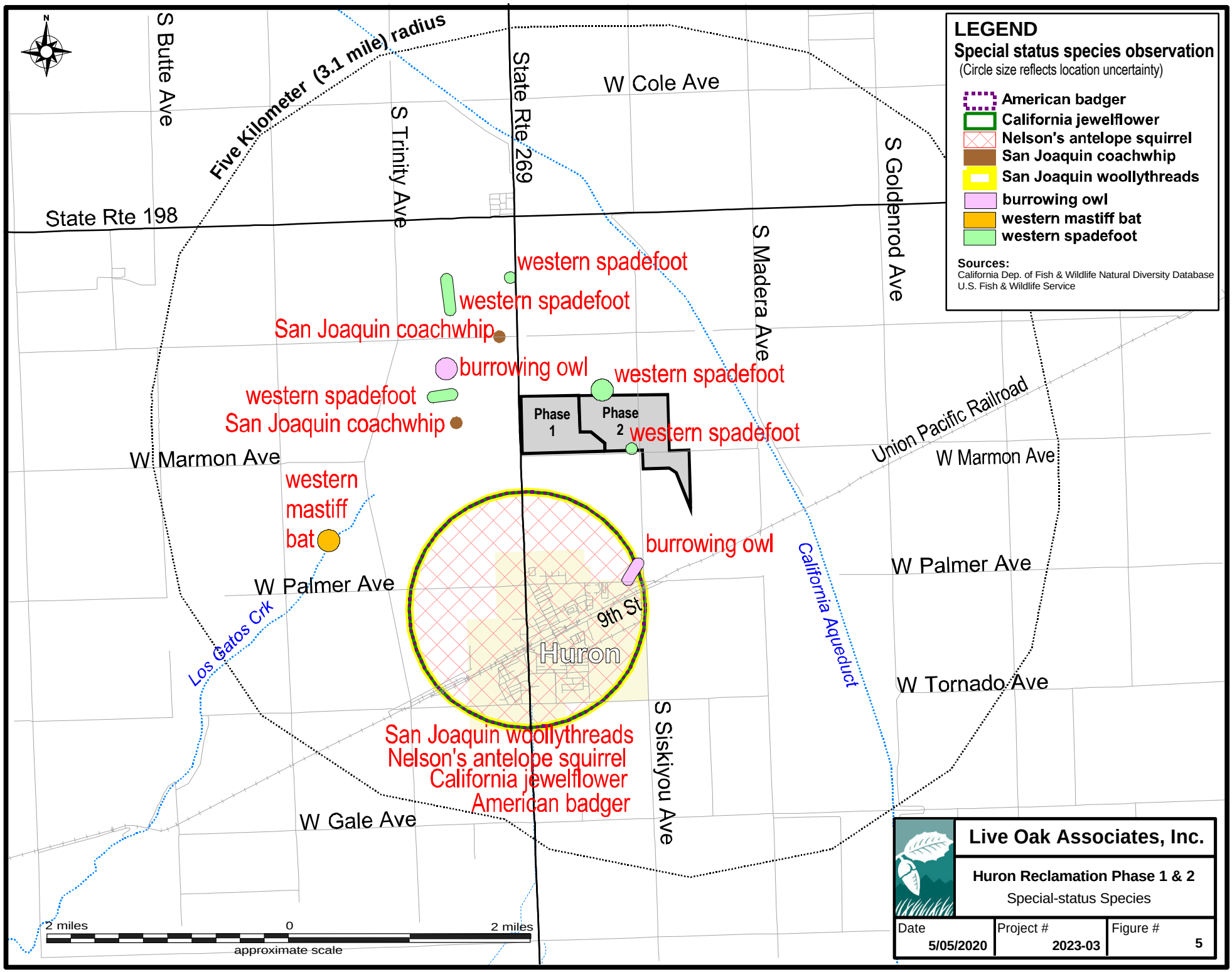
Mammalian use of the grasslands is expected to be much the same as the valley saltbush scrub habitat.

2.4 SPECIAL STATUS PLANTS AND ANIMALS

Several 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 3.1, state and federal laws have provided the 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. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own lists of native plants considered rare, threatened or endangered (CNPS 2020). Collectively, these plants and animals are referred to as "special status species."

The *California Natural Diversity Data Base* (CNDDB) (CDFW 2020) was queried for special status species occurrences in the nine USGS 7.5 minute quadrangles containing and immediately surrounding the project site (*Huron, Harris Ranch, Calflax, Vanguard, Guijarral Hills, Westhaven, Avenal, La Cima,* and *Kettleman City*). An official species list was obtained using the USFWS Information for Planning and Consultation (IPaC) system for federally listed species with the potential to be affected by the project (USFWS 2020; Appendix D). These species, and their potential to occur on the project site, are listed in Table 1 on the following pages. Other sources of information for this table included *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988), *The Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998), and *the on-line version of California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2020).

Special status species occurrences within 3.1 miles (5 kilometers) of the project site are depicted in Figure 5 and San Joaquin kit fox and Swainson's hawk occurrences within 10 miles of the project site are depicted in Figure 6.


LEGEND
Special status species observation
(Circle size reflects location uncertainty)
American badger
California jewelflower
Nelson's antelope squirrel
San Joaquin coachwhip
San Joaquin woollythreads
burrowing owl
western mastiff bat
western spadefoot
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
Five Kilometer (3.1 mile) radius
S Butte Ave
S Trinity Ave
State Rte 269
S Madera Ave
S Goldenrod Ave
W Cole Ave
State Rte 198
western spadefoot
western spadefoot
San Joaquin coachwhip
burrowing owl
western spadefoot
western spadefoot
San Joaquin coachwhip
western spadefoot
Phase 1
Phase 2
W Marmon Ave
W Marmon Ave
Union Pacific Railroad
western mastiff bat
burrowing owl
W Palmer Ave
W Palmer Ave
California Aqueduct
Los Gatos Crk
9th St
Huron
W Tornado Ave
San Joaquin woollythreads
Nelson's antelope squirrel
California jewelflower
American badger
S Siskiyou Ave
W Gale Ave
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Huron Reclamation Phase 1 & 2
Special-status Species
Date 5/05/2020
Project # 2023-03
Figure # 5

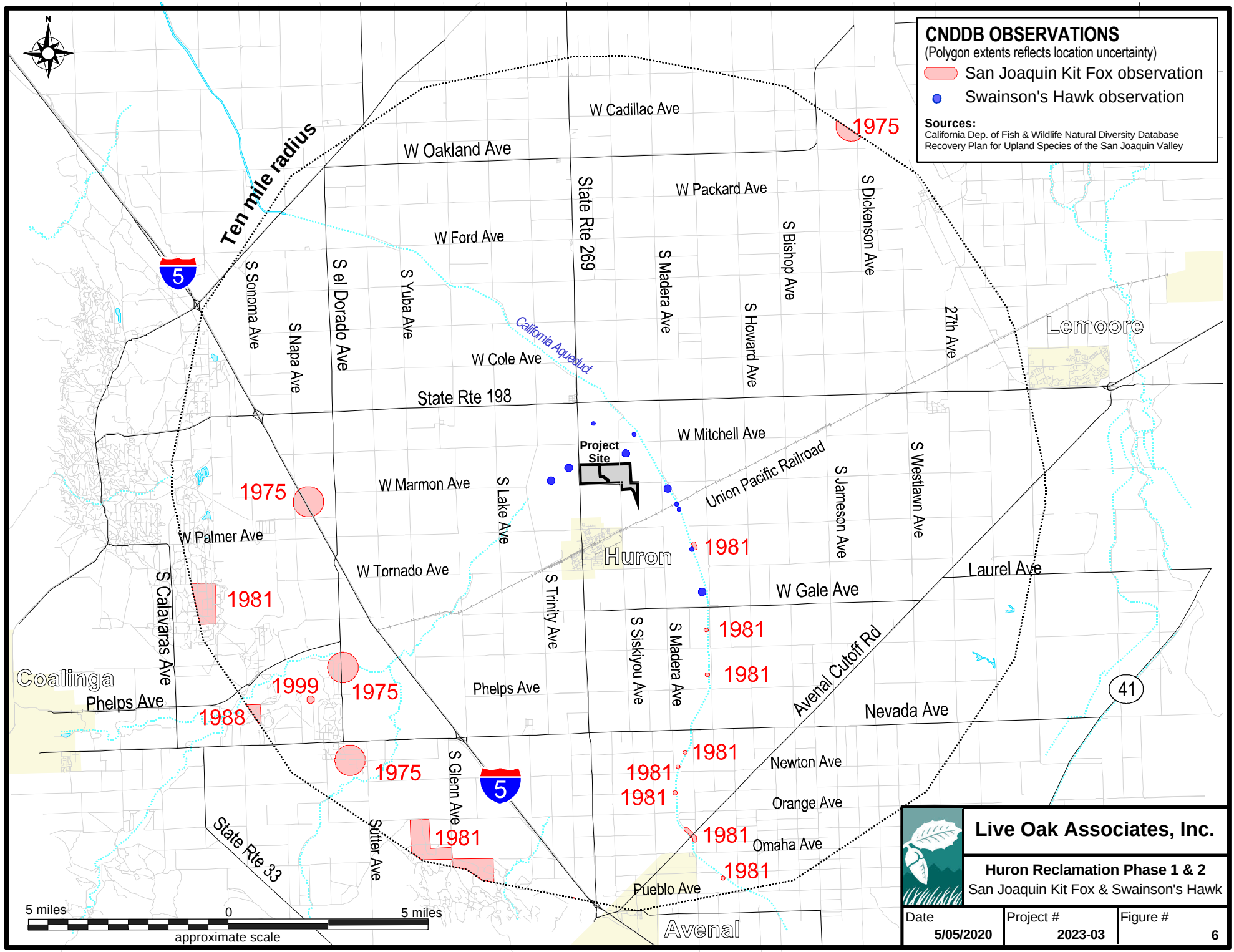

CNDDB OBSERVATIONS
(Polygon extents reflects location uncertainty)
San Joaquin Kit Fox observation
Swainson's Hawk observation
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
Recovery Plan for Upland Species of the San Joaquin Valley
Ten mile radius
W Cadillac Ave
W Oakland Ave
W Packard Ave
W Ford Ave
W Cole Ave
State Rte 198
W Mitchell Ave
W Marmon Ave
W Palmer Ave
W Tornado Ave
W Gale Ave
Laurel Ave
Phelps Ave
Nevada Ave
Newton Ave
Orange Ave
Omaha Ave
Pueblo Ave
Avenal
Coalinga
Huron
Lemoore
Project Site
State Rte 269
S Dickenson Ave
S Bishop Ave
S Madera Ave
S Howard Ave
27th Ave
S Sonoma Ave
S Napa Ave
S el Dorado Ave
S Yuba Ave
California Aqueduct
S Lake Ave
S Trinity Ave
Union Pacific Railroad
S Jameson Ave
S Westlawn Ave
S Siskiyou Ave
S Madera Ave
Avenal Cutoff Rd
S Calavaras Ave
S Glenn Ave
Sutter Ave
State Rte 33
1975
1981
1999
1988
5
41
5 miles
0
5 miles
approximate scale
Live Oak Associates, Inc.
Huron Reclamation Phase 1 & 2
San Joaquin Kit Fox & Swainson's Hawk
Date
5/05/2020
Project #
2023-03
Figure #
6

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2020 and CNPS 2020)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence on the Project Site
California jewel-flower (*Caulanthus californicus*)	FE, CE, CNPS 1B	Chenopod scrub, pinyon and juniper woodland, and sandy valley and foothill grassland at elevations between 70 and 1000 meters. Blooms February-May.	**Absent.** Decades of historic farming of the site would have extirpated any populations of this species that may have once existed on the site. The only known occurrence in the project vicinity was recorded approximately 1 mile southwest of the site in 1893; however, this population has since been extirpated.
San Joaquin woolly threads (*Monolopia congdonii*)	FT, CNPS 1B	Chenopod scrub and valley and foothill grassland at elevations between 60 and 800 meters. Blooms February-May.	**Absent.** Decades of historic farming of the site would have extirpated any populations of this species that may have once existed on the site. The only known occurrence in the project vicinity was recorded approximately 1 mile southwest of the site in 1893; the population has since been extirpated.
Kern mallow (*Eremalche kernensis*)	FE, CNPS 1B	Occurs in chenopod scrub and valley and foothill grassland between 230-4,232 feet in elevation. Blooms March – May.	**Absent.** Decades of historic farming of the site would have extirpated any populations of this species that may have once existed on the site. The only known occurrence in the project vicinity was recorded approximately 13 miles southwest of the site in 1973.

CNPS Listed Plants

Brittlescale (*Atriplex depressa*)	CNPS 1B	Occurs in alkali soils in barren areas within alkali grassland, meadow and scrub. Occasionally found around vernal pools. Elevations up to 320 meters. Blooms April-October.	**Absent.** Decades of historic farming of the site would have extirpated any populations of this species that may have once existed on the site. The closest known occurrence of this species was recorded approximately 8 miles southwest of the site in 2000.
Lemmon's jewel-flower (*Caulanthus lemmonii*)	CNPS 1B	Occurs in pinyon and juniper woodland and valley and foothill grassland habitats between 80 and 1580 meters. Blooms February-May.	**Absent.** Decades of historic farming of the site would have extirpated any populations of this species that may have once existed on the site. There are no known occurrences of this species within 10 miles of the project site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2020 and USFWS 2020)

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence on the Project Site
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occurs in vernal pools, clear to tea-colored water in grass or mud-bottomed swales, and basalt depression pools.	**Unlikely.** While surface water occurs in some portions of the site, decades of historic farming of the site have almost certainly eliminated any populations of this species that could have historically occurred on the site. Furthermore, this species is not known to occur in the region, with the nearest documented occurrence approximately 27 miles to the southwest at Turkey Flat in the Coast Range.
Delta smelt (*Hypomesus transpacificus*)	FT	This slender-bodied fish is endemic to the San Francisco Bay and Sacramento-San Joaquin Delta upstream through Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.	**Absent.** The project site does not provide suitable habitat for this species and is well outside of its known distribution.
California red-legged frog (*Rana aurora draytonii*)	FT	Found in perennial rivers, creeks and stock ponds of the Coast Range and northern Sierra foothills with overhanging vegetation.	**Absent.** The project site does not provide suitable habitat for this species and is outside of its current known range.
Blunt-nosed leopard lizard (*Gambelia silus*)	FE, CE, CFP	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley from Merced south to Kern County.	**Absent.** Decades of historic farming would have eliminated any blunt-nosed leopard lizard populations that may have once occurred on the project site. The dense cover of grasses and forbs on the site provide marginal to unsuitable habitat for this species. The closest known occurrences of this species, historical or otherwise, are more than 8 miles to the southwest.
Giant garter snake (*Thamnophis gigas*)	FT, CT	Occurs in marshes, sloughs, drainage canals, irrigation ditches, rice fields, and adjacent uplands. Prefers locations with emergent vegetation for cover and open areas for basking.	**Absent.** Suitable aquatic habitat for this species is absent from the project site; moreover, the site is well outside of the current known distribution of this species.
Swainson's hawk (*Buteo swainsoni*)	CT	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Present.** Swainson's hawks have been observed foraging over the site's grassland habitat during past LOA field surveys, and could potentially nest in the tamarisk trees of the Phase 2 area or in other suitable trees adjacent to the site. The CNDDB lists 10 nesting occurrences of this species within 3 miles.
Tricolored blackbird (*Agelaius tricolor*)	CT, CSC	Breeds near fresh water, primarily emergent wetlands, with tall thickets. Forages in grasslands and croplands.	**Possible.** Suitable foraging habitat occurs across the site. Marginal breeding habitat is present in dense vegetation at the eastern end of the site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS – cont'd.

Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	*Occurrence on the Project Site
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)	CT	Frequents open shrubland and annual grassland habitats.	**Absent.** Decades of historic farming would have eliminated any Nelson's antelope squirrel populations that may have once occurred on the project site. The CNDDB lists an 1893 occurrence of this species in the general vicinity of Huron; all other occurrences are more than 7 miles away.
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	FE, CE	Inhabits grassland on gentle slopes generally less than 10°, with friable, sandy-loam soils.	**Absent.** The project site is located outside of the historical distribution of this species. Moreover, no known populations remain in Fresno County. There are no CNDDB occurrences of this species, historical or otherwise, within 10 miles of the site.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Inhabits grassland on gentle slopes generally less than 10°, with friable, sandy-loam soils.	**Absent.** The project site is located outside of the known distribution of this species; the Tipton kangaroo rat has never been documented in Fresno County. There are no CNDDB occurrences of this species within 10 miles of the site.
Giant kangaroo rat (*Dipodomys ingens*)	FE, CE	Inhabits grasslands on gentle slopes generally less than 10°, with friable, sandy-loam soils within the west side of the southern San Joaquin Valley and adjacent coastal foothills.	**Absent**. The project site is outside this species' known range, with no known occurrences in the project vicinity. The nearest documented observations of this species are approximately 24 miles to the northwest and 26 miles to the southeast of the site (CDFW 2020).
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Frequents desert alkali scrub and annual grasslands and may forage in adjacent agricultural habitats. Utilizes enlarged (6 to 10 inches in diameter) ground squirrel burrows as denning habitat.	**Possible.** The entire site is suitable for denning and foraging by this species. The CNDDB lists 16 occurrences of this species within a 10-mile radius of the site; however, all but one are from more than 25 years ago.

State Species of Special Concern or California Fully Protected

Western spadefoot (*Spea hammondii*)	CSC	Mainly occurs in grasslands of San Joaquin Valley. Vernal pools or other temporary wetlands are required for breeding. Baumberger et al. (2019) recorded a maximum distance of around 890 feet between breeding and aestivation sites.	**Present.** Individual juvenile spadefoot toads and an associated breeding pool were observed on the site in 2001. At the time of our survey, there was no evidence of ponding at the identified location of the breeding pool. There are three other spadefoot toad occurrences within 3 miles of the site.
Temblor legless lizard (*Anniella alexanderae*)	CSC	Occurs in sparsely vegetated areas with moist, loose soil. Often found underneath leaf litter, rocks, and logs.	**Unlikely.** The site does not include areas of sparse vegetation cover required by this species. The nearest documented occurrence of this species is approximately 9.5 miles to the southwest at the CDFW Pleasant Valley Ecological Reserve.

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
California glossy snake (*Arizona elegans occidentalis*)	CSC	This species occurs sporadically in a range of scrub and grassland habitats, often with loose sandy soils.	**Unlikely.** While potentially suitable habitat occurs on the project site. this species' current known range does not extend east of Interstate 5.
San Joaquin whipsnake (*Masticophis flagellum ruddocki*)	CSC	Open, dry habitats with little or no tree cover. Found in valley grasslands and saltbush scrub in the San Joaquin Valley.	**Possible.** This species could potentially occur in the site's grassland habitat. The CNDDB lists two occurrences within 2 miles of the project site, both within the Arroyo Pasajero Westside Detention Basin.
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.	**Present.** A single burrowing owl was observed on the site during the January surveys. Surveys of adjacent lands conducted by LOA in December 2016 found 5 burrowing owls and 11 burrows with signs of occupation.
Long-eared owl (*Asio otus*)	CSC	Typically nests in dense tall shrubs or trees, and forages in adjacent open habitats such as grassland or shrubland.	**Possible.** This species could potentially forage in the site's grassland, and nest in tamarisk trees of the Phase 2 area. The nearest recorded observation is approximately 10 miles to the southwest.
Short-eared owl (*Asio flammeus*)	CSC	Occurs in grassland, hayfields, and stubble fields, where it hunts small mammals and birds, and nests and roosts on the ground.	**Possible.** The site provides suitable nesting and foraging habitat for this species.
Northern harrier (*Circus cyaneus*)	CSC	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats. Nests on the ground in high vegetation.	**Present.** An active northern harrier nest was observed on adjacent lands within the Arroyo Pasajero Westside Detention Basin during an April 2016 survey conducted by LOA. In addition, a number of harriers were observed flying over the project site during LOA's survey.
White-tailed kite (*Elanus leucurus*)	CFP	Open grasslands and agricultural areas throughout central California.	**Possible.** The entire site provides suitable foraging habitat for this species, and kites could nest in trees on the Phase 2 site.
Mountain plover (*Charadrius montanus*)	CSC	Winters in the Central Valley, where it forages in short grasslands and freshly plowed fields.	**Possible.** The project site's grassland provides suitable winter foraging habitat for the mountain plover. This species breeds outside of California.
Loggerhead shrike (*Lanius ludovicianus*)	CSC	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Can often be found in cropland.	**Present.** Loggerhead shrikes were observed on the site during LOA's surveys. The site contains both foraging and nesting habitat for this species.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	CSC	Forages and breeds in wetlands. Also forages in cropland and grassland several miles from wetlands.	**Possible.** Suitable foraging habitat occurs across the site. Marginal breeding habitat is present in dense vegetation at the eastern end of the 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
Tulare grasshopper mouse (*Onychomys torridus*)	CSC	Occurs in arid shrubland communities in hot, arid grassland and scrub desert associations, including blue oak woodlands in the foothills, upper Sonoran subshrub scrub community; and alkali sink and mesquite associations on the valley floor.	**Absent.** Decades of historic farming would have eliminated any Tulare grasshopper mouse populations that may have once occurred on the project site. There are no known occurrences of this species, historical or otherwise, within 10 miles of the site.
Short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*)	CSC	Prefers arid grassland and shrubland along the western half of the Valley floor and hills on the western edge of the Valley.	**Possible.** Evidence of kangaroo rat occupation of the site was abundant. The project site is within the range of this species and provides suitable habitat. The closest CNDDB occurrence of this species is approx. 8 miles to the southwest in the Guijarral Hills. Other literature describing this species range contains maps depicting occurrences in the vicinity of Huron.
Pallid bat (*Antrozous pallidus*)	CSC	Found in grasslands, chaparral, and woodlands, where it feeds on ground- and vegetation-dwelling arthropods. Prefers to roost in rock crevices, but may also use tree cavities, caves, bridges, and buildings.	**Possible.** Suitable foraging habitat for this species is present on the site. Roosting habitat is absent from the Phase 1 area but potentially present in trees occurring within the Phase 2 area.
Western mastiff bat (*Eumops perotis* ssp. *californicus*)	CSC	Frequents open, semi-arid to arid habitats, including conifer, and deciduous woodlands, coastal scrub, grasslands, palm oasis, chaparral and urban. Roosts in cliff faces, high buildings, trees and tunnels.	**Possible.** Suitable foraging habitat for this species is present on and over the site but roosting habitat is absent.
American badger (*Taxidea taxus*)	CSC	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	**Present.** Evidence of badger occupation of the site was found in the form of badger claw marks on freshly made burrows and diggings at various locations on the 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
FPE	Federally Endangered (Proposed)	CCT	California Threatened (Candidate)
FPT	Federally Threatened (Proposed)	CFP	California Fully Protected
FC	Federal Candidate	CSC	California Species of Special Concern

FMBTA Protected by Federal Migratory Bird Treaty Act

CNPS California Native Plant Society Listing

1A	Plants Presumed Extinct in California	2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere
1B	Plants Rare, Threatened, or Endangered in California and elsewhere		

2.5 ENDANGERED, THREATENED, OR SPECIAL STATUS PLANT AND ANIMAL SPECIES MERITING FURTHER DISCUSSION

2.5.1 Western Spadefoot (*Spea hammondii*). Federal Listing Status: None; State Listing Status: Species of Special Concern

Ecology of the species. The western spadefoot was historically found in California throughout the Central Valley, in the Coast Ranges and coastal lowlands from San Francisco Bay to Mexico. This species has been extirpated from many historic locations due to loss of the habitat it requires, and is now listed as a California Species of Special Concern.

The western spadefoot breeds in seasonal ponds occurring in chaparral, short grass plains or coastal sage scrub. Breeding typically takes place between January and May, but the spadefoot is an opportunistic breeder, physiologically capable of breeding at any time if conditions are favorable (Ervin and Cass 2007). Breeding takes place 1-2 days after heavy rains, and the eggs hatch shortly thereafter. Tadpoles mature in 4 to 11 weeks, depending on food availability and the duration of the pool. To be suitable for the successful transformation of larvae, breeding pools must be inundated for at least 30 days.

Mostly active at night, the spadefoot has adapted to digging in sandy soils and finding refugia in small mammal burrows, creating aestivation habitat that protects it from hot, arid daytime conditions. Although upland habitat use by this species is not well understood, Baumberger et al. (2019) recorded a maximum distance of around 890 feet between the breeding and aestivation sites of spadefoots in Southern California. This species may be inactive for periods of eight to nine months, and may not reach maturity for two years.

Potential to occur onsite. The site contained a small ditch within saltbush scrub that was shallowly inundated at the time of LOA's January survey. While this small ditch could conceivably provide breeding habitat for spadefoot toads and other amphibians, no tadpoles were observed. This ditch was hydrologically connected to an offsite ruderal pool at the edge of a large garlic field, but no tadpoles were detected in this pool either. In 2001, western spadefoot metamorphs were observed in a temporary pool at the southern edge of the site and offsite within the Los Gatos Creek channel (see Figure 5). Inspection of the onsite occurrence area failed to detect any depressions or evidence of ponding. However, an onsite swale system terminates at this area of the site, suggesting that during years of exceptionally heavy rainfall

events this area may pond sufficient water to support spadefoot breeding. An adult California toad was observed at the entrance of a burrow several hundred feet north of the onsite ditch and offsite ruderal pool, suggesting that toad breeding habitat was present in the vicinity.

Because the spadefoot has been documented on and in the near vicinity of the project site, and because the site contains suitable aestivation habitat and potential breeding habitat, this species may occur on site.

2.5.2 Swainson's Hawk (*Buteo swainsoni*). Federal Listing Status: None; State Listing Status: Threatened.

Ecology of the species. Swainson's hawks are large, long-winged, broad-tailed hawks with a high degree of mate and territorial fidelity. They are breeding season migrants to California, arriving at their nesting sites in March or April. The young hatch sometime between March and July and fledge 4 to 6 weeks later. By October, most birds have left for wintering grounds in South America. In the Central Valley, Swainson's hawks typically nest in large trees along riparian systems, but may also nest in oak groves, or lone, mature trees in agricultural fields or along roadsides. Nest sites are typically located adjacent to suitable foraging habitat. Swainson's hawks forage in large, open fields with abundant prey, including grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row crops, primarily during or immediately after harvest (Estep 1989, Estep and Dinsdale 2012). Their designation as a California Threatened species is based on population decline due in part to loss of foraging habitat to urban development (CDFG 1994).

Potential to occur onsite. Swainson's hawks are common in the project vicinity; with 10 documented nesting occurrences within 10 miles (see Figure 65). Suitable nesting habitat for the Swainson's hawk occurs in trees located within the Phase 2 area and adjacent to both phases. Swainson's hawks are expected to regularly forage over the non-native grassland habitat of the site, as indicated by the abundance of nearby nesting occurrences, and as supported by field observations during past LOA surveys.

2.5.3 Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

Ecology of the species. The burrowing owl is primarily a grassland species, but may also occur in open shrub lands, grazed pastures, and occasionally agricultural lands. The primary indicators of suitable habitat appear to be burrows for roosting and nesting and relatively short vegetation, with only sparse areas of shrubs or taller vegetation. Burrowing owls roost and nest in the burrows of California ground squirrels, and occasionally also badger, coyote, or fox. The burrowing owl diet includes a broad array of arthropods, small rodents, birds, reptiles, and amphibians. In California, burrowing owl survival and reproductive success appears linked to rodent populations, particularly California vole (*Microtus californicus*) (Gervais et al. 2006). In agricultural areas of the San Joaquin Valley, burrowing owls primarily forage within 600 meters of their nest burrows (Gervais et al. 2003). The burrowing owl was designated a California Species of Special Concern in 1978 following long-term population decline, primarily due to loss of habitat to development and agricultural practices.

Potential to occur onsite. A single burrowing owl was observed during LOA's January 2020 surveys of the site and five burrowing owls, and eleven burrows with burrowing owl sign, were observed in adjacent non-native grassland habitat during pedestrian transect surveys conducted by LOA in December 2016. The site's grassland and more open areas of valley saltbush scrub represent potential roosting, nesting, and foraging habitat for this species based on the presence of California ground squirrel and badger burrows and vegetation characteristics likely to support considerable prey populations and high prey accessibility. Some areas of the site supported relatively dense stands of shrubs unsuitable for burrowing owl use.

2.5.4 Short-nosed Kangaroo Rat (*Dipodomys nitratoides brevinasus*). Federal Listing Status: None; State Listing Status: Species of Special Concern

Ecology of the species. The short-nosed kangaroo rat is one of three subspecies of the San Joaquin kangaroo rat. Short-nosed kangaroo rats generally occupy grassland with scattered shrubs and desert-shrub associations on friable soils. Like all kangaroo rats, this species is active year-round and seeds form the majority of its diet. Individuals usually live solitarily except when females are in estrus and tolerate the presence of a male.

Potential to occur onsite. Although occurrences are absent from the CNDDB, both Endangered Species Recover Plan (ESRP) and CDFW literature contain mapped locations of short-nosed kangaroo rat documentation in the vicinity of Huron. Numerous kangaroo rat burrows were observed on the project site, mostly in the Phase 2 area, during the January 2020 survey.

Based on this information it is reasonable to assume that the short-nosed kangaroo rat may occupy the project site, especially in the Phase 2 area that contained a higher density of kangaroo rat burrows.

2.5.5 San Joaquin Kit Fox (*Vulpes macrotis mutica*). Federal Listing Status: Endangered; State Listing Status: Threatened.

A detailed report on the suitability of the site for San Joaquin kit fox is presented in Appendix E.

2.6 JURISDICTIONAL WATERS

Jurisdictional waters are those rivers, creeks, drainages, lakes, ponds, reservoirs, and wetlands that are subject to the authority of the USACE, CDFW, and/or the RWQCB. In general, the USACE regulates navigable waters, tributaries to navigable waters, and wetlands adjacent to these waters, where wetlands are defined by the presence of hydric soils, hydrophytic vegetation, and wetland hydrology. The CDFW has jurisdiction over waters in California that have a defined bed and bank, and the RWQCB has jurisdiction over California surface water and groundwater. The regulation of jurisdictional waters is discussed in more detail in Section 3.3.6.

While a small section of shallow inundation was observed within a remnant agricultural ditch on the site during the January 2020 survey, the ditch is expected to be dry for a majority of the year and would not meet the current USACE definition of a water of the U.S. Furthermore, it is highly unlikely that the CDFW or the RWQCB would assert jurisdiction over this feature.

2.7 SENSITIVE NATURAL COMMUNITIES

Sensitive Natural Communities are those that are of limited distribution, distinguished by significant biological diversity, home to special status plant and animal species, of importance in maintaining water quality or sustaining flows, etc. Examples of sensitive natural communities

include various types of wetlands, riparian habitat, and valley scrub habitats. CDFW has assigned State Ranks to California's natural communities that reflect the condition and imperilment of that community throughout its range within the state. State Ranks are represent with a letter and number score. Older ranks, which need to be updated in the CNDDB, may still contain a decimal "threat" rank of .1, .2, or .3, where .1 indicates very threatened status, .2 indicates moderate threat, and .3 indicates few or no current known threats.

While the entire site has been historically farmed, farming ceased approximately 20 years ago on the western half of the site and 40 years ago on the eastern half. The project site now supports approximately 231 acres of valley saltbush scrub. According to the CNDDB the valley saltbush scrub natural community has a California State Rank of S2.1. The definition of an S2 ranking value is as follows:

"Imperiled - Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state."

Large areas of natural and naturalized habitats in the San Joaquin Valley are rare due to wide scale agricultural conversion of valley lands that has been occurring over the last 150 years. Such habitats have the capacity to support native wildlife species once abundant in the San Joaquin Valley, many of which are now considered rare, threatened, and/or endangered due to loss of habitat.

2.8 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, rivers and creeks supporting riparian vegetation, and ridgelines.

While the project site provides for local movement of native wildlife species within the naturalized lands associated with the Arroyo Pasajero Westside Detention Basin, the project site does not contain features that would be likely to function as wildlife movement corridors.

2.9 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 of a threatened or endangered species and that may require special management and protection.

Designated critical habitat is absent from the project site and surrounding lands.

3.0 REGULATORY SETTING

3.1 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Federal projects are subject to the provisions of NEPA. The purpose of NEPA is to assess the effects of a proposed action on the human environment, assess the significance of those effects, and recommend measures that if implemented would mitigate those effects. As used in NEPA, a determination that certain effects on the human environment are "significant" requires considerations of both context and intensity (see 40 CFR 1508.27).

Context means that significance must be analyzed in terms of the affected environment in which a proposed action would occur. For the purposes of assessing effects of an action on biological resources, the relevant context would often be local. The analysis would require a comparison of the action area's biological resources to the biological resources of the local area within which the action area is located. The analysis may, however, require a comparison of the action area's biological resources with the biological resources of an entire region.

Intensity refers to the severity of impact. In considering the intensity of impact to biological resources, it is necessary to address the unique qualities of wetlands and ecologically critical areas that may be affected by the action, the degree to which the action will be controversial, the degree to which the effects of the action will be uncertain, the degree to which the action will establish a precedent for future actions that may result in significant effects, and the potential for the action to result in cumulatively significant effects.

The effects of an action on some biological resources are generally considered to be "significant." Actions that adversely affect federally listed threatened and endangered species and waters of the United States are two examples. Other effect may, however, be considered significant as well. An action that impedes the migratory movements of fish and wildlife, for example, may be considered "significant." An action that substantially reduces the areal extent of fish and wildlife habitat may be considered "significant," especially if habitat loss occurs in areas identified by state and federal governments as ecologically sensitive or of great scenic value.

NEPA requires mitigation for the effects of an action on the environment. Suitable measures include the following:

(a) Avoiding the effect altogether by not taking a certain action or parts of an action.

(b) Minimizing effects by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the effect by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating the effect over time by preservation and maintenance operations during the life of the project.

(e) Compensating for the effect by replacing or providing substitute resources or environments.

This report identifies likely project effects, identifies those that may be considered "significant" per the provisions of NEPA, and recommends mitigation measures that would avoid significant effects to biological resources, if warranted.

3.2 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

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.

3.3 RELEVANT POLICIES AND LAWS

3.3.1 Threatened and Endangered Species

As discussed, state and federal endangered species legislation has provided CDFW and USFWS with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. 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.

3.3.2 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.

Although the USFWS and its parent administration, the U.S. Department of the Interior, have traditionally interpreted the FMBTA as prohibiting incidental as well as intentional "take" of birds, a December 2017 legal opinion issued by the Department of the Interior now states that incidental take of migratory birds while engaging in otherwise lawful activities is permissible under the FMBTA. A proposed rule issued by the USFWS in January 2020 seeks to codify the December 2017 legal opinion; the rule is presently undergoing environmental review pursuant to the National Environmental Policy Act.

Regardless of MBTA interpretations at the federal level, 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. Moreover, the California Migratory Bird Protection Act, enacted in September 2019, clarifies native bird protection and increases protections where California law previously deferred to federal law.

3.3.3 Birds of Prey

Birds of prey are also protected in California under provisions of 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 that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.3.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present if, upon the eagle's return, such alterations agitate or bother the eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

3.3.5 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering."

3.3.6 Wetlands and Other Jurisdictional Waters

The USACE regulates the filling or grading of waters of the U.S. under the authority of Section 404 of the Clean Water Act (CWA). Drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE.

Waters of the U.S. are defined by the Navigable Waters Protection Rule. The new rule was published in the Federal Register on April 21, 2020, and took effect on June 22, 2020.

The Navigable Waters Protection Rule (33 CFR Part 328) defines waters of the U.S. as:

Territorial Seas and Traditional Navigable Waters (TNWs)

- The territorial seas and traditional navigable waters include large rivers and lakes and tidally-influenced waterbodies used in interstate or foreign commerce.

Tributaries

- Tributaries include perennial and intermittent rivers and streams that contribute surface flow to traditional navigable waters in a typical year. These naturally occurring surface water channels must flow more often than just after a single precipitation event—that is, tributaries must be perennial or intermittent.
- Tributaries can connect to a traditional navigable water or territorial sea in a typical year either directly or through other "waters of the United States," through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Ditches are to be considered tributaries only where they satisfy the flow conditions of the perennial and intermittent tributary definition and either were constructed in or relocate a tributary or were constructed in an adjacent wetland and contribute perennial or intermittent flow to a traditional navigable water in a typical year.

Lakes, Ponds, and Impoundments of Jurisdictional Waters

- Lakes, ponds, and impoundments of jurisdictional waters are jurisdictional where they contribute surface water flow to a traditional navigable water or territorial sea in a typical year either directly or through other "waters of the United States," through

channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).

- Lakes, ponds, and impoundments of jurisdictional waters are also jurisdictional where they are flooded by a "water of the United States" in a typical year, such as certain oxbow lakes that lie along the Mississippi River.

Adjacent Wetlands

- Wetlands that physically touch other jurisdictional waters are "adjacent wetlands,"
- Wetlands separated from a "water of the United States" by only a natural berm, bank or dune are also "adjacent."
- Wetlands inundated by flooding from a "water of the United States" in a typical year are "adjacent."
- Wetlands that are physically separated from a jurisdictional water by an artificial dike, barrier, or similar artificial structure are "adjacent" so long as that structure allows for a direct hydrologic surface connection between the wetlands and the jurisdictional water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.
- An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year.

The final rule also outlines what are not "waters of the United States." The following waters/features are not jurisdictional under the rule:

- Waterbodies that are not included in the four categories of "waters of the United States" listed above.
- Groundwater, including groundwater drained through subsurface drainage systems, such as drains in agricultural lands.
- Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools.

- Diffuse stormwater run-off and directional sheet flow over upland.

- Many farm and roadside ditches.

- Prior converted cropland retains its longstanding exclusion, but is defined for the first time in the final rule. The agencies are clarifying that this exclusion will cease to apply when cropland is abandoned (i.e., not used for, or in support of, agricultural purposes in the immediately preceding five years) and has reverted to wetlands.

- Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease.

- Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters.

- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel.

- Stormwater control features excavated or constructed in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off.

- Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention and infiltration basins and ponds, that are constructed in upland or in non-jurisdictional waters.

- Waste treatment systems have been excluded from the definition of “waters of the United States” since 1979 and will continue to be excluded under the final rule. Waste treatment systems include all components, including lagoons and treatment ponds (such as settling or cooling ponds), designed to either convey or retain, concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater or stormwater prior to discharge (or eliminating any such discharge).

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. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

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 certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all Waters of the State, even those 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 IMPACT ANALYSIS

As described in Section 1.0 of this report, the proposed action is the conversion of approximately 408 acres of vacant naturalized land into alfalfa fields for the purposes of disposing wastewater from the City of Huron WWTP. The project will be constructed in two phases. Phase 1 will result in the conversion of 149 acres of grassland habitat to agricultural use and temporary impacts from the installation of 6,280 linear feet of pipeline. The second phase will be constructed at an unknown point in the future, if or when needed. At the time of this analysis there is no site plan for Phase 2, and this analysis assumes that the entire 269-acre Phase 2 area will be converted to agricultural use. Given the anticipated extensive delay between the two project phases, a separate impact analysis for the two phases follows.

4.1 POTENTIALLY SIGNIFICANT PROJECT EFFECTS OF PHASE 1

4.1.1 Western Spadefoot

Impact. As discussed in Section 2.5.1, the project site may support breeding habitat for this species and likely supports adult spadefoot toads that forage and aestivate on the site. During years with heavy rains, the spadefoot may still breed at a location on the site in which metamorphs (i.e. young toads) of this species were observed in 2001 (see Figure 5). A majority of the Phase 1 site is sufficiently far from suitable breeding habitat such that spadefoot toads are not expected to occur within permanently impacted areas of this phase. However, a proposed Phase 1 pipeline would pass through or along an area in which spadefoot toads were observed in 2001. While this project element will only result in temporary impacts, trenching has the potential to result in the mortality of individual western spadefoot toads. The risk of spadefoot mortality in this area would be highest in the spring, a time when young toads congregate in and around their natal pools, emerging from the pool after they have developed legs. However, even outside of this period, trenching has the potential to injure or kill spadefoot toads in their aestivation burrows.

Mitigation. In order to minimize construction-related impacts to spadefoot, the applicant will implement the following measures:

Mitigation Measure 4.1.1a (Avoidance). To the extent feasible the pipeline alignment at the location of the 2001 observation will be located as far south as possible against the toe of slope of the existing offsite irrigation ditch.

Mitigation Measure 4.1.1b (Construction Timing). To avoid the mortality of numerous young toads, the pipeline will be installed between June and October before the first significant rain event occurs.

Mitigation Measure 4.1.1b (Preconstruction survey). Seven (7) days prior to construction of the pipeline, a qualified biologist will survey the pipeline alignment within 890 feet of the documented observation site for western spadefoot. Any spadefoot observed will be captured and relocated to a burrow outside the pipeline alignment but within 1,200 feet of the location of the documented breeding location.

Compliance with the above mitigation measures will ensure that Phase 1 of the project will reduce potential Phase 1 impacts to western spadefoot toad to a less than significant level under CEQA and NEPA.

4.1.2 Burrowing Owl

Impact. The Phase 1 project site contains suitable roosting, nesting and foraging habitat for burrowing owls. LOA surveys found one burrowing owl on the site in 2020 and five burrowing owls offsite in 2016. The Phase 1 project will result in the conversion of most of the site's non-native grassland to an alfalfa field. The alfalfa fields would provide suitable foraging habitat for the burrowing owl of similar quality as the grasslands currently occupying the site. In addition, the proposed upland habitat strips running east to west through the proposed alfalfa field would provide nesting and roosting habitat for the burrowing owl and would make the alfalfa fields more accessible for foraging. However, to increase the likelihood of burrowing owl use of these habitat strips mitigation measures are presented below.

If burrowing owls are present on or adjacent to the Phase 1 site at the time of construction, project activities could result in nest failure or mortality of individual owls. These small raptors are protected under the CMBPA and California Fish and Game Code. Mortality of individual birds would be a violation of state law, and would constitute a potentially significant impact of this project under CEQA and NEPA.

Mitigation. In order to increase the habitat value of the Phase 1 site and to minimize construction related impacts to burrowing owls, the applicant will implement the following measures:

> ***Mitigation Measure 4.1.2a (Artificial Perches).*** The applicant will install 24" high perching posts every 500 feet within each of the habitat strips. Perching posts will consist of a cut, 2-foot long section of T-post welded to the top of another T-post at a right angle to the main post.
>
> ***Mitigation Measure 4.1.2b (Rodenticide Restriction).*** To increase roosting and nesting habitat within the habitat strips created by ground squirrels, rodent control measures (other than encouraging natural predator use) will be forbidden within and out to 100 feet from the habitat strips.
>
> ***Mitigation Measure 4.1.2c (Take Avoidance Survey).*** A pre-construction "take avoidance" survey will be conducted by a qualified biologist for burrowing owls within 14 days of the onset of Phase 1 construction according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The survey area will include all suitable habitat on and within 200 meters of Phase 1 impact areas, where accessible.
>
> ***Mitigation Measure 4.1.2d (Avoidance of Active Nests).*** If Phase 1 project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near project impact areas, a 200-meter disturbance-free buffer will be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers will be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. 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 4.1.2e (Avoidance or Passive Relocation of Resident Owls).*** During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may either be avoided, or passively relocated to alternative habitat. If the Applicant chooses to avoid active owl burrows within the impact area during the non-breeding season, a 50-meter disturbance-free buffer will be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers will be enclosed with temporary fencing, and will remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity will be conducted in accordance with a relocation plan prepared by a qualified biologist.

Compliance with the above mitigation measures will ensure that Phase 1 of the project does not significantly impact burrowing owl individuals or regional populations, will ensure compliance

with state laws protecting this species, and will reduce potential Phase 1 impacts to this species to a less than significant level under CEQA and NEPA.

4.1.3 Swainson's Hawk

Impact. As discussed in Section 2.5.2 of this document, Swainson's hawks are well documented in the project vicinity, are known to forage on the project site, and could potentially also nest in riparian trees adjacent to the Phase 1 area, although suitable nest trees are absent from Phase 1 itself. If Swainson's hawks are nesting adjacent to the project site at the time of construction, individual hawks may be disturbed such that they would abandon their nest(s). Project activities that adversely affect the nesting success of Swainson's hawks or result in the mortality of individual hawks would violate state laws (see Sections 3.3.2 to 3.3.4) and be considered a significant impact under CEQA and NEPA.

At present, grasslands of the Phase 1 site offer suitable foraging habitat for the Swainson's hawk. The project will result in the conversion of this habitat to an alfalfa field. Alfalfa is the preferred Swainson's hawk foraging cover-type in the Central Valley (Estep 1989) and its cultivation on the site will represent no significant change in the site's foraging value. Loss of foraging habitat for the Swainson's hawk is not a significant impact of the project under CEQA and NEPA.

Mitigation. The following avoidance and minimization measures have been adapted from *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California* (CDFG 1994) and *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTAC 2000).

> ***Mitigation Measure 4.1.3a* (*Avoidance*).** In order to avoid impacts to nesting Swainson's hawks, Phase 1 construction activities will occur, where possible, outside the nesting season, typically defined as March 1-September 15.
>
> ***Mitigation Measure 4.1.3b (Pre-construction Surveys).*** If construction activities must occur between March 1 and September 15, a qualified biologist will conduct nest surveys for Swainson's hawks on and within ½ mile of the Phase 1 site in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTAC 2000). Three nest surveys shall be conducted in each of two survey periods, with the survey periods defined as follows: Period I – January 1 to March 20, Period II – March 20 to April 5, Period III – April 5 to April 20,

Period IV – April 21 to June 10, and Period V – June 10 to July 30. Surveys shall take place in the two survey periods immediately prior to the start of construction, with the exception of Period IV, when no surveys should take place per the SHTAC 2000 guidelines. The surveys will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

Mitigation Measure 4.1.3c (Establish Buffers). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Implementation of the above measures will reduce potential Phase 1 impacts to the Swainson's hawk to a less than significant level under CEQA and NEPA, and will ensure compliance with state laws protecting this species.

4.1.4 White-Tailed Kite, Long-Eared Owl, Short-Eared Owl, Northern Harrier, Loggerhead Shrike, and Other Nesting Migratory Birds and Raptors

Impact. The project site contains grassland habitat that could be used by ground-nesting avian species protected under the CMBPA, such as the western meadowlark and mourning dove, and possibly also the special status northern harrier and short-eared owl. CMBPA-protected birds, including the special status loggerhead shrike, white-tailed kite, and long-eared owl, could also nest in the trees, shrubs, and/or tall, dense herbaceous vegetation located adjacent to Phase 1 disturbance areas. If construction occurs during the nesting season, birds nesting on the Phase 1 site could be injured or killed by construction activities, while birds nesting adjacent to the site could be disturbed such that they would abandon their nests. Activities that cause nest abandonment or mortality of CMBPA-protected birds would be a violation of the CMBPA and related state laws, and would constitute a significant impact of the project under CEQA and NEPA.

The Phase 1 project will not result in significant loss of habitat for the white-tailed kite, long-eared owl, short-eared owl, northern harrier, or loggerhead shrike, as alfalfa fields will provide similar foraging opportunity for these species as the existing grassland. Although suitable nesting habitat for the northern harrier and short-eared owl in ground vegetation of the non-native grassland will be removed, similar habitat occurs throughout the remainder of the Arroyo Pasajero Westside Detention Basin. Similarly, suitable nesting habitat for the loggerhead

shrike, white-tailed kite and long-eared owl is located immediately adjacent to the Phase 1 site, and will continue to be available and suitable for these species following the site's conversion to an alfalfa field.

Mitigation. In order to minimize construction disturbance to active migratory bird nests, the applicant will implement the following measures:

> ***Measure 4.1.4a (Avoidance).*** If feasible, Phase 1 of the project will be implemented outside of the avian nesting season, typically defined as February 1 to August 31.
>
> ***Measure 4.1.4b (Pre-construction Surveys*).** If Phase 1 construction is to occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 14 days of the onset of construction. 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 and are capable of foraging independently.

Implementation of the above measures will ensure that Phase 1 of the project will reduce potential Phase 1 impacts to the white-tailed kite, long-eared owl, short-eared owl, northern harrier, loggerhead shrike, or other migratory birds and raptors to a less than significant level under CEQA and NEPA, and will ensure compliance with state laws protecting these species.

4.1.5 San Joaquin Kit Fox

Impact. Although the Phase 1 grasslands represent suitable denning and foraging habitat for the SJKF, the CNDDB lists no recent occurrences of the SJKF within 10 miles of the project site, and the site is located over 50 miles from the nearest core kit fox population. For these reasons, the kit fox is expected to be a rare visitor to the site, at most. However, in the unlikely event that a kit fox were present at the time of Phase 1 construction, it would be vulnerable to construction-related injury or mortality. Such an event would constitute a violation of federal and state law and would represent a significant impact of the project under CEQA and NEPA.

The Phase 1 project will not result in loss of foraging habitat for the SJKF because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. Furthermore, the proposed habitat strips will provide suitable denning habitat throughout the alfalfa field and potential denning habitat for the SJKF is abundant elsewhere in the Arroyo

Pasajero Westside Detention Basin. Therefore, loss of habitat for the SJKF is considered a less than significant impact of the project under CEQA and NEPA.

Mitigation. The applicant will implement the following measures derived from the USFWS 2011 *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*, provided in Appendix F.

> ***Mitigation Measure 4.1.5a (Pre-construction Surveys).*** Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of Phase 1 ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on the project site and evaluate their use by kit foxes. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS shall be contacted immediately to determine the best course of action.
>
> ***Mitigation Measure 4.1.5b (Avoidance).*** Should active kit fox dens be detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.
>
> ***Mitigation Measure 4.1.5c (Minimization).*** All minimization measures presented in the *USFWS Standardized Recommendations* will be implemented for Phase 1 of the project. Such measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash. See Appendix F for more details.
>
> ***Mitigation Measure 4.1.5d (Employee Education Program).*** Prior to the start of Phase 1 construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.
>
> ***Mitigation Measure 4.1.5e (Mortality Reporting).*** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of these measures will ensure that Phase 1 of the project does not significantly impact SJKF individuals or regional populations, ensure compliance with state and federal laws protecting this species, and will reduce potential impacts to this species to a less than significant level under CEQA and NEPA.

4.1.6 American Badger

Impact. The American badger is relatively uncommon in the region and may have been locally extirpated during agricultural conversion of the entire Huron area decades ago. Despite the historic absence of habitat on the project site and vicinity, evidence of American badger was observed adjacent to the Phase 1 project site in the form of fresh diggings and burrows with distinctive badger claw marks. The presence of badgers in these areas suggests that badgers moved onto the site from naturalized lands to the west via Los Gatos Creek once agricultural use of the site ceased. If one or more badgers were denning on the Phase 1 site at the time of construction, then these individuals would be at risk of project-related injury or mortality. Construction mortality of American badgers is considered a potentially significant impact of Phase 1 of the project.

Phase 1 of the project will not result in loss of foraging habitat for the American badger because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. Furthermore, the proposed habitat strips will provide potential denning habitat in close proximity to foraging opportunity in the proposed alfalfa fields. Potential denning habitat for the badger is abundant elsewhere in the Arroyo Pasajero Westside Detention Basin. Therefore, loss of habitat for the badger is not considered a significant impact of the project under CEQA and NEPA.

Mitigation. The following measures will be implemented to avoid and minimize the potential for project-related mortality of American badgers.

> ***Mitigation Measure 4.1.6a: Preconstruction Surveys.*** A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the start of Phase 1 construction. Preconstruction surveys will be conducted in all suitable denning habitat of the project site.

Mitigation Measure 4.1.6b: Avoidance. Should an active den or natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that the badgers have dispersed or the den has been abandoned.

Implementation of the above measures will reduce potential Phase 1 project impacts to the American badger to a less than significant level under CEQA and NEPA and ensure compliance with state laws protecting this species.

4.1.7 Degradation of Water Quality in Seasonal Creeks, Reservoirs and 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. The proposed project is located in the Arroyo Pasajero Westside Detention Basin, which periodically receives floodwater from Los Gatos Creek and has downstream connectivity to the California Aqueduct. Construction activities have the potential to deposit sediment or pollutants into these features. Degradation of water quality in the Arroyo Pasajero Westside Detention Basin and California Aqueduct during construction is a potentially significant impact of Phase 1 of the project under CEQA and NEPA.

Mitigation. Prior to the start of Phase 1 construction, the Applicant will implement the following mitigation measure.

> ***Mitigation Measure 4.1.7 (SWPPP).*** A certified Qualified SWPPP Developer (QSD) will develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the project. SWPPPs are a prerequisite of the State Water Quality Control Board Construction General Permit, which is required for projects that disturb one or more acres of soil (see Section 3.3.6 of this document).

Implementation of the above measure will reduce potential Phase 1 construction-related impacts to downstream water quality to a less than significant level under CEQA and NEPA, and will fulfill the Construction General Permit requirement for Phase 1 of the project.

4.2 LESS THAN SIGNIFICANT PROJECT IMPACTS OF PHASE 1

4.2.1 Special Status Plant Species

Impact. Five special status plant species have been previously documented in the project vicinity. These comprise California jewelflower, San Joaquin woolly-threads, Kern mallow, brittlescale, and Lemmon's jewelflower (see Table 1). These plant species are absent from the Phase 1 site due to many decades of past agricultural disturbance that would have eliminated populations of these species if they existed prior to agricultural use of the land. Therefore, Phase 1 of the proposed project would have no effect on individuals or regional populations of these special status plant species.

Mitigation. Mitigation measures are not warranted.

4.2.2 San Joaquin Whipsnake

Impact. Impact. Observations of a single San Joaquin whipsnakes at two separate locations have been documented in the Arroyo Pasajero Westside Detention Basin outside the Phase 1 area. It is possible that one or more individual San Joaquin whipsnakes could potentially occur within the Phase 1 project site. If whipsnakes were present and a few individuals were injured or killed during project activities, this would not be expected to adversely affect local or regional populations of this species. Therefore, construction-related mortality of the San Joaquin whipsnake is considered a less than significant impact of Phase 1 of the project under CEQA and NEPA.

Phase 1 of the project will result in the loss of up to 149 acres of non-native grassland currently suitable for the San Joaquin whipsnake. However, the proposed habitat strips would provide habitat for the whipsnake, as well as connectivity opportunity between naturalized lands east and west of the Phase 1 site. Furthermore, suitable habitat for this species is abundant elsewhere in the Arroyo Pasajero Westside Detention Basin. As a result, loss of habitat for the San Joaquin whipsnake is considered a less than significant impact of Phase 1 under CEQA and NEPA.

Mitigation. Mitigation is not warranted.

4.2.3 Short-nosed Kangaroo Rat

Impact. The short-nosed kangaroo rat has not been documented in the Arroyo Pasajero Westside Detention Basin. The closest documented occurrence is approximately 8 miles to the west. This species could conceivably occur within the project site as Los Gatos Creek provides a potential movement corridor between the closest occurrence in the Guijarral Hills and the Phase 1 project site. Should short-nosed kangaroo rats occur in the Phase 1 area, their numbers are likely low. Kangaroo rat burrows were relatively sparse within this area and mostly confined to disturbed grassland edges. If this species were present and a few individuals were injured or killed during project activities, this would not be expected to adversely affect local or regional populations of this species. Construction-related mortality of the short-nosed kangaroo rat is therefore considered a less than significant impact of Phase 1 of the project under CEQA and NEPA.

Phase 1 of the project will result in the loss of up to 149 acres of non-native grassland currently suitable for the short-nosed kangaroo rat. However, the proposed habitat strips would provide increased habitat for this species, as this species prefers edge habitat; in addition, the habitat strips will provide connectivity opportunity between naturalized lands east and west of the Phase 1 site. Furthermore, suitable habitat for this species is abundant elsewhere in the Arroyo Pasajero Westside Detention Basin. As a result, loss of habitat for the short-nosed kangaroo rat is considered a less than significant impact of Phase 1 under CEQA and NEPA.

Mitigation. Mitigation is not warranted.

4.2.4 Special Status Animal Species Absent from, or Unlikely to Occur on, the Project Site

Impact. Twelve regionally occurring special status animal species are considered absent or unlikely to occur on the project site due to past and ongoing disturbance of the site and surrounding lands, the absence of suitable habitat, and/or the site's being situated outside of the species' known distribution (see Table 1). Special status animals considered absent/unlikely comprise the vernal pool fairy shrimp, Delta smelt, California red-legged frog, blunt-nosed leopard lizard, Temblor legless lizard, California glossy snake, giant garter snake, Nelson's antelope squirrel, Fresno kangaroo rat, Tipton kangaroo rat, giant kangaroo rat, and Tulare grasshopper mouse. Phase 1 of the project does not have the potential to significantly impact

these species through construction mortality or loss of habitat because there is little or no likelihood that they are present. Project impacts to 12 special status animal species considered absent or unlikely to occur on the site are less than significant under CEQA and NEPA.

Mitigation. Mitigation is not warranted.

4.2.5 Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere

Impact. Five special status animal species, the mountain plover, tricolored blackbird, yellow-headed blackbird, western mastiff bat, and pallid bat, have the potential to forage over the Phase 1 site's non-native grassland, but would not breed on or immediately adjacent to the Phase 1 site. Phase 1 of the project will result in the conversion of 149 acres of non-native grassland to an alfalfa field. Because alfalfa is also suitable as foraging habitat for the three special status birds, none of these species will be impacted by loss of foraging habitat resulting from Phase 1. Similarly, the two special status bats would be expected to continue foraging on and over the Phase 1 site following its conversion to an alfalfa field. Phase 1 of the project does not have the potential to result in the mortality of individuals of any of the species considered in this section because all are highly mobile while foraging and would be expected to fly away from construction disturbance. Project impacts to special status animals and sensitive migratory birds that would use the Phase 1 site for foraging only are less than significant under CEQA and NEPA.

Mitigation. Mitigation is not warranted.

4.2.6 Wildlife Movement Corridors

Impact. The Phase 1 site does not contain features likely to function as a wildlife movement corridor. Phase 1 of the project will have no effect on wildlife movement corridors.

Mitigation. Mitigation is not warranted.

4.2.7 Critical Habitat

Impact. Phase 1 of the project will have no effect on designated critical habitat because critical habitat is absent from the project site and surrounding lands.

Mitigation. Mitigation is not warranted.

4.2.8 Waters of the State and U.S.

Potential Impacts. Phase 1 of the project does not have the potential to impact waters of the State and U.S. because such waters are absent from the site.

Mitigation. Mitigations are not warranted.

4.2.9 Local Policies or Habitat Conservation Plans

Impact. No habitat conservation plans are in affect for the Phase 1 area. Local plans and policies are assumed to not be applicable to federally owned and managed lands.

Mitigation. Mitigations are not warranted.

4.3 POTENTIALLY SIGNIFICANT PROJECT EFFECTS OF PHASE 2

4.3.1 Disturbance to Sensitive Natural Communities and Other Sensitive Habitats

Impact. As discussed in Section 2.7, approximately 231 acres of the Phase 2 site supports valley saltbush scrub habitat, which is an "imperiled" sensitive natural community. A vast majority of saltbush scrub habitat has been eliminated from the San Joaquin Valley. Conversion of this habitat to alfalfa fields is considered potentially significant under both CEQA and NEPA.

Mitigation. The following actions will reduce the impacts to the onsite sensitive natural community to a less than significant level.

> ***Mitigation Measure 4.3.1a (Preservation).*** Prior to the implementation of Phase 2 project activities, the project will purchase a minimum of 462 acres of land determined by a qualified biologist to contain saltbush scrub habitat and place a conservation easement over this land, to be protected and maintained in perpetuity. A five-strand barbed wire fence will be maintained around the property with signs placed every 500 feet stating that the property is a protected ecological area.
>
> ***Mitigation Measure 4.3.1b (Conservation Bank Credit Purchase).*** Alternatively, the project will purchase a minimum of 462 credits from a CDFW-approved conservation bank that contains saltbush scrub habitat.

Implementation of these measures will reduce potential project impacts to Sensitive Natural Communities and other sensitive habitats to a less than significant level under CEQA and NEPA.

4.3.2 Western Spadefoot

Impact. As discussed in Section 2.5.1, the project site may support breeding habitat for this species and likely supports adult spadefoot toads that forage and aestivate on the site. During years with heavy rains, the spadefoot may still breed at a location on the site in which metamorphs (i.e. young toads) of this species were observed in 2001 (see Figure 5). The development of Phase 2 of the project would eliminate this potential breeding habitat. Phase 2 development would have a significant impact on spadefoot breeding and aestivation habitat. The development of this phase would also result in the possible mortality of spadefoot toad individuals. This is most likely in the winter and early spring when larva may be present in inundated areas and in late spring, a time when young toads congregate in and around their natal pools. Even outside of this period, Phase 2 construction activities may result in the mortality of spadefoot toads in their aestivation burrows. Construction-related mortality of spadefoot toads is a significant impact of the Phase 2 project. Implementation of the following mitigations would reduce impacts to spadefoot to a less than significant level.

Mitigation. In order to minimize construction-related impacts to spadefoot, the applicant will implement the following measures:

> ***Mitigation Measure 4.3.2a (Construction Timing).*** To avoid the mortality of numerous larvae or young toads, ground disturbance within 890 feet of the CNDDB occurrence on the site will be initiated between June and October before the first significant rain event occurs.
>
> ***Mitigation Measure 4.3.2b (Preconstruction survey).*** Seven (7) days prior to construction of the project within 890 feet of the documented onsite occurrence, a qualified biologist will survey the development area within 1,200 feet of the documented observation site for western spadefoot. Any spadefoot observed will be captured and relocated to a burrow outside the project area but within 890 feet of potential breeding habitat elsewhere on the Arroyo Pasajero Westside Detention Basin.
>
> ***Mitigation Measure 4.3.2c (Habitat Replacement).*** The project applicant must purchase land or conservation bank credits as described in *Mitigation Measure 4.3.1a* or *Mitigation Measure 4.3.1b* that has been determined to support western spadefoot toads.

Compliance with the above mitigation measures will ensure that Phase 2 of the project will not significantly impact regional populations of the western spadefoot and will reduce potential Phase 1 impacts to western spadefoot toad to a less than significant level under CEQA and NEPA.

4.3.3 San Joaquin Whipsnake

Impact. Observations of a single San Joaquin whipsnakes at two separate locations have been documented in the Arroyo Pasajero Westside Detention Basin outside the Phase 2 area. It is possible that one or more individual San Joaquin whipsnakes could potentially occur within the Phase 2 project site. If whipsnakes were present and a few individuals were injured or killed during project activities, this would not be expected to adversely affect local or regional populations of this species. Therefore, project-related mortality of the San Joaquin whipsnake is considered a less than significant impact of Phase 2 under CEQA and NEPA.

Phase 2 of the project will result in the loss of up to 259 acres of currently suitable habitat for the San Joaquin whipsnake. The loss of this large area of suitable habitat for the San Joaquin whipsnake is considered a potentially significant impact under CEQA and NEPA.

Mitigation. Implementation of *Mitigation Measure 4.3.1a* or *Mitigation Measure 4.3.1b* will reduce impacts to the San Joaquin whipsnake to a less than significant level.

4.3.4 Short-nosed Kangaroo Rat

Impact. As discussed in Section 2.5.4, the short-nosed kangaroo rat has the potential to occur in the Phase 2 area of the project in potentially substantial numbers due to the higher quality habitat of this area over the Phase 1 area, and the abundance of kangaroo rat burrows in the Phase 2 area. The closest CNDDB documented occurrence is approximately 8 miles to the west and ESRP and CDFW literature contain maps that illustrate populations of this species in the vicinity of Huron. Therefore, this species could conceivably occur within the Phase 2 site. If this species were present, an unknown number individuals could be injured or killed during project activities, which would be considered a potentially significant impact under CEQA and NEPA.

Phase 2 of the project will result in the loss of up to 259 acres of currently suitable habitat for the short-nosed kangaroo rat. The loss of this large area of suitable habitat for the short-nosed kangaroo rat is considered a potentially significant impact under CEQA and NEPA.

Mitigation. In order to minimize impacts to short-nosed kangaroo rats, the applicant will comply with the following measures:

> ***Mitigation Measure 4.3.4a (Trapping Surveys).*** Focused protocol-level trapping surveys will be conducted by a qualified wildlife biologist that has been issued the appropriate permits by CDFW and USFWS to determine if short-nosed kangaroo rats occur within Phase 2 of the project site. These surveys will be conducted in accordance with USFWS 2013 *Survey Protocol for Determining Presence of San Joaquin Kangaroo Rats* well in advance of ground-disturbing activities.
>
> ***Mitigation Measure 4.3.4b (Habitat Replacement).*** If the short-nosed kangaroo rat is identified during the protocol-level surveys, the project applicant must purchase land or conservation bank credits as described in *Mitigation Measure 4.3.1a* or *Mitigation Measure 4.3.1b* that has been determined to support short-nosed kangaroo rat.

Implementation of the above mitigation measures will reduce impacts to the short-nosed kangaroo rat to a less than significant level under CEQA and NEPA.

4.3.5 Burrowing Owl

Impact. The Phase 2 site contains valley saltbush scrub and non-native grassland habitat suitable for burrowing owl roosting, nesting and foraging. Phase 2 of the project will result in the conversion of this habitat to an alfalfa field. The alfalfa fields would provide suitable foraging habitat for the burrowing owl of similar quality as habitats currently occupying the site. Nearly all the Phase 2 area would no longer be suitable nesting or roosting habitat after project construction and nesting and roosting would be limited to field edges. The loss of this large area of suitable habitat for the burrowing owls is considered a potentially significant impact under CEQA and NEPA.

If burrowing owls are present on or adjacent to the Phase 2 site at the time of construction, project activities could result in nest failure or mortality of individual owls. These small raptors are protected under the CMBPA and California Fish and Game Code. Mortality of individual

birds would be a violation of state law, and would constitute a potentially significant impact of this project under CEQA and NEPA.

Mitigation. In order to minimize impacts to burrowing owls from the loss if habitat, the applicant will comply with Mitigation Measure 4.3.1a or Mitigation Measure 4.3.1b. To avoid direct impacts to burrowing owls the project will implement the following measures:

> ***Mitigation Measure 4.3.5a (Take Avoidance Survey).*** A pre-construction "take avoidance" survey will be conducted by a qualified biologist for burrowing owls within 14 days of the onset of Phase 2 construction according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). The survey area will include all suitable habitat on and within 200 meters of Phase 2 impact areas, where accessible.
>
> ***Mitigation Measure 4.3.5b (Avoidance of Active Nests).*** If Phase 2 project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near project impact areas, a 200-meter disturbance-free buffer will be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers will be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. 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 4.3.5c (Avoidance or Passive Relocation of Resident Owls).*** During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may either be avoided, or passively relocated to alternative habitat. If the Applicant chooses to avoid active owl burrows within the impact area during the non-breeding season, a 50-meter disturbance-free buffer will be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers will be enclosed with temporary fencing, and will remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity will be conducted in accordance with a relocation plan prepared by a qualified biologist.

Compliance with the above mitigation measures will ensure that Phase 2 of the project does not significantly impact burrowing owl individuals or regional populations, will ensure compliance with state laws protecting this species, and will reduce potential impacts to this species to a less than significant level under CEQA and NEPA.

4.3.6 Swainson's Hawk

Impact. As discussed in Section 2.5.2 of this document, Swainson's hawks are well documented in the project vicinity, are known to forage on the project site, and could potentially also nest in trees on or adjacent to the Phase 2 site. If Swainson's hawks are nesting on or adjacent to the Phase 2 site at the time of construction, individual hawks may be disturbed such that they would abandon their nest(s). Project activities that adversely affect the nesting success of Swainson's hawks or result in the mortality of individual hawks would violate state and federal laws (see Sections 3.3.2 to 3.3.4) and be considered a significant impact under CEQA and NEPA. While a number of large athel tamarisk will be removed during this project phase, these non-native trees were not found to support nesting Swainson hawks during two recent large scale Swainson's hawk nest surveys conducted in the region (Estep and Dinsdale 2012, Hansen 2017). Nearly all the Fremont cottonwood trees in this phase were small and/or dead, rendering them unsuitable for Swainson hawk nesting. Furthermore, hundreds of mature athel tamarisk and Fremont cottonwood trees will remain elsewhere in the Arroyo Pasajero Westside Detention Basin. As a result, loss of Swainson's hawk nesting habitat is considered a less than significant impact under CEQA and NEPA.

At present, valley saltbush scrub and grasslands of the Phase 2 site offer suitable foraging habitat for the Swainson's hawk. This project phase will result in the conversion of these habitats to alfalfa fields. Alfalfa is the preferred Swainson's hawk foraging cover-type in the Central Valley (Estep 1989) and its cultivation on the site will represent no significant change in the site's foraging value. Loss of foraging habitat for the Swainson's hawk is not a significant impact of the project under CEQA and NEPA.

Mitigation. The following avoidance and minimization measures have been adapted from *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California* (CDFG 1994) and *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTAC 2000).

> ***Mitigation Measure 4.3.6a* (*Avoidance*).** In order to avoid impacts to nesting Swainson's hawks, Phase 2 construction activities will occur, where possible, outside the nesting season, typically defined as March 1-September 15.

Mitigation Measure 4.3.6b (Pre-construction Surveys). If construction activities must occur between March 1 and September 15, a qualified biologist will conduct nest surveys for Swainson's hawks on and within ½ mile of the Phase 2 site in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SHTAC 2000). Three nest surveys shall be conducted in each of two survey periods, with the survey periods defined as follows: Period I – January 1 to March 20, Period II – March 20 to April 5, Period III – April 5 to April 20, Period IV – April 21 to June 10, and Period V – June 10 to July 30. Surveys shall take place in the two survey periods immediately prior to the start of construction, with the exception of Period IV, when no surveys should take place per the SHTAC 2000 guidelines. The surveys will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

Mitigation Measure 4.3.6c (Establish Buffers). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Implementation of the above measures will reduce potential Phase 2 impacts to the Swainson's hawk to a less than significant level under CEQA and NEPA, and will ensure compliance with state laws protecting this species.

4.3.7 White-Tailed Kite, Long-Eared Owl, Short-Eared Owl, Northern Harrier, Loggerhead Shrike, and Other Nesting Migratory Birds and Raptors

Impact. The Phase 2 site contains habitat that could be used by ground-nesting avian species protected under the CMBPA, such as the western meadowlark and mourning dove, and possibly also the special status northern harrier and short-eared owl. CMBPA-protected birds, including the special status loggerhead shrike, white-tailed kite, and long-eared owl, could also nest in the trees, shrubs, and/or tall, dense herbaceous vegetation located on or adjacent to Phase 2 disturbance areas. If construction occurs during the nesting season, birds nesting on the Phase 2 site could be injured or killed by construction activities, while birds nesting adjacent to the site could be disturbed such that they would abandon their nests. Activities that cause nest abandonment or mortality of CMBPA-protected birds would be a violation of the CMBPA and related state laws, and would constitute a significant impact of the project under CEQA and NEPA.

The Phase 2 project will not result in significant loss of foraging habitat for the white-tailed kite, long-eared owl, short-eared owl, northern harrier, or loggerhead shrike, as alfalfa fields will provide similar foraging opportunity for these species as the existing grassland. While the Phase 2 project will result in a substantial loss of potential nesting habitat for the short-eared owl, northern harrier, and loggerhead shrike, implementation of *Mitigation Measure 4.3.1a* or *Mitigation Measure 4.3.1b* will offset the loss of nesting habitat through the preservation of offsite lands. While potential nesting habitat for the white-tailed kite and long-eared owl will be lost, primarily in the form of non-native athel tamarisk, numerous athel tamarisk and riparian trees suitable for nesting by these species will remain immediately adjacent to the Phase 2 site, and will continue to be available and suitable for these species following the site's conversion to an alfalfa field.

Mitigation. In order to minimize construction disturbance to active migratory bird nests, the applicant will implement the following measures:

> ***Measure 4.3.7a (Avoidance).*** If feasible, Phase 2 of the project will be implemented outside of the avian nesting season, typically defined as February 1 to August 31.
>
> ***Measure 4.3.7b (Pre-construction Surveys*).** If Phase 2 construction is to occur between February 1 and August 31, a qualified biologist will conduct pre-construction surveys for active migratory bird nests within 14 days of the onset of construction. 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 and are capable of foraging independently.

Implementation of the above measures will ensure that Phase 2 of the project will reduce impacts to the white-tailed kite, long-eared owl, short-eared owl, northern harrier, loggerhead shrike, or other migratory birds and raptors to a less than significant level under CEQA and NEPA, and will ensure compliance with state laws protecting these species.

4.3.8 San Joaquin Kit Fox

Impact. Although the valley saltbush scrub and grasslands of the Phase 2 site represent suitable denning and foraging habitat for the SJKF, the CNDDB lists no recent occurrences of the SJKF within 10 miles of the project site, and the site is located over 50 miles from the nearest core kit fox population. For these reasons, the kit fox is expected to be a rare visitor to the site, at most.

However, in the unlikely event that a kit fox were present at the time of Phase 2 construction, it would be vulnerable to construction-related injury or mortality. Such an event would constitute a violation of federal and state law and would represent a significant impact of the project under CEQA and NEPA.

The Phase 2 project will not result in loss of foraging habitat for the SJKF because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. However, in the absence of a project description, it is theoretically possible that SJKF would be precluded from accessing the alfalfa field by perimeter fencing, should any fencing that is ultimately proposed be impermeable to SJKF movement. If the future alfalfa fields are inaccessible to SJKF, a substantial amount of potential foraging habitat for this species would be effectively lost, a significant impact under CEQA and NEPA. Moreover, Phase 2 of the project will result in a significant loss of suitable denning habitat for this species.

Mitigation. Implementation of *Mitigation Measure 4.3.1a* or *Mitigation Measure 4.3.1b* will offset the loss of SJKF denning habitat resulting from Phase 2 of the project. To ensure that potential SJKF access to the Phase 2 site is retained after agricultural conversion, the following mitigation is required.

> ***Mitigation Measure 4.3.8a (Fencing).*** Any perimeter fencing of the Phase 2 site will allow for San Joaquin kit fox passage. This can be accomplished through the installation of barbed-wire fencing or a gap of 6 inches or greater between the ground and the bottom of impermeable fencing material such as chainlink fencing. Wire at the bottom portion of such chainlink fencing will be knuckled upward to prevent injury to animals passing beneath the fence.

The applicant will implement the following measures derived from the USFWS 2011 *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*, provided in Appendix F.

> ***Mitigation Measure 4.3.8b (Pre-construction Surveys).*** Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of Phase 2 ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. The primary objective is to identify kit fox habitat features (e.g., potential dens and refugia) on the project site and evaluate their use by kit foxes. If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS shall be contacted immediately to determine the best course of action.

Mitigation Measure 4.3.8c (Avoidance). Should active kit fox dens be detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified. A disturbance-free buffer will be established around the burrows in consultation with the USFWS and CDFW, to be maintained until an agency-approved biologist has determined that the burrows have been abandoned.

Mitigation Measure 4.3.8d (Minimization). All minimization measures presented in the *USFWS Standardized Recommendations* will be implemented for Phase 2 of the project. Such measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash. See Appendix F for more details.

Mitigation Measure 4.3.8e (Employee Education Program). Prior to the start of Phase 2 construction, the applicant will retain a qualified biologist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the San Joaquin kit fox. This training will include a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

Mitigation Measure 4.3.8f (Mortality Reporting). The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of these measures will ensure that Phase 2 of the project does not significantly impact SJKF individuals or regional populations, will ensure compliance with state and federal laws protecting this species, and will reduce potential impacts to this species to a less than significant level under CEQA and NEPA.

4.3.9 American Badger

Impact. The American badger is relatively uncommon in the region and may have been locally extirpated during agricultural conversion of the entire Huron area decades ago. Despite the historic absence of habitat on the project site and vicinity, evidence of American badger was observed within the Phase 2 site in the form of fresh diggings and burrows with distinctive badger claw marks. The presence of badgers in these areas suggests that badgers moved onto the site from naturalized lands to the west via Los Gatos Creek once agricultural use of the site

ceased. If one or more badgers were denning on the Phase 2 site at the time of construction, then these individuals would be at risk of project-related injury or mortality. Construction mortality of American badgers is considered a potentially significant impact of Phase 2 of the project under CEQA and NEPA.

The Phase 2 project will not result in loss of foraging habitat for the American badger because lands currently suitable for foraging will be converted to alfalfa, which is also suitable for foraging. A significant amount of suitable denning habitat will be converted to alfalfa. The loss of this large area of suitable denning habitat for the American badger is considered a potentially significant impact under CEQA and NEPA.

Mitigation. In order to minimize impacts to American badgers, the applicant will comply with Mitigation Measure 4.3.1a or Mitigation Measure 4.3.1b and implement the following measures:

> ***Mitigation Measure 4.3.9a: Preconstruction Surveys.*** A preconstruction survey for American badgers will be conducted by a qualified biologist within 30 days of the start of Phase 2 construction. Preconstruction surveys will be conducted in all suitable denning habitat of the Phase 2 site.
>
> ***Mitigation Measure 4.3.9b: Avoidance.*** Should an active den or natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer will be established around the den and maintained until a qualified biologist has determined that badgers have dispersed or the den has been abandoned.

Implementation of the above measures will reduce potential Phase 2 impacts to the American badger to a less than significant level under CEQA and NEPA and ensure compliance with state laws protecting this species.

4.3.10 Pallid Bat

Potential Impacts. The Phase 2 site contains trees within which the pallid bat could roost. If any trees containing bat maternity roosts are removed, many individual bats could be killed. Such a mortality event would be considered a potentially significant impact of the project under CEQA and NEPA.

Although Phase 2 of the project will result in the loss of potential roosting habitat for the pallid bat, numerous trees suitable for bat roosting occur elsewhere in the Arroyo Pasajero Westside

Detention Basin and will continue to be available following the Phase 2 site's conversion to an alfalfa field. Phase 2 of the project will not result in a significant loss of foraging habitat for the pallid bat, as the proposed alfalfa fields will provide similar foraging habitat to what currently exists on the site. Therefore, the loss of potential roosting habitat and foraging habitat for the pallid bat is considered a less than significant impact of Phase 2 of the project under CEQA and NEPA.

Mitigation. The following measures will be implemented for the protection of roosting pallid bats.

> ***Mitigation Measure 4.3.10a (Construction Timing).*** To avoid potential impacts to maternity bat roosts, Phase 2 tree removal should occur outside of the period between April 15 and August 31, the time frame within which colony-roosting bats generally assemble, give birth, nurse their young, and ultimately disperse.
>
> ***Mitigation Measure 4.3.10b (Preconstruction Surveys).*** If tree removal is to occur between April 15 and August 31 (general maternity bat roost season), a qualified biologist will survey suitable trees for the presence of bats within 30 days prior to their removal. The biologist will look for individuals, guano, and staining, and will listen for bat vocalizations. If necessary, the biologist will wait for nighttime emergence of bats from roost sites. If no bats are observed to be roosting or breeding, then no further action would be required, and construction could proceed.
>
> ***Mitigation Measure 4.3.10c (Minimization).*** If a non-breeding bat roost is found in disturbance areas, the individuals will be humanely evicted via two-stage removal of buildings/trees, under the direction of a qualified biologist to ensure that no harm or "take" of any bats occurs as a result of construction activities.
>
> ***Mitigation Measure 4.3.10d (Avoidance of Maternity Roosts)***. If a maternity colony is detected during preconstruction surveys, a disturbance-free buffer will be established around the colony and remain in place until a qualified biologist determines that the nursery is no longer active. The disturbance-free buffer will range from 50 to 100 feet as determined by the biologist.

Implementation of the above measures will reduce Phase 2 impacts to pallid bats to a less than significant level under CEQA and NEPA.

4.3.11 Degradation of Water Quality in Seasonal Creeks, Reservoirs and 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. The proposed project is located in the Arroyo Pasajero Westside Detention Basin, which periodically receives floodwater from Los Gatos Creek and has downstream connectivity to the California Aqueduct. Phase 2 construction activities have the potential to deposit sediment or pollutants into these features. Degradation of water quality in the Arroyo Pasajero Westside Detention Basin and California Aqueduct during Phase 2 construction is a potentially significant issue of the project under CEQA and NEPA.

Mitigation. Prior to the start of Phase 2 construction, the Applicant will implement the following mitigation measures.

> ***Mitigation Measure 4.3.11 (SWPPP).*** A certified Qualified SWPPP Developer (QSD) will develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the project. SWPPPs are a prerequisite of the State Water Quality Control Board Construction General Permit, which is required for projects that disturb one or more acres of soil (see Section 3.3.6 of this document).

Implementation of the above measure will reduce potential Phase 2 construction-related impacts to downstream water quality to a less than significant level under CEQA and NEPA, and will fulfill the Construction General Permit requirement for Phase 2 of the project.

4.4 LESS THAN SIGNIFICANT PROJECT IMPACTS OF PHASE 2

4.4.1 Special Status Plant Species

Impact. Five special status plant species have been previously documented in the project vicinity. These comprise California jewelflower, San Joaquin woolly-threads, Kern mallow, brittlescale, and Lemmon's jewelflower (see Table 1). These plant species are absent from the Phase 2 site due to decades of past agricultural disturbance of the site that would have eliminated populations of these species that may have existed prior to agricultural use of the land many decades ago. Therefore, Phase 2 of the project would have no effect on individuals or regional populations of these special status plant species.

Mitigation. Mitigation measures are not warranted.

4.4.2 Special Status Animal Species Absent from, or Unlikely to Occur on, the Project Site

Impact. Twelve regionally occurring special status animal species are considered absent or unlikely to occur on the project site due to past and ongoing disturbance of the site and surrounding lands, the absence of suitable habitat, and/or the site's being situated outside of the species' known distribution (see Table 1). Special status animals considered absent/unlikely comprise the vernal pool fairy shrimp, Delta smelt, California red-legged frog, blunt-nosed leopard lizard, Temblor legless lizard, California glossy snake, giant garter snake, Nelson's antelope squirrel, Fresno kangaroo rat, Tipton kangaroo rat, giant kangaroo rat, and Tulare grasshopper mouse. Phase 2 of the project does not have the potential to significantly impact these species through construction mortality or loss of habitat because there is little or no likelihood that they are present.

Mitigation. Project impacts to 12 special status animal species considered absent or unlikely to occur on the site are less than significant under CEQA and NEPA. Mitigation is not warranted.

4.4.3 Special Status Animal Species that May Occur on the Project Site as Occasional or Regular Foragers but Breed Elsewhere

Impact. Four special status animal species, the mountain plover, tricolored blackbird, yellow-headed blackbird, and western mastiff bat have the potential to forage over the Phase 2 site, but would not breed on or immediately adjacent to the site (see Table 1). Phase 2 of the project will result in the conversion of 259 acres of valley saltbush scrub and non-native grassland to an alfalfa field. Because alfalfa is also suitable as foraging habitat for the three special status birds, none of these species will be impacted by project-related loss of foraging habitat. Similarly, the western mastiff bat would be expected to continue foraging over the site following its conversion to an alfalfa field. Phase 2 of the project does not have the potential to result in the mortality of individuals of any of the species considered in this section because all are highly mobile while foraging and would be expected to fly away from construction disturbance. Project impacts to special status animals that would use the site for foraging only are less than significant under CEQA and NEPA.

Mitigation. Mitigation is not warranted.

4.4.4 Wildlife Movement Corridors

Impact. The Phase 2 site does not contain features likely to function as a wildlife movement corridor. Phase 2 of the project will have no effect on wildlife movement corridors.

Mitigation. Mitigation is not warranted.

4.4.5 Critical Habitat

Impact. Phase 2 of the project will have no effect on designated critical habitat because critical habitat is absent from the project site and surrounding lands.

Mitigation. Mitigation is not warranted.

4.4.6 Waters of the State and U.S.

Potential Impacts. Phase 2 of the project does not have the potential to impact waters of the State and U.S. because such waters are absent from the site.

Mitigation. Mitigations are not warranted.

4.4.7 Local Policies or Habitat Conservation Plans

Impact. No habitat conservation plans are in affect for the Phase 2 area. Local plans and policies are assumed to not be applicable to federally owned and managed lands.

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 plant species listed below were observed on or adjacent to the project site by LOA during field surveys conducted on January 29, 30, and 31, 2020. 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

AMARANTHACEAE – Amaranth Family		
Amaranthus albus	pigweed amaranth	FACU
ASTERACEAE – Sunflower Family		
Ambrosia acanthicarpa	annual bursage	UPL
Artemisia californica	California sagebrush	UPL
Baccharis salicifolia	mule fat	FAC
Baccharis pilularis	coyote brush	UPL
Centaurea melitensis	tocalote	UPL
Helianthus annuus	common sunflower	FACU
Lactuca serriola	prickly lettuce	FACU
Silybum marianum	milk thistle	UPL
Xanthium strumarium	rough cocklebur	FAC
BORAGINACEAE – Borage Family		
Amsinckia sp.	fiddleneck	UPL
BRASSICACEAE – Mustard Family		
Hirschfeldia incana	short podded mustard	UPL
Sisymbrium irio	London rocket	UPL
Sisymbrium orientale	Oriental hedge mustard	UPL
CHENOPODIACEAE – Goosefoot Family		
Atriplex lentiformis	big saltbush	FAC
Atriplex polycarpa	allscale saltbush	FAC
Salsola tragus	Russian thistle	FACU
CLEOMACEAE – Beeplant Family		
Peritoma arborea	bladderpod	UPL
EUPHORBIACEAE – Spurge Family		
Croton setiger	turkey-mullein	UPL
FABACEAE – Pea Family		
Prosopis pubescens	screwbean mesquite	FAC
GERANIACEAE – Geranium Family		
Erodium cicutarium	red-stemmed filaree	UPL
POACEAE – Grass Family		
Arundo donax	giant reed	FACW
Bromus madritensis ssp. *rubens*	red brome	UPL
Bromus diandrus	ripgut	UPL

Hordeum murinum ssp. *leporinum*	foxtail barley	FACU
POLYGONACEAE – Buckwheat Family		
Rumex dentatus	toothed dock	FACW
SALICACEAE – Willow Family		
Populus fremontii	Fremont cottonwood	UPL
SOLANACEAE – Nightshade Family		
Datura wrightii	jimsonweed	UPL
Nicotiana glauca	tree tobacco	FAC
TAMARICACEAE – Tamarisk Family		
Tamarix aphylla	athel	FAC
Tamarix ramosissima	tamarisk	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 project site by LOA on January 29, 30, and 31, 2020 have been noted with an asterisk.

CLASS: AMPHIBIA
ORDER: ANURA (Frogs and Toads)
FAMILY: BUFONIDAE (True Toads)
*California Toad (*Anaxyrus boreas halophilus*)
FAMILY: SCAPHIOPODIDAE (North American Spadefoots)
Western Spadefoot (*Spea hammondii*)
FAMILY: HYLIDAE (Treefrogs and Relatives)
Pacific Tree Frog (*Pseudacris regilla*)
CLASS: REPTILIA
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
Western Fence Lizard (*Sceloporus occidentalis*)
*Side Blotched Lizard (*Uta stansburiana*)
FAMILY: TEIIDAE (Whiptails and relatives)
Western Whiptail (*Cnemidophorus tigris*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Pacific Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getula*)
San Joaquin Whipsnake (*Coluber flagellum ruddocki*)
FAMILY: VIPERIDAE (Vipers)
Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES
ORDER: CICONIIFORMES (Herons, Storcks, Ibises and Relatives)
FAMILY: CATHARTIDAE (New World Vultures)
Turkey Vulture (*Cathartes aura*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
White-tailed Kite (*Elanus caeruleus*)
*Northern Harrier (*Circus cyaneus*)
*Swainson's Hawk (*Buteo swainsoni*)
*Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)
Cooper's Hawk (*Accipiter cooperii*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
American Kestrel (*Falco sparverius*)
*Merlin (*Falco columbarius*)

Prairie Falcon (*Falco mexicanus*)

ORDER: GALLIFORMES (Megapodes, Currassows, Pheasants, and Relatives)

FAMILY: ODONTOPHORIDAE (New World Quails)

*California Quail (*Callipepla californica*)

ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)

FAMILY: CHARADRIIDAE (Plovers and relatives)

Killdeer (*Charadrius vociferus*)

ORDER: COLUMBIFORMES (Pigeons and Doves)

FAMILY: COLUMBIDAE (Pigeons and Doves)

Eurasian Collared Dove (*Streptopelia decaocto*)

Rock Pigeon (*Columba livia*)

*Mourning Dove (*Zenaida macroura*)

ORDER: STRIGIFORMES (Owls)

FAMILY: TYTONIDAE (Barn Owls)

Barn Owl (*Tyto alba*)

FAMILY: STRIGIDAE (Typical Owls)

*Great Horned Owl (*Bubo virginianus*)

*Burrowing Owl (*Athene cunicularia*)

ORDER: CAPRIMULGIFORMES (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*)

Rufous Hummingbird (*Selasphorus rufus*)

ORDER: PICIFORMES (Woodpeckers and Relatives)

FAMILY: PICIDAE (Woodpeckers and Wrynecks)

*****Northern Flicker (*Colaptes auratus*)

Nuttall's Woodpecker (*Picoides nuttallii*)

ORDER: PASSERIFORMES (Perching Birds)

FAMILY: TYRANNIDAE (Tyrant Flycatchers)

Black Phoebe (*Sayornis nigricans*)

*Say's Phoebe (*Sayornis saya*)

Western Kingbird (*Tyrannus verticalis*)

FAMILY: LANIIDAE (Shrikes)

*Loggerhead Shrike (*Lanius ludovicianus*)

FAMILY: CORVIDAE (Jays, Magpies, and Crows)

*California Scrub Jay (*Aphelocoma californica*)

American Crow (*Corvus brachyrhynchos*)

*Common Raven (*Corvus corax*)

FAMILY: ALAUDIDAE (Larks)

*Horned Lark (*Eremophila alpestris*)

FAMILY: HIRUNDINIDAE (Swallows)

Cliff Swallow (*Petrochelidon pyrrhonota*)

Barn Swallow (*Hirundo rustica*)

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
Tree Swallow (*Tachycineta bicolor*)

FAMILY: TROGLODYTIDAE (Wrens)

House Wren (*Troglodytes aedon*)
*Bewick's Wren (*Thryomanes bewickii*)

FAMILY: REGULIDAE (Kinglets)

*Ruby-crowned Kinglet (*Regulus calendula*)

FAMILY: TURDIDAE (Thrushes)

Western Bluebird (*Sialia mexicana*)
American Robin (*Turdus migratorius*)

FAMILY: MIMIDAE (Mockingbirds and Thrashers)

*Northern Mockingbird (*Mimus polyglottos*)

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: PARULIDAE (Wood Warblers and Relatives)

Yellow-rumped Warbler (*Dendroica coronata*)

FAMILY: EMBERIZIDAE (Emberizines)

Lark Sparrow (*Chondestes grammacus*)
*Savannah Sparrow (*Passerculus sandwichensis*)
*White-crowned Sparrow (*Zonotrichia leucophrys*)
Dark-eyed Junco (*Junco hyemalis*)

FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)

*Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
Bullock's Oriole (*Icterus bullocki*)

FAMILY: FRINGILLIDAE (Finches)

*House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)

FAMILY: PASSERIDAE (Old World Sparrows)

House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA

ORDER: DIDELPHIMORPHIA (Marsupials)

FAMILY: DIDELPHIDAE (Opossums)

Virginia Opossum (*Didelphis virginiana*)

ORDER: INSECTIVORA (Shrews and Moles)

FAMILY: TALPIDAE (Moles)

Broad-footed Mole (*Scapanus latimanus*)

ORDER: CHIROPTERA (Bats)

FAMILY: VESPERTILIONIDAE (Vespertilionid Bats)

Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus*)

Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Pale Big-eared Bat (*Corynorhinus townsendii pallescens*)
Pallid Bat (*Antrozous pallidus*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
Western Mastiff Bat (*Eumops perotis*)

ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)

FAMILY: LEPORIDAE (Rabbits and Hares)

*Desert Cottontail (*Sylvilagus audubonii*)
Black-tailed Jackrabbit (*Lepus californicus*)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

California Ground Squirrel (*Otospermophilus beecheyi*)

FAMILY: GEOMYIDAE (Pocket Gophers)

Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: MURIDAE (Mice, Rats and Voles)

Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
California Vole (*Microtus californicus*)

FAMILY: HETEROMYIDAE (Kangaroo Rats)

Heermann's Kangaroo Rat (*Dipodomys heermanni*)
Short-nosed Kangaroo Rat (*Dipodomys nitratoides brevinasus*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves, and Relatives)

Coyote (*Canis latrans*)
Red Fox (*Vulpes vulpes*)
Gray Fox (*Urocyon cinereoargenteus*)

FAMILY: PROCYONIDAE (Raccoons and Relatives)

Raccoon (*Procyon lotor*)

FAMILY: MUSTELIDAE (Weasels and Relatives)

Striped Skunk (*Mephitis mephitis*)

FAMILY: FELIDAE (Cats)

Bobcat (*Lynx rufus*)
Feral Cat (*Felis cattus*)

APPENDIX C: SELECTED PHOTOGRAPHS OF THE PROJECT SITE

Photo 1: Non-native grassland in Phase 1 of the project site.

Photo 2: Valley saltbush scrub in Phase 2 of the project site.

Photo 3: Location of western spadefoot observation along the Phase 1 pipeline alignment and within valley saltbush scrub of Phase 2. No evidence of breeding habitat was present at the time of the 2020 survey.

Photo 4: Grassland habitat within the Phase 2 project area.

Photo 5: Remnant irrigation canal within Phase 2, in which a few hundred feet were shallowly inundated at the time of the 2020 site survey. The source of water appeared to originate in offsite agricultural fields and ponds to the west of the ditch.

Photo 6: Evidence of recent American badger digging. Distinctive deep wide-spaced claw marks visible.

Photo 7: Potential San Joaquin kit fox den within Phase 2 area.

APPENDIX D: USFWS SPECIES LIST

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Fresno County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building

2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Giant Kangaroo Rat Dipodomys ingens No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox Vulpes macrotis mutica No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat Dipodomys nitratoides nitratoides No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7247	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
California Jewelflower Caulanthus californicus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4599	Endangered
San Joaquin Wooly-threads Monolopia (=Lembertia) congdonii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3746	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/

birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On

the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER POND

PUSCx

PUBFx

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX E: SAN JOAQUIN KIT FOX HABITAT ANALYSIS REPORT

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

SAN JOAQUIN KIT FOX HABITAT ASSESSMENT REPORT
CITY OF HURON ADDITIONAL EFFLUENT RECLAMATION AREA
(PHASES 1 AND 2)
FRESNO COUNTY, CALIFORNIA

Prepared for

Travis Crawford
Principal Environmental Planner
CRAWFORD & BOWEN PLANNING, INC.
113 N. Church Street, Suite 302
Visalia, CA 93291

&

THE CITY OF HURON

Prepared by

LIVE OAK ASSOCIATES, INC.

Geoffrey D. Cline, M.S., Senior Project Manager and Ecologist
Austin Pearson, B.S., Director of Ecological Services, Central Valley and Sierra Nevada

June 23, 2020 PN 2023-03

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San Jose: 6840 Via Del Oro, Suite 220 • San Jose, CA 95119 • Phone: (408) 224-8300 • Fax: (408) 224-2411

www.loainc.com

EXECUTIVE SUMMARY

Live Oak Associates, Inc. prepared the following San Joaquin kit fox (*Vulpes macrotis*) habitat assessment for the City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Project. The site is located approximately one mile north of the City of Huron, in Fresno County, California. The purpose of this assessment is to assist the U.S. Fish and Wildlife Service in determining the value of the site for foraging kit fox. This assessment utilizes the results of a burrow and Russian thistle (*Salsola tragus*) survey within the Valley saltbrush scrub and non-native grassland habitats of the site, the historical observations of kit fox within the vicinity of the site, and other studies completed on SJKF. It assesses the suitability of the site for kit fox, the potential use by kit fox, and what the value of the habitats of the site will be for foraging kit fox after the site has been converted into an alfalfa field.

The approximately 68-mile transect survey conducted within the approximately 500-acre site identified 20,088 burrows (or fresh gopher mounds) being used by the following species types: kangaroo rat (*Dipodomys sp.*), California ground squirrel (*Otospermophilus beecheyi*), other (gopher, mouse, etc.), American badger (*Taxidea taxus*), coyote (*Canis latrans*). With the exception of American badger and coyote, the above species provide a prey base for kit fox. Five burrows appeared to meet the typical size for kit fox dens, however no kit fox sign was observed. One burrowing owl was observed.

The most recent observation of kit fox in the vicinity is from 1999, less than 10 miles southwest of the site in the Guijarral Hills, which is near other more recent observations of kit fox. The site is located within an island of Valley saltbrush scrub and non-native grassland, is considered medium quality habitat, and is isolated from much larger areas of higher quality habitat. Conversion of the site to agricultural habitat will likely reduce the overall value of the site for potential foraging and dispersing kit fox because the prey base will be more favorable in adjacent non-native grassland habitats.

The site may be used by foraging or dispersing kit fox and once the site is converted to alfalfa, foraging or dispersing kit fox may use the margins of the alfalfa field or other suitable habitats to the north, east, and west of the site.

TABLE OF CONTENTS

EXECUTIVE SUMMARY _____ *ii*

1.0 INTRODUCTION _____ *1*

1.1 Project Description _____ 1

1.2 Purpose _____ 9

2.0 METHODS _____ *10*

3.0 RESULTS _____ *11*

4.0 DISCUSSION _____ *13*

5.0 REFERENCES _____ *15*

APPENDIX A: REPRESENTATIVE PICTURES OF THE SITE _____ *17*

1.0 INTRODUCTION

The report that follows assesses the suitability of habitat for San Joaquin kit fox (*Vulpes macrotis*) (SJKF) within approximately 500 acres of non-native grassland habitat of the City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Project (or "project"). The report also assesses the likelihood that SJKF would be present in any of the suitable habitats and how SJKF may utilize these areas after they have been developed into an alfalfa field. The assessment has been based on the results of field surveys for habitat elements favorable for the occurrence of SJKF, historical observations of SJKF within the site vicinity, and other studies completed for SJKF.

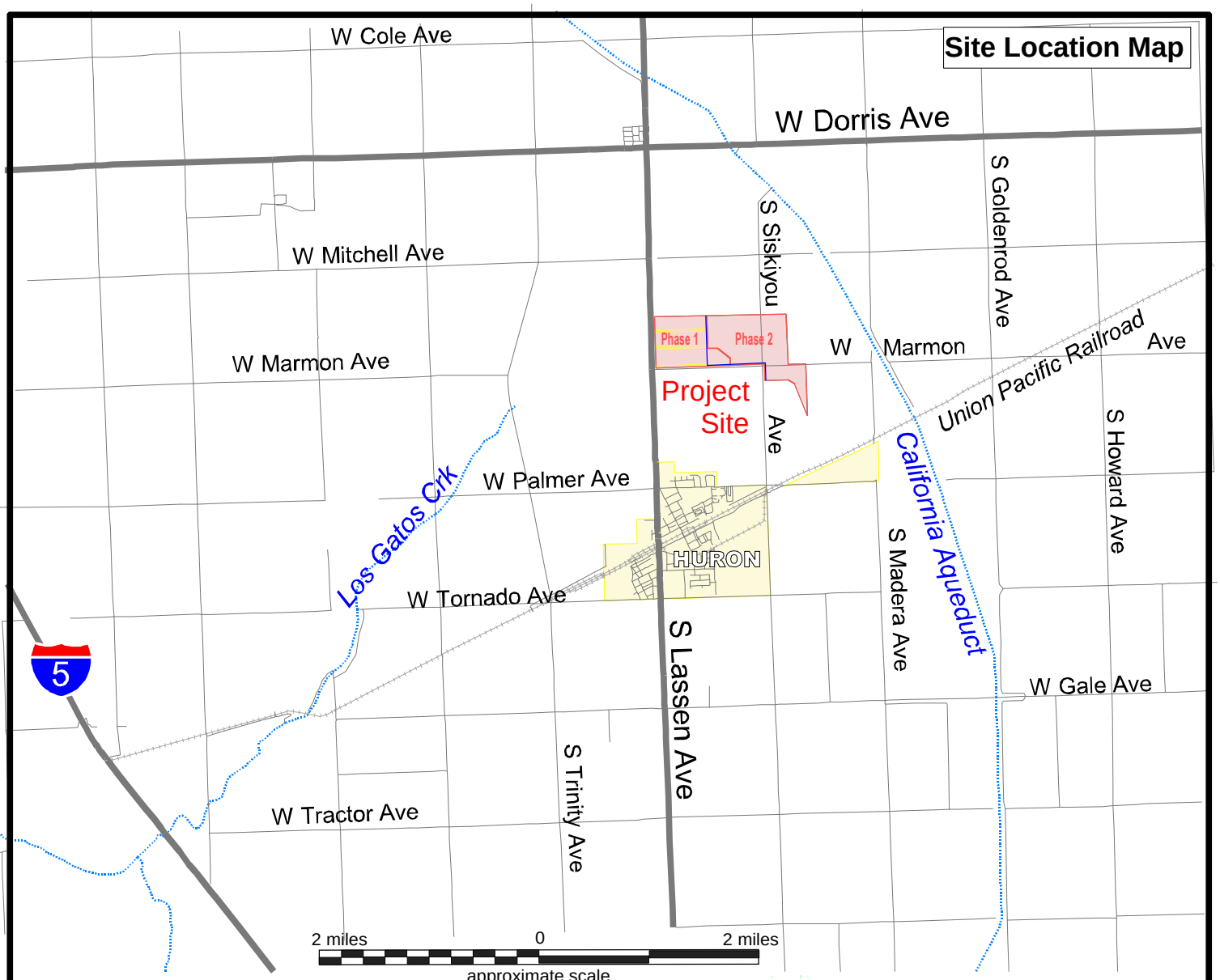
The approximately 500-acre project site (or "site") is located approximately 1 mile northeast of the center of Huron in western Fresno County (Figure 1), and can be found on the *Huron* U.S. Geological Survey (USGS) 7.5 minute quadrangle within Section 1 of Township 20 South, Range 17 East; and Sections 35 and 36 within Township 19 South, Range 17 East (Mt. Diablo Base and Meridian) (Figure 2).

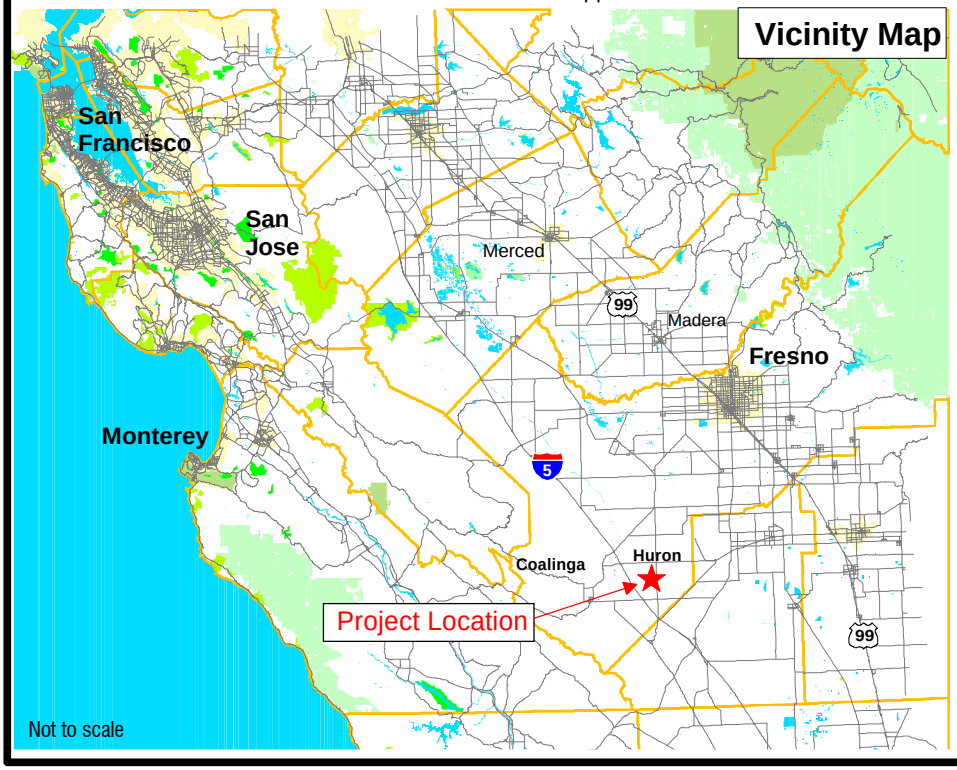
As described in our biological evaluation report, two biotic habitats are present on the site and include Valley saltbrush scrub and non-native grassland (Figure 3). Sixteen California Natural Diversity Database (CNDDB) records of SJKF were found within 10 miles of the site from 1975-1999 (Figure 4) (CDFW 2020).

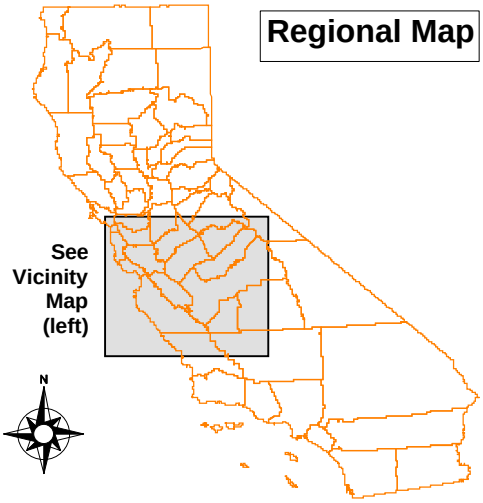
1.1 Project Description

The two-phased project is in addition to a previously approved 200-acre effluent disposal project that is located immediately north of the existing waste-water treatment project (WWTP) and immediately south and southeast of the proposed expansion areas proposed by the project. At full buildout, approximately 417 acres of land would be converted to agriculture (non-human consumption crops such as alfalfa), which would require improvements on the land such as installing an irrigation system and grading. Phase 1 includes 152 acres, and Phase 2 includes 265 acres, which will only be constructed if and when the City of Huron determines there is adequate demand. An additional 20 acres of land would be used to preserve existing grassland habitat (see discussion in *Biological Considerations* below).

In order to convey treated wastewater to the reclamation field, improvements on existing land will be required, in addition to new facilities and a conveyance system. Additional facilities and improvement include grading, pump stations, diversion structures, a tailwater return pond, alfalfa



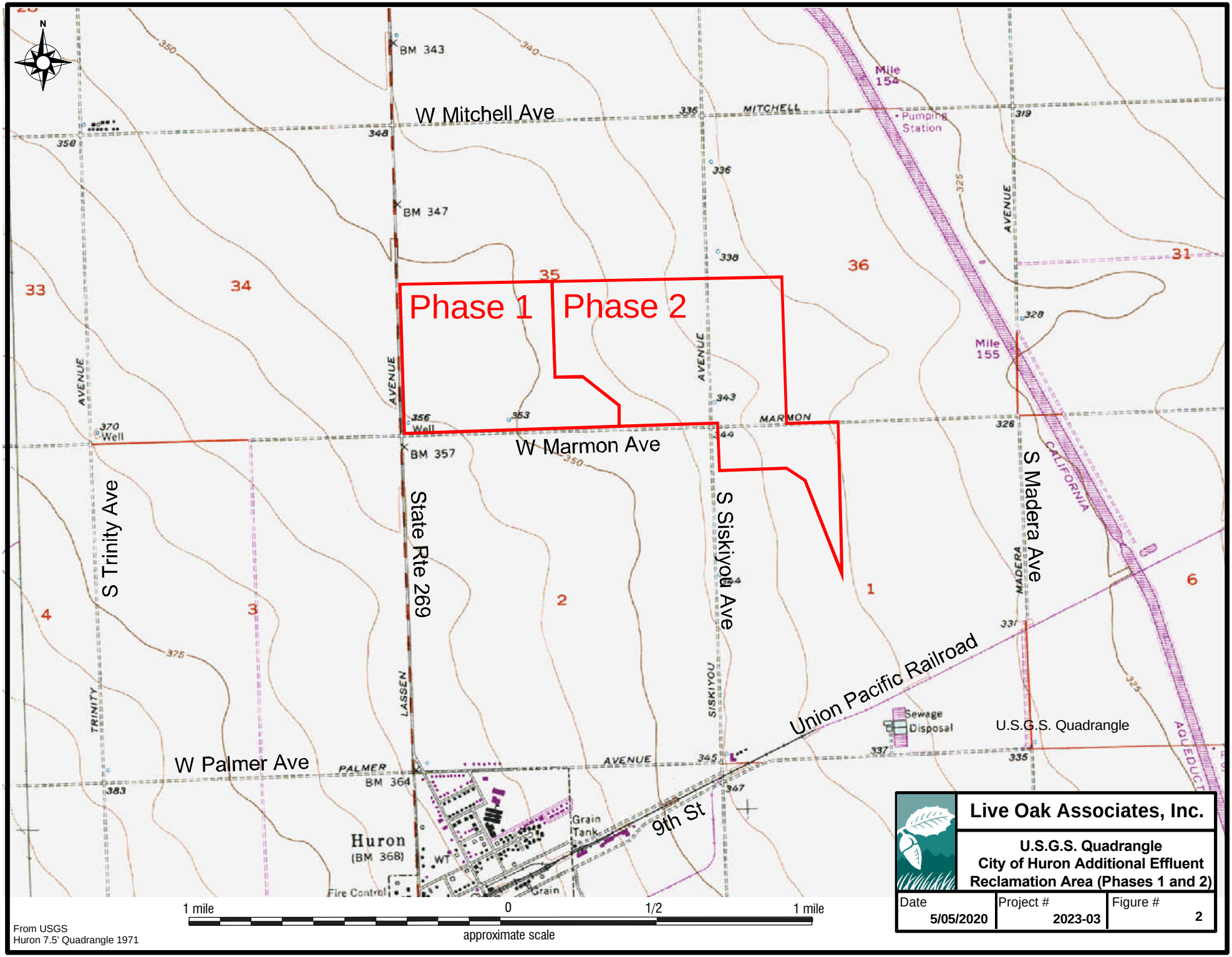




Live Oak Associates, Inc.

Site/Vicinity Map
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
5/05/2020	2023-03	1

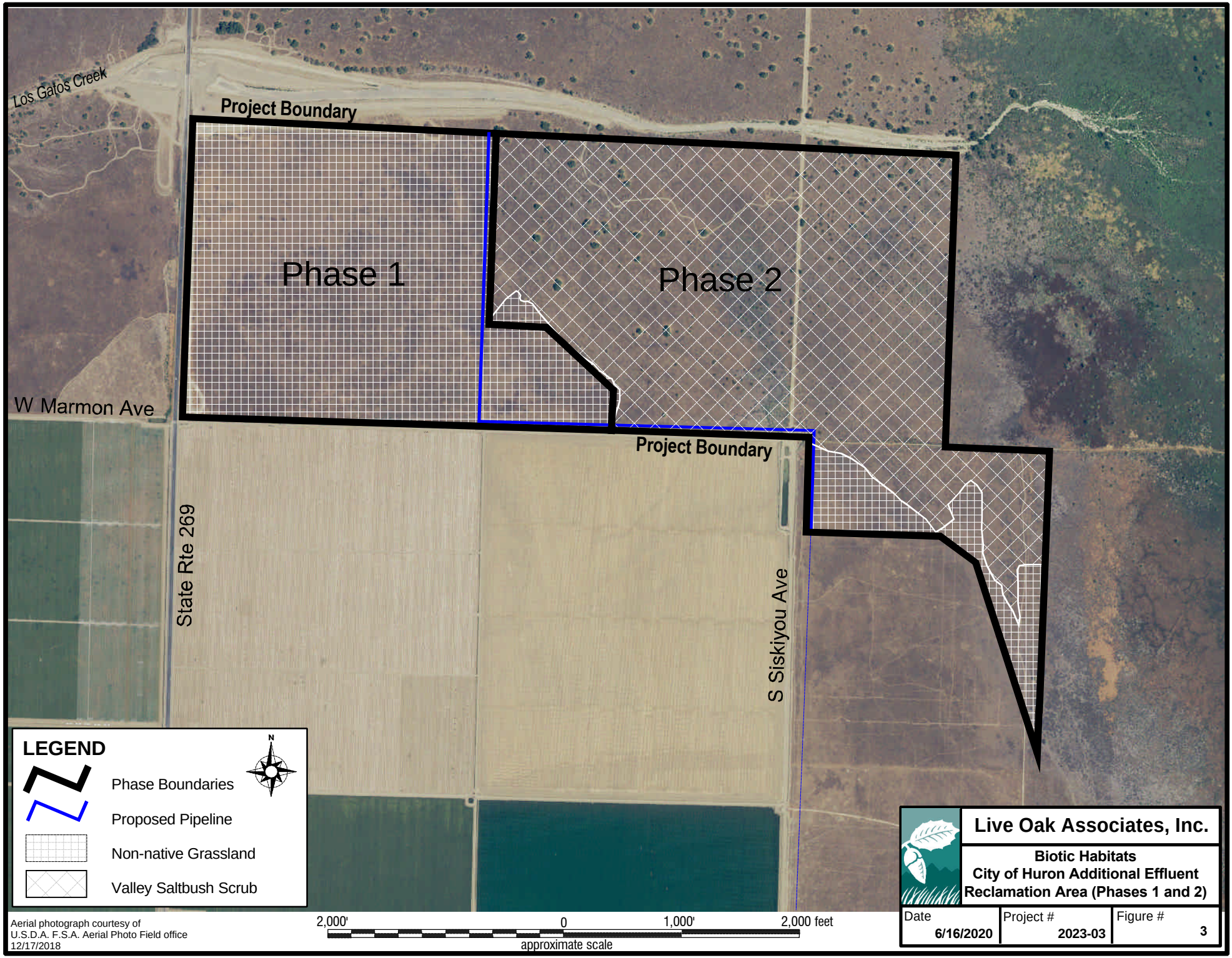


From USGS
Huron 7.5' Quadrangle 1971

Live Oak Associates, Inc.

U.S.G.S. Quadrangle
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
5/05/2020	2023-03	2

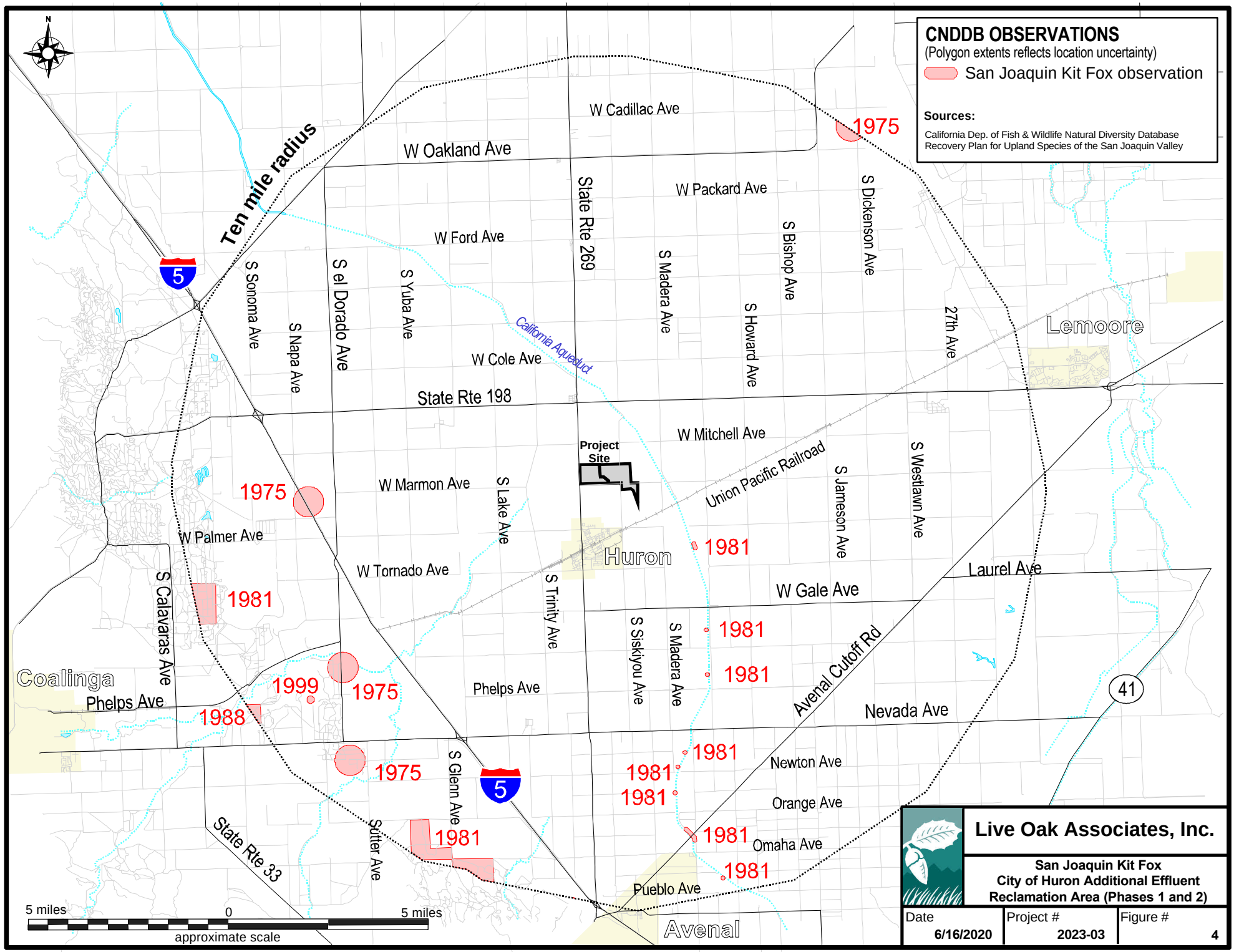


Aerial photograph courtesy of
U.S.D.A. F.S.A. Aerial Photo Field office
12/17/2018

Live Oak Associates, Inc.

Biotic Habitats
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
6/16/2020	2023-03	3


CNDDB OBSERVATIONS
(Polygon extents reflects location uncertainty)
San Joaquin Kit Fox observation
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
Recovery Plan for Upland Species of the San Joaquin Valley
Ten mile radius
W Cadillac Ave
W Oakland Ave
W Packard Ave
W Ford Ave
W Cole Ave
State Rte 198
W Mitchell Ave
W Marmon Ave
W Palmer Ave
W Tornado Ave
W Gale Ave
Laurel Ave
Phelps Ave
Nevada Ave
Newton Ave
Orange Ave
Omaha Ave
Pueblo Ave
Avenal
Lemoore
Huron
Coalinga
Project Site
State Rte 269
S Dickenson Ave
S Bishop Ave
S Madera Ave
S Howard Ave
27th Ave
S Sonoma Ave
S Napa Ave
S el Dorado Ave
S Yuba Ave
California Aqueduct
S Lake Ave
S Trinity Ave
Union Pacific Railroad
S Jameson Ave
S Westlawn Ave
S Siskiyou Ave
S Madera Ave
Avenal Cutoff Rd
S Calavaras Ave
S Glenn Ave
Sutter Ave
State Rte 33
1975
1981
1999
1988
5
41
5 miles
0
5 miles
approximate scale
Live Oak Associates, Inc.
San Joaquin Kit Fox
City of Huron Additional Effluent
Reclamation Area (Phases 1 and 2)
Date
6/16/2020
Project #
2023-03
Figure #
4

valves, and new pipelines to convey treated effluent to the reclamation field. The pipeline routing and design characteristics are discussed further in the following paragraphs. See Figure 5 for a site plan map.

Pipeline Alignments

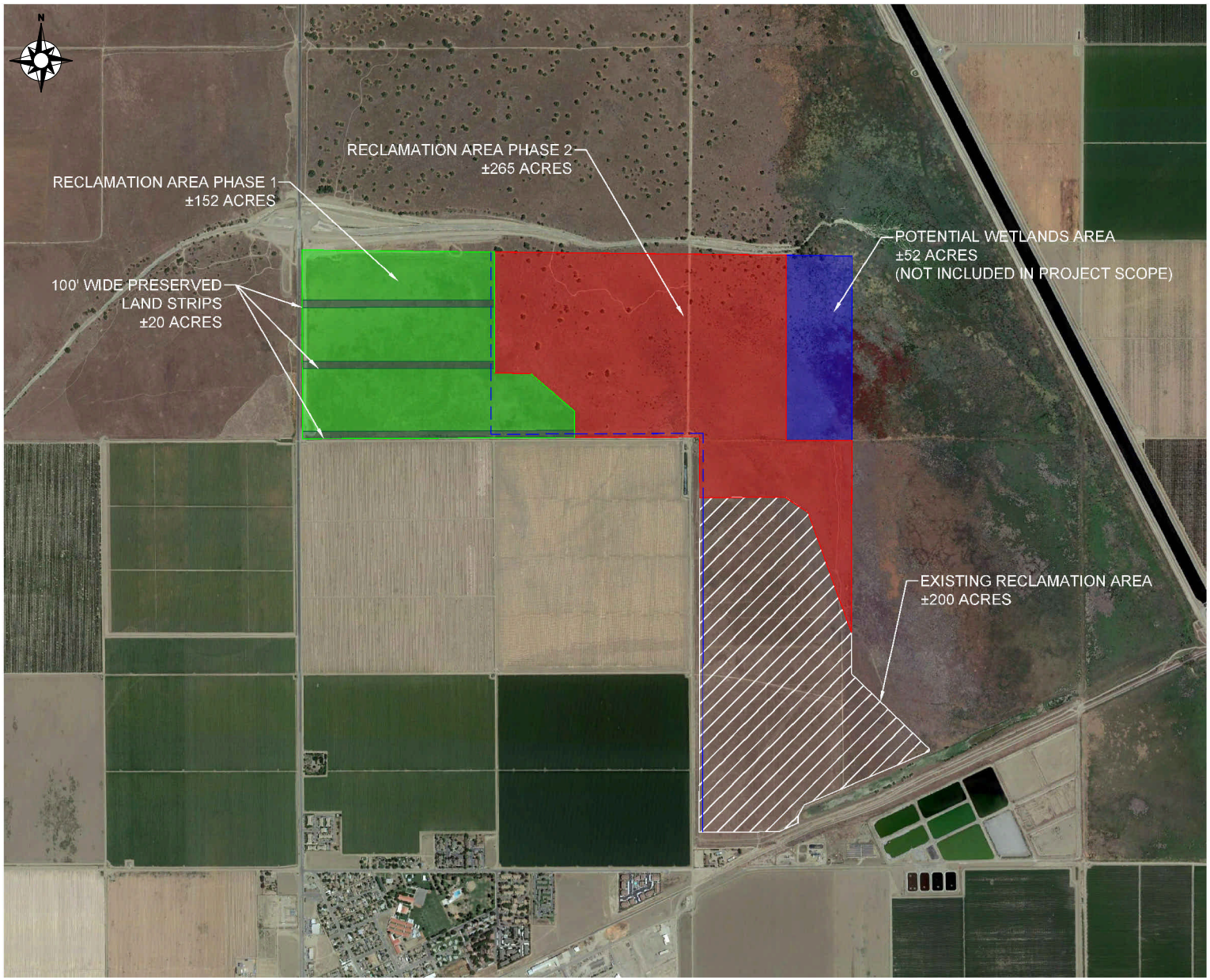
The proposed recycled water project will include approximately 6,280 linear feet of 21-inch diameter recycled water pipelines. The proposed pipeline will be connected to the 21-inch diameter recycled water line that lies on the 200-acre reclamation area that is currently being constructed (June 2020). All delivery and irrigation pipelines will be installed 3-feet underground.

Biological Considerations

The effluent reclamation field has been designed to include three (3) 100-foot wide strips of undisturbed land within the 152-acre area for Phase 1. The strips will occur in an east-west pattern within the Phase 1 area and will occupy a total of approximately 20 total acres. The purpose of the strips of land is to provide grassland habitat that would serve as denning/roosting/nesting habitat for burrowing owls (*Athene cunicularia*), American badgers (*Taxidea taxus*), San Joaquin kit fox, and short-nosed kangaroo rats (*Dipodomys nitratoides brevinasus*). This will provide connectivity between natural lands to the west and east and will also serve as foraging habitat for these species.

Miscellaneous Improvements

Other miscellaneous improvements include the construction of perimeter fencing, access roads and signage. The access road will consist of a 16-feet wide, 4-inch thick aggregate base roadway around the perimeter of the reclamation field. A chain link fence, 4 feet tall, will also be placed along the perimeter to enclose the reclamation field and will be raised six inches off the ground so SJKF can pass through the site. Recycled water signs will be placed every 100-feet along the perimeter of the fence. The signs will be an aluminum plate that is 10 inches wide and 14 inches long. The signs will read “Recycled Water Do Not Drink” in both English and Spanish.



CITY OF HURON

ADDITIONAL EFFLUENT RECLAMATION AREA
(PHASE 1 AND PHASE 2)

LEGEND

EXISTING PIPELINE

PROPOSED PIPELINE

NORTH

SCALE IN FEET

0 1,000 FT

FIGURE 1
PROPOSED RECLAMATION AREAS
PHASE 1 AND PHASE 2

Live Oak Associates, Inc.

Site Plan
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
6/16/2020	2023-03	5

4,000' 0 2,000' 4,000 feet
approximate scale

AM Consulting Engineers • 5130 N. Sixth Street, Suite 12[illegible] • Fresno, California 93710 • (559) 173 [illegible]37

1.2 Purpose

This assessment report has been prepared to provide reviewing agencies the information needed to assist in assessing potential project impacts to foraging SJKF and developing appropriate mitigation measures. Specifically, the USFWS requested an assessment of rodent burrow abundance and densities, as well as the extent of vegetative cover provided by Russian thistle (*Salsola tragus*). Russian thistle is generally considered unsuitable as habitat for the SJKF.

2.0 METHODS

Burrow and Russian thistle surveys were completed within the 500-acre site on January 29 and 30, 2020 by LOA ecologists Anna Godinho, Jeff Gurule, and Geoffrey Cline (USFWS Recovery Permit #50510A-5 and California Department of Fish and Wildlife Scientific Collecting Permit #5981 and Memorandums of Understanding for San Joaquin Kangaroo Rats), and on January 31, 2020 by the same three biologists, in addition to LOA ecologist Wendy Fisher. The surveys included walking transects spaced approximately 25-75 feet apart to ensure 100% visual coverage of the site. Representative pictures from the surveys can be found in Appendix A.

Throughout the survey all burrows and burrow mounds were investigated and identified as kangaroo rat (*Dipodomys sp.*), California ground squirrel (*Otospermophilus beecheyi*), other (i.e. fresh gopher mound or burrow, mouse, or unknown), potential San Joaquin kit fox, American badger (*Taxidea taxus*), or coyote (*Canis latrans*). The type of burrow (i.e., the species that created it), the number of burrows within burrow clusters, and the location of individual burrows and burrow clusters were recorded on various Garmin global positioning system (GPS) units. Representative pictures of some burrow types observed within the site can be found in Appendix A.

The survey also included investigating the distribution of Russian thistle within the survey area. Historical aerial images of the site were referenced prior to completing the site survey and it was determined that the current distribution of Russian thistle correlated with the June 30, 2018 distribution of Russian thistle. Therefore, areas supporting large patches of Russian thistle were noted. Then the acreages of Russian thistle were measured using *Google Earth Pro*.

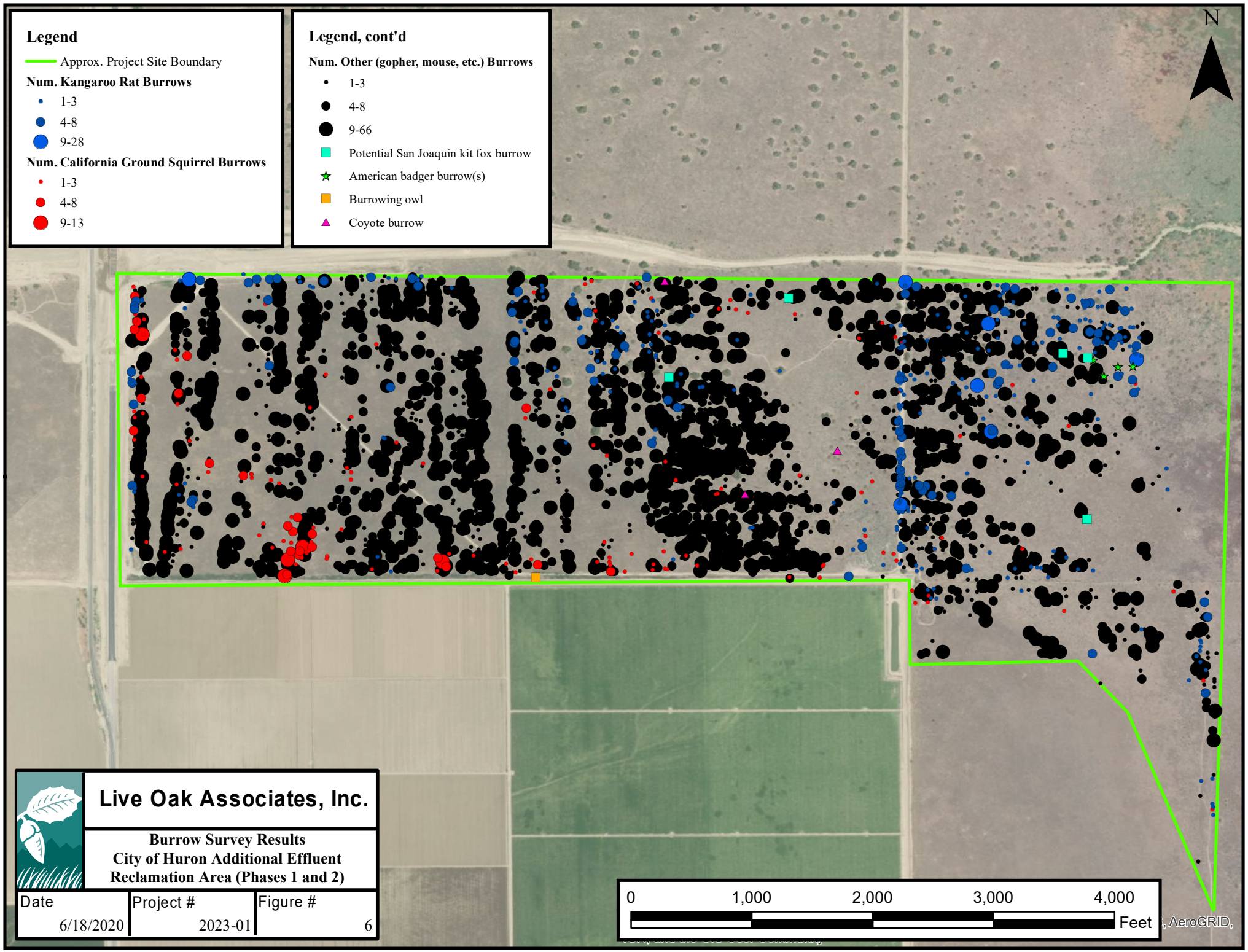
3.0 RESULTS

The team of LOA biologists walked transects totaling approximately 68 miles across the site and identified 20,088 burrows (or fresh gopher mounds) of various species types (Table 1, Figure 6). No SJKF sign was observed, however five burrows appeared to fit the dimensions (i.e. greater than 4") typical of SJKF dens (USFWS 2011). Six active American badger burrows, three coyote burrows, and one burrowing owl individual was also observed. The northeast portion of the site was not surveyed because shrub vegetation was too thick to walk through and observe burrows.

Table 1: Burrow Survey Results

Species	Total Burrows	Percentage of Site
Kangaroo rat	1,057	5.26
California ground squirrel	365	1.82
Other (gopher, mouse, etc.)	18,652	92.85
Potential San Joaquin kit fox	5	0.02
American badger	6	0.03
Coyote	3	0.01
Total	20,088	100.00

The remains of Russian thistle (an annual that dies by late summer) covered approximately four acres of the site and was lying within one roadway and along the southern boundary of the western two-thirds of the site. No germinates were observed.


Legend
Approx. Project Site Boundary
Num. Kangaroo Rat Burrows
1-3
4-8
9-28
Num. California Ground Squirrel Burrows
1-3
4-8
9-13
Legend, cont'd
Num. Other (gopher, mouse, etc.) Burrows
1-3
4-8
9-66
Potential San Joaquin kit fox burrow
American badger burrow(s)
Burrowing owl
Coyote burrow
N
Live Oak Associates, Inc.
Burrow Survey Results
City of Huron Additional Effluent
Reclamation Area (Phases 1 and 2)
Date
6/18/2020
Project #
2023-01
Figure #
6
0
1,000
2,000
3,000
4,000
Feet
, AeroGRID,

4.0 DISCUSSION

Valley saltbrush scrub and non-native grassland habitat of the project site provides potential foraging habitat for the SJKF, with a prey base consisting of kangaroo rats, mice of various species, California ground squirrels, and other species. Notwithstanding the suitable prey base present, other qualities render it less than ideal as habitat for SJKF. These qualities include the presence of known predators and competitors (coyote and American badger; Cypher it al. 2009, Cypher et al. 2000, White et al. 2000). Predators and competitors likely deter SJKF use of the site. In short, some areas of the site would be risky for a SJKF to forage or den in.

The results of LOA's survey suggest that SJKF could use some areas of the project site, but there is currently no evidence that individual kit foxes actually do. Burrows having the dimensions of a typical kit fox den were present, however no sign of kit fox was observed, and numerous burrows of competitors and predators were also present and exceeded the number of potential kit fox burrows. In addition, the project site, which is mostly located within a relatively small island of Valley saltbrush scrub and non-native grassland potentially suitable for the SJKF, is surrounded by extensive agricultural lands which are not as suitable for foraging SJKF. Therefore, medium quality SJKF foraging habitat within the project site is isolated from much higher quality habitats located 7 to 10 miles to the west and in areas where the SJKF has more recently been observed (CDFW 2020). The habitats of the project site and adjacent lands (to the north, east, and west) have been characterized as medium quality habitat with the nearest high quality habitat located approximately 7.5 miles west of the site within Anticline Ridge and the Guijarral Hills (Cypher et al. 2013). While there have not been documented sightings of SJKF within 10 miles of the site in approximately 21 years (CDFW 2020), this may be attributable to an absence of recent studies for SJKF within the site vicinity, and not an absence of kit foxes. However, to access the site a SJKF would have to cross through approximately 7.5 miles of agricultural lands or follow the Los Gatos Creek corridor from the high quality habitat areas west of highway Interstate 5, to access the site.

Conversion of the Valley saltbrush scrub and non-native grassland habitats of the site into irrigated agricultural land will replace medium quality SJKF habitat with alfalfa field and reduce the amount of such habitat available to potential foraging and dispersing SJKF. When more suitable habitats with more prey are present adjacent to agricultural lands, SJKF prefer the non-agricultural areas for foraging (Warrick et al. 2007). While prey densities within the alfalfa fields

will not match those currently within habitats of the site, some foraging opportunities will likely be available in the margins of the alfalfa field after construction.

While the site may serve as a stepping stone between isolated areas of other natural lands (USFWS 1998), conversion of the site to irrigated agriculture should not preclude the SJKF from passing through it because after conversion foraging and dispersing SJKF may be able to use the margins of the alfalfa field and the other non-native grassland habitats to the north and west of the site.

5.0 REFERENCES

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APPENDIX A: REPRESENTATIVE PICTURES OF THE SITE

Picture 1: Non-native grassland habitat of the site.

Picture 2: Valley saltbrush scrub habitat of the site.

Picture 3: One of the many kangaroo rat burrows of the site.

Picture 4: One of the many other (gopher mounds or burrows, unknown, etc.) burrows of the site.

Picture 5: One of the potential San Joaquin kit fox burrows observed on the site.

Picture 6: One of the active American badger burrows observed on the site.

Picture 7: Russian thistle on the site. Picture was taken at the southwest corner of the site, facing to the east.

APPENDIX F: USFWS STANDARDIZED RECOMMENDATIONS FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX PRIOR TO OR DURING GROUND DISTURBANCE

U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE ENDANGERED SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE

Prepared by the Sacramento Fish and Wildlife Office
January 2011

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. **However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act) and does not preclude the need for section 7 consultation or a section 10 incidental take permit for the proposed project.** Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). These protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

IS A PERMIT NECESSARY?

Certain acts need a permit from the Service which includes destruction of any known (occupied or unoccupied) or natal/pupping kit fox dens. Determination of the presence or absence of kit foxes and /or their dens should be made during the environmental review process. All surveys and monitoring described in this document must be conducted by a qualified biologist and these activities do not require a permit. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, the biologist(s) must be able to identify coyote, red fox,

gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities. **The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.**

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe

may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is

disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Appendix C

San Joaquin Kit Fox Habitat Assessment

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

SAN JOAQUIN KIT FOX HABITAT ASSESSMENT REPORT
CITY OF HURON ADDITIONAL EFFLUENT RECLAMATION AREA
(PHASES 1 AND 2)
FRESNO COUNTY, CALIFORNIA

Prepared for

Travis Crawford
Principal Environmental Planner
CRAWFORD & BOWEN PLANNING, INC.
113 N. Church Street, Suite 302
Visalia, CA 93291

&

THE CITY OF HURON

Prepared by

LIVE OAK ASSOCIATES, INC.

Geoffrey D. Cline, M.S., Senior Project Manager and Ecologist
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June 23, 2020 PN 2023-03

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www.loainc.com

EXECUTIVE SUMMARY

Live Oak Associates, Inc. prepared the following San Joaquin kit fox (*Vulpes macrotis*) habitat assessment for the City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Project. The site is located approximately one mile north of the City of Huron, in Fresno County, California. The purpose of this assessment is to assist the U.S. Fish and Wildlife Service in determining the value of the site for foraging kit fox. This assessment utilizes the results of a burrow and Russian thistle (*Salsola tragus*) survey within the Valley saltbrush scrub and non-native grassland habitats of the site, the historical observations of kit fox within the vicinity of the site, and other studies completed on SJKF. It assesses the suitability of the site for kit fox, the potential use by kit fox, and what the value of the habitats of the site will be for foraging kit fox after the site has been converted into an alfalfa field.

The approximately 68-mile transect survey conducted within the approximately 500-acre site identified 20,088 burrows (or fresh gopher mounds) being used by the following species types: kangaroo rat (*Dipodomys sp.*), California ground squirrel (*Otospermophilus beecheyi*), other (gopher, mouse, etc.), American badger (*Taxidea taxus*), coyote (*Canis latrans*). With the exception of American badger and coyote, the above species provide a prey base for kit fox. Five burrows appeared to meet the typical size for kit fox dens, however no kit fox sign was observed. One burrowing owl was observed.

The most recent observation of kit fox in the vicinity is from 1999, less than 10 miles southwest of the site in the Guijarral Hills, which is near other more recent observations of kit fox. The site is located within an island of Valley saltbrush scrub and non-native grassland, is considered medium quality habitat, and is isolated from much larger areas of higher quality habitat. Conversion of the site to agricultural habitat will likely reduce the overall value of the site for potential foraging and dispersing kit fox because the prey base will be more favorable in adjacent non-native grassland habitats.

The site may be used by foraging or dispersing kit fox and once the site is converted to alfalfa, foraging or dispersing kit fox may use the margins of the alfalfa field or other suitable habitats to the north, east, and west of the site.

TABLE OF CONTENTS

EXECUTIVE SUMMARY _____ *ii*

1.0 INTRODUCTION _____ *1*

1.1 Project Description _____ 1

1.2 Purpose _____ 9

2.0 METHODS _____ *10*

3.0 RESULTS _____ *11*

4.0 DISCUSSION _____ *13*

5.0 REFERENCES _____ *15*

APPENDIX A: REPRESENTATIVE PICTURES OF THE SITE _____ *17*

1.0 INTRODUCTION

The report that follows assesses the suitability of habitat for San Joaquin kit fox (*Vulpes macrotis*) (SJKF) within approximately 500 acres of non-native grassland habitat of the City of Huron Additional Effluent Reclamation Area (Phases 1 and 2) Project (or "project"). The report also assesses the likelihood that SJKF would be present in any of the suitable habitats and how SJKF may utilize these areas after they have been developed into an alfalfa field. The assessment has been based on the results of field surveys for habitat elements favorable for the occurrence of SJKF, historical observations of SJKF within the site vicinity, and other studies completed for SJKF.

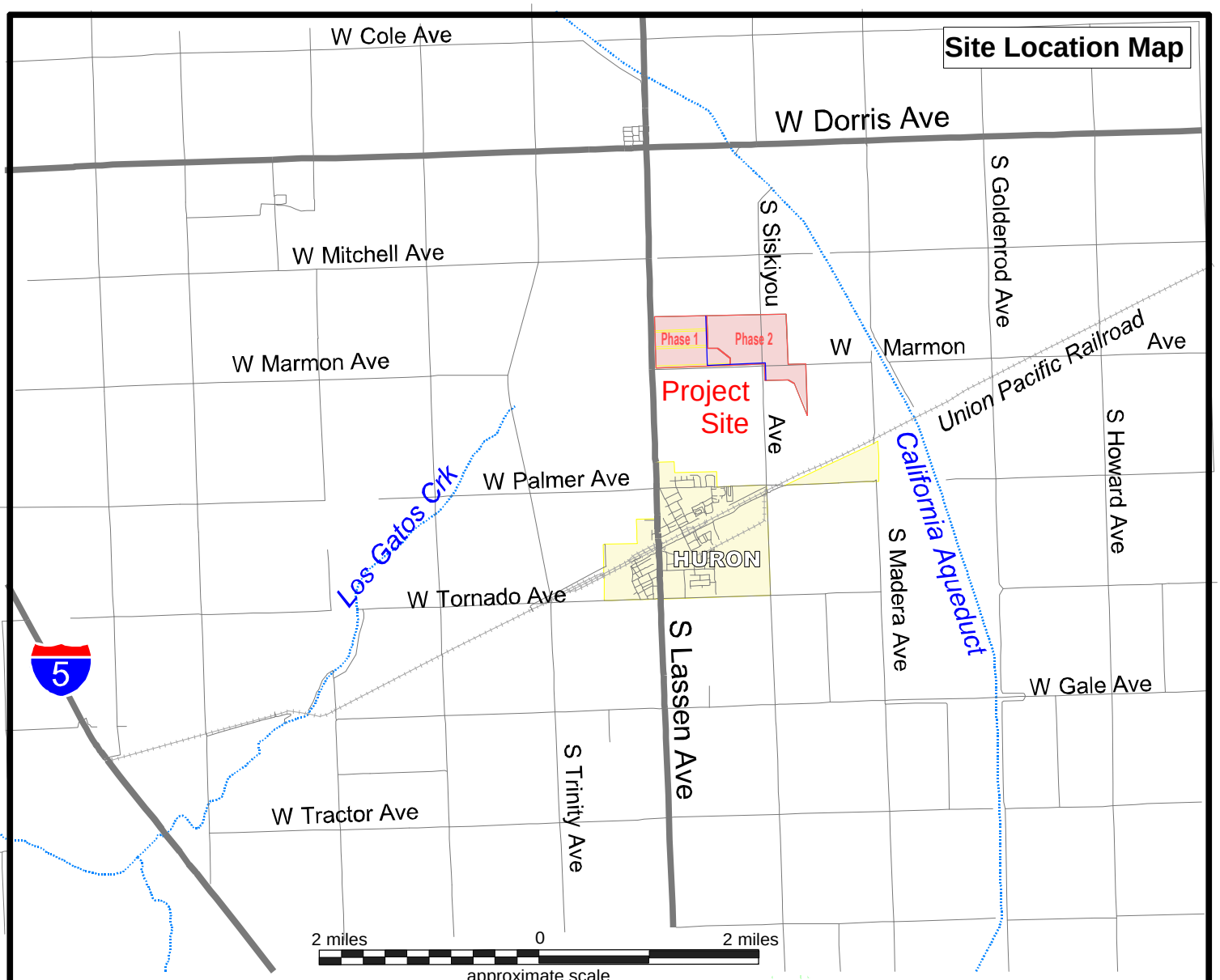
The approximately 500-acre project site (or "site") is located approximately 1 mile northeast of the center of Huron in western Fresno County (Figure 1), and can be found on the *Huron* U.S. Geological Survey (USGS) 7.5 minute quadrangle within Section 1 of Township 20 South, Range 17 East; and Sections 35 and 36 within Township 19 South, Range 17 East (Mt. Diablo Base and Meridian) (Figure 2).

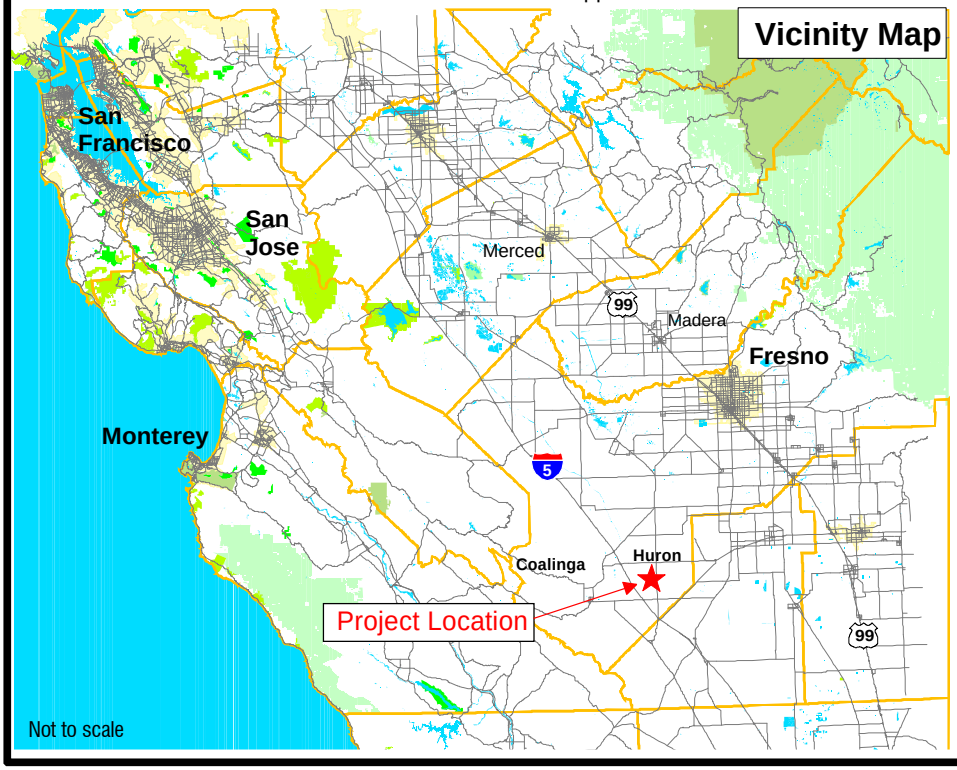
As described in our biological evaluation report, two biotic habitats are present on the site and include Valley saltbrush scrub and non-native grassland (Figure 3). Sixteen California Natural Diversity Database (CNDDB) records of SJKF were found within 10 miles of the site from 1975-1999 (Figure 4) (CDFW 2020).

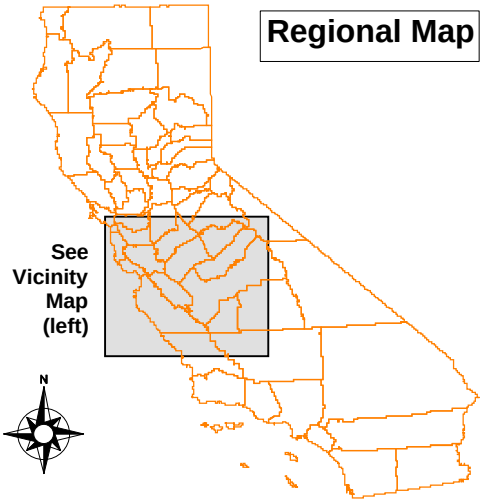
1.1 Project Description

The two-phased project is in addition to a previously approved 200-acre effluent disposal project that is located immediately north of the existing waste-water treatment project (WWTP) and immediately south and southeast of the proposed expansion areas proposed by the project. At full buildout, approximately 417 acres of land would be converted to agriculture (non-human consumption crops such as alfalfa), which would require improvements on the land such as installing an irrigation system and grading. Phase 1 includes 152 acres, and Phase 2 includes 265 acres, which will only be constructed if and when the City of Huron determines there is adequate demand. An additional 20 acres of land would be used to preserve existing grassland habitat (see discussion in *Biological Considerations* below).

In order to convey treated wastewater to the reclamation field, improvements on existing land will be required, in addition to new facilities and a conveyance system. Additional facilities and improvement include grading, pump stations, diversion structures, a tailwater return pond, alfalfa



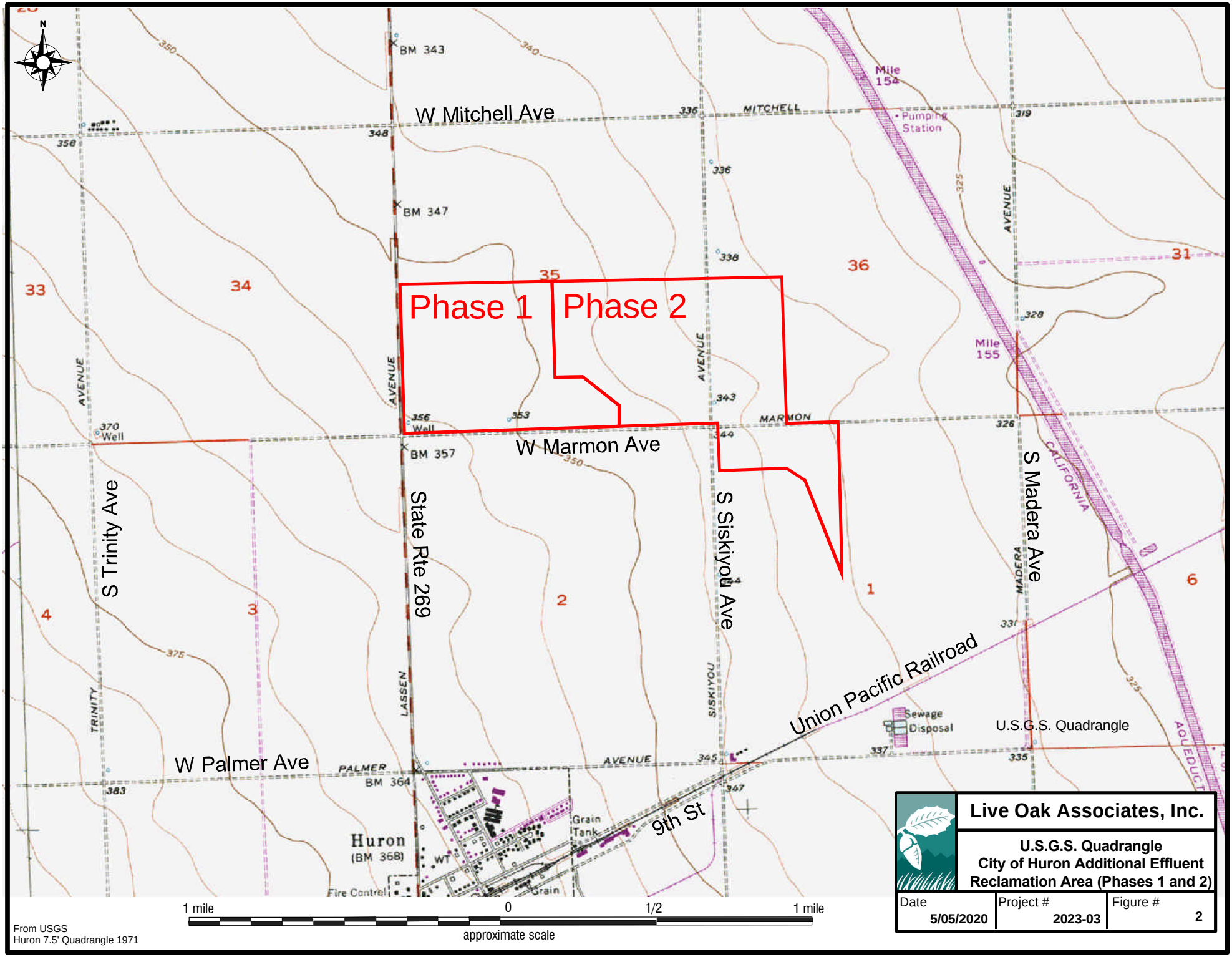




Live Oak Associates, Inc.

Site/Vicinity Map
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
5/05/2020	2023-03	1

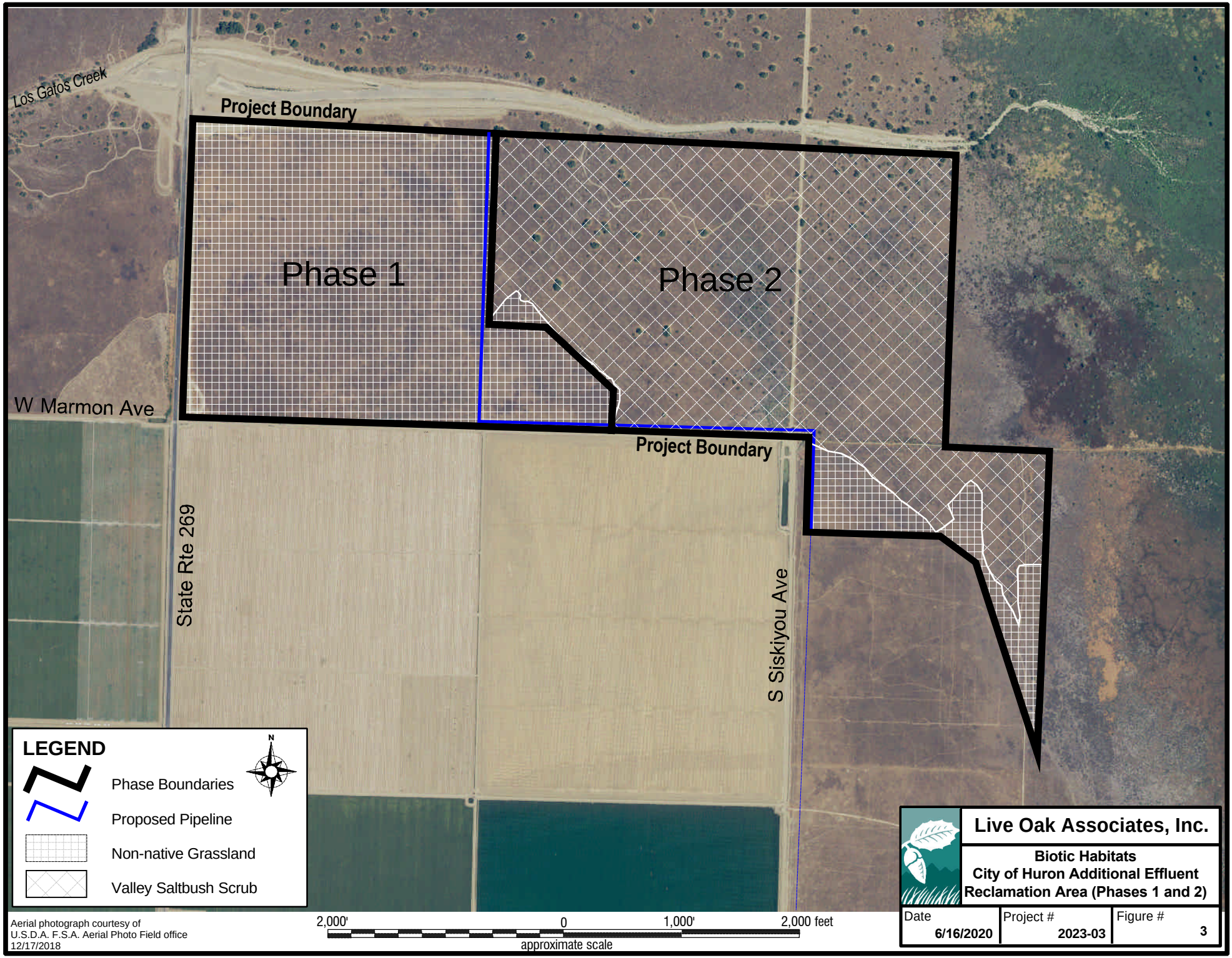


From USGS
Huron 7.5' Quadrangle 1971

Live Oak Associates, Inc.

U.S.G.S. Quadrangle
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
5/05/2020	2023-03	2

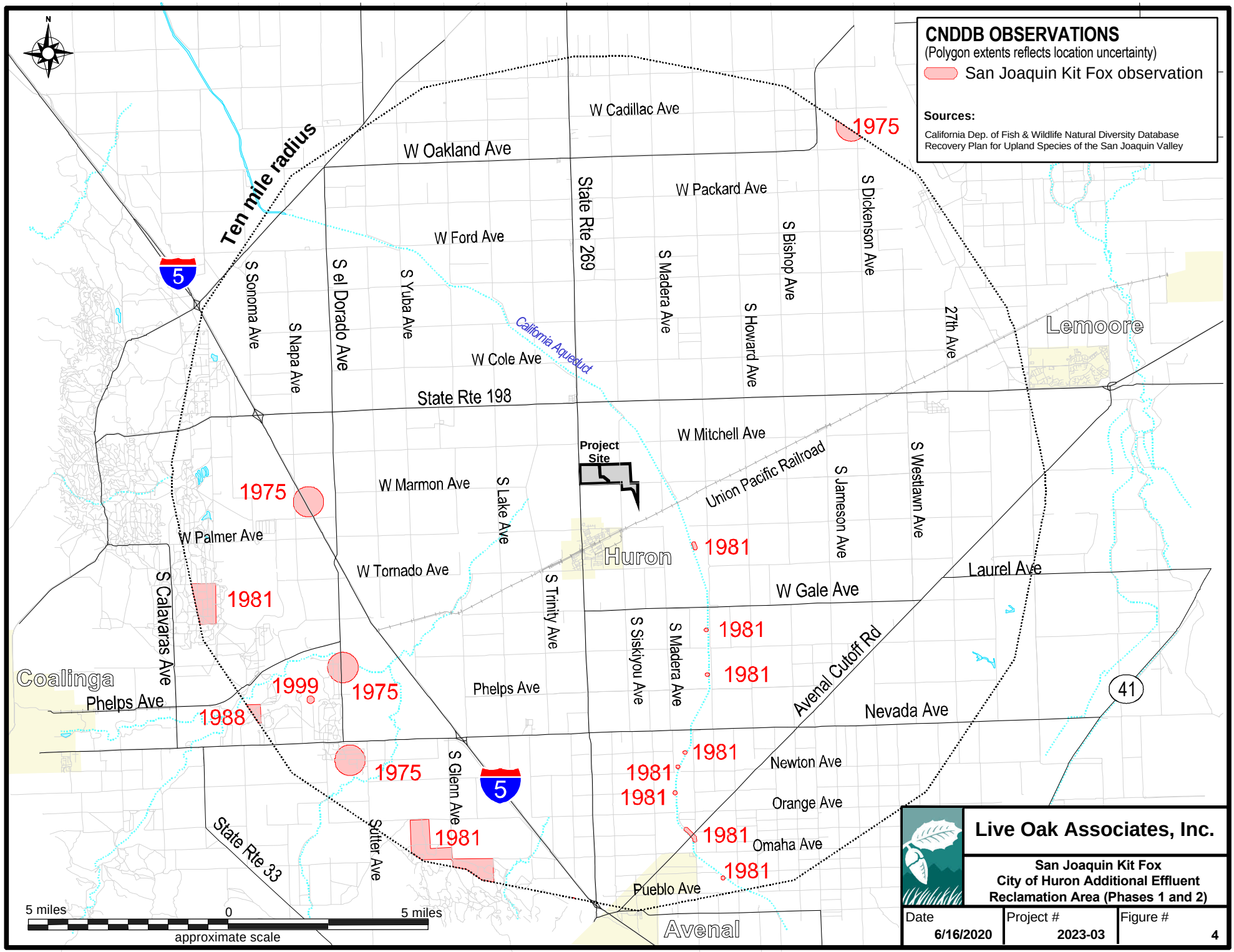


Aerial photograph courtesy of
U.S.D.A. F.S.A. Aerial Photo Field office
12/17/2018

Live Oak Associates, Inc.

Biotic Habitats
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
6/16/2020	2023-03	3


CNDDB OBSERVATIONS
(Polygon extents reflects location uncertainty)
San Joaquin Kit Fox observation
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
Recovery Plan for Upland Species of the San Joaquin Valley
Ten mile radius
W Cadillac Ave
W Oakland Ave
W Packard Ave
W Ford Ave
W Cole Ave
State Rte 198
W Mitchell Ave
W Marmon Ave
W Palmer Ave
W Tornado Ave
W Gale Ave
Laurel Ave
Phelps Ave
Nevada Ave
Newton Ave
Orange Ave
Omaha Ave
Pueblo Ave
Avenal
Lemoore
Huron
Coalinga
Project Site
State Rte 269
S Dickenson Ave
S Bishop Ave
S Madera Ave
S Howard Ave
27th Ave
S Sonoma Ave
S Napa Ave
S el Dorado Ave
S Yuba Ave
California Aqueduct
S Lake Ave
S Trinity Ave
Union Pacific Railroad
S Jameson Ave
S Westlawn Ave
S Siskiyou Ave
S Madera Ave
Avenal Cutoff Rd
S Calavaras Ave
S Glenn Ave
Sutter Ave
State Rte 33
1975
1981
1999
1988
5
41
5 miles
0
5 miles
approximate scale
Live Oak Associates, Inc.
San Joaquin Kit Fox
City of Huron Additional Effluent
Reclamation Area (Phases 1 and 2)
Date
6/16/2020
Project #
2023-03
Figure #
4

valves, and new pipelines to convey treated effluent to the reclamation field. The pipeline routing and design characteristics are discussed further in the following paragraphs. See Figure 5 for a site plan map.

Pipeline Alignments

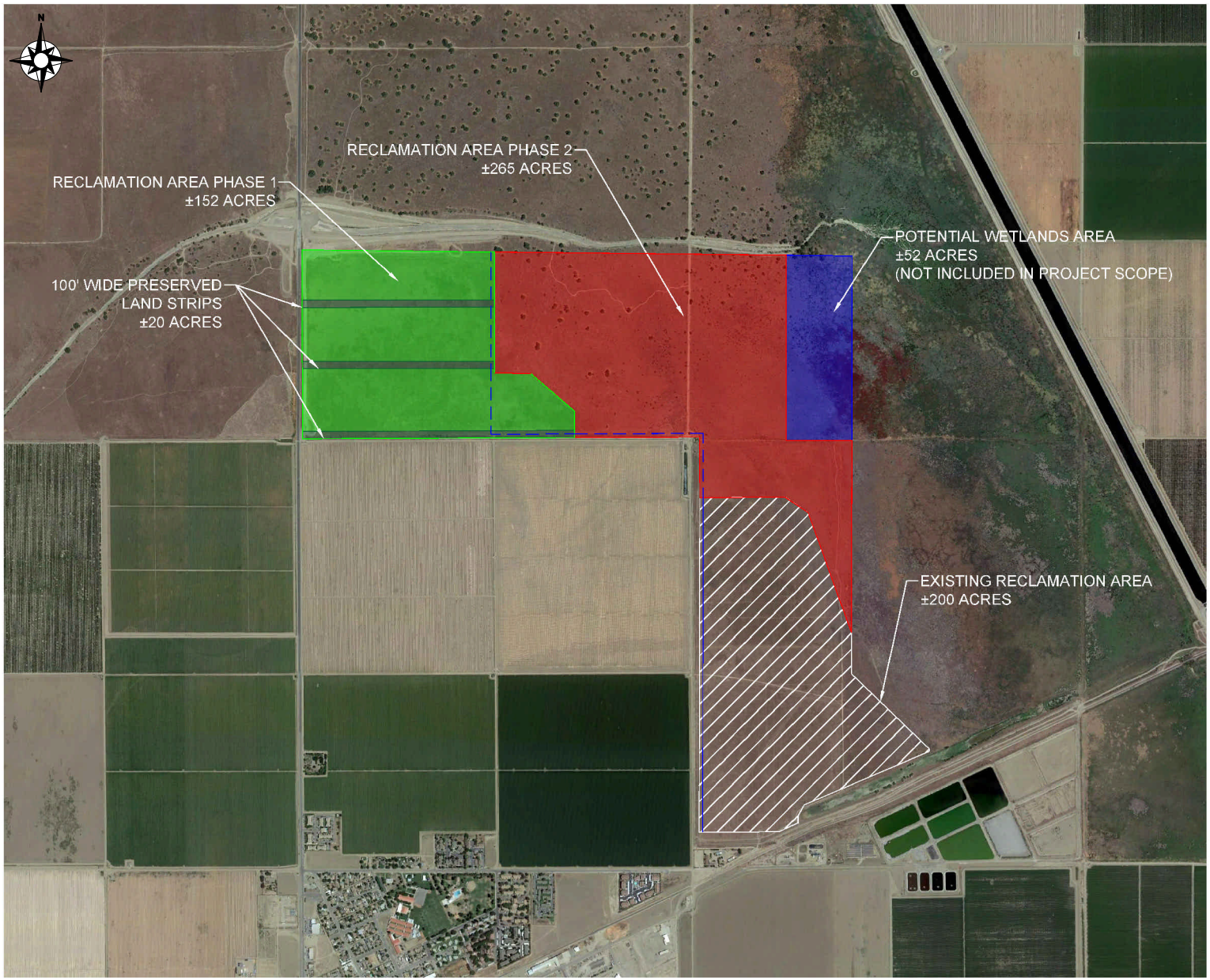
The proposed recycled water project will include approximately 6,280 linear feet of 21-inch diameter recycled water pipelines. The proposed pipeline will be connected to the 21-inch diameter recycled water line that lies on the 200-acre reclamation area that is currently being constructed (June 2020). All delivery and irrigation pipelines will be installed 3-feet underground.

Biological Considerations

The effluent reclamation field has been designed to include three (3) 100-foot wide strips of undisturbed land within the 152-acre area for Phase 1. The strips will occur in an east-west pattern within the Phase 1 area and will occupy a total of approximately 20 total acres. The purpose of the strips of land is to provide grassland habitat that would serve as denning/roosting/nesting habitat for burrowing owls (*Athene cunicularia*), American badgers (*Taxidea taxus*), San Joaquin kit fox, and short-nosed kangaroo rats (*Dipodomys nitratoides brevinasus*). This will provide connectivity between natural lands to the west and east and will also serve as foraging habitat for these species.

Miscellaneous Improvements

Other miscellaneous improvements include the construction of perimeter fencing, access roads and signage. The access road will consist of a 16-feet wide, 4-inch thick aggregate base roadway around the perimeter of the reclamation field. A chain link fence, 4 feet tall, will also be placed along the perimeter to enclose the reclamation field and will be raised six inches off the ground so SJKF can pass through the site. Recycled water signs will be placed every 100-feet along the perimeter of the fence. The signs will be an aluminum plate that is 10 inches wide and 14 inches long. The signs will read “Recycled Water Do Not Drink” in both English and Spanish.



CITY OF HURON

ADDITIONAL EFFLUENT RECLAMATION AREA
(PHASE 1 AND PHASE 2)

LEGEND

EXISTING PIPELINE

PROPOSED PIPELINE

NORTH

SCALE IN FEET

0 1,000 FT

FIGURE 1
PROPOSED RECLAMATION AREAS
PHASE 1 AND PHASE 2

Live Oak Associates, Inc.

Site Plan
City of Huron Additional Effluent Reclamation Area (Phases 1 and 2)

Date	Project #	Figure #
6/16/2020	2023-03	5

4,000' 0 2,000' 4,000 feet
approximate scale

AM Consulting Engineers • 5130 N. Sixth Street, Suite 12[illegible] • Fresno, California 93710 • (559) 173 [illegible]37

1.2 Purpose

This assessment report has been prepared to provide reviewing agencies the information needed to assist in assessing potential project impacts to foraging SJKF and developing appropriate mitigation measures. Specifically, the USFWS requested an assessment of rodent burrow abundance and densities, as well as the extent of vegetative cover provided by Russian thistle (*Salsola tragus*). Russian thistle is generally considered unsuitable as habitat for the SJKF.

2.0 METHODS

Burrow and Russian thistle surveys were completed within the 500-acre site on January 29 and 30, 2020 by LOA ecologists Anna Godinho, Jeff Gurule, and Geoffrey Cline (USFWS Recovery Permit #50510A-5 and California Department of Fish and Wildlife Scientific Collecting Permit #5981 and Memorandums of Understanding for San Joaquin Kangaroo Rats), and on January 31, 2020 by the same three biologists, in addition to LOA ecologist Wendy Fisher. The surveys included walking transects spaced approximately 25-75 feet apart to ensure 100% visual coverage of the site. Representative pictures from the surveys can be found in Appendix A.

Throughout the survey all burrows and burrow mounds were investigated and identified as kangaroo rat (*Dipodomys sp.*), California ground squirrel (*Otospermophilus beecheyi*), other (i.e. fresh gopher mound or burrow, mouse, or unknown), potential San Joaquin kit fox, American badger (*Taxidea taxus*), or coyote (*Canis latrans*). The type of burrow (i.e., the species that created it), the number of burrows within burrow clusters, and the location of individual burrows and burrow clusters were recorded on various Garmin global positioning system (GPS) units. Representative pictures of some burrow types observed within the site can be found in Appendix A.

The survey also included investigating the distribution of Russian thistle within the survey area. Historical aerial images of the site were referenced prior to completing the site survey and it was determined that the current distribution of Russian thistle correlated with the June 30, 2018 distribution of Russian thistle. Therefore, areas supporting large patches of Russian thistle were noted. Then the acreages of Russian thistle were measured using *Google Earth Pro*.

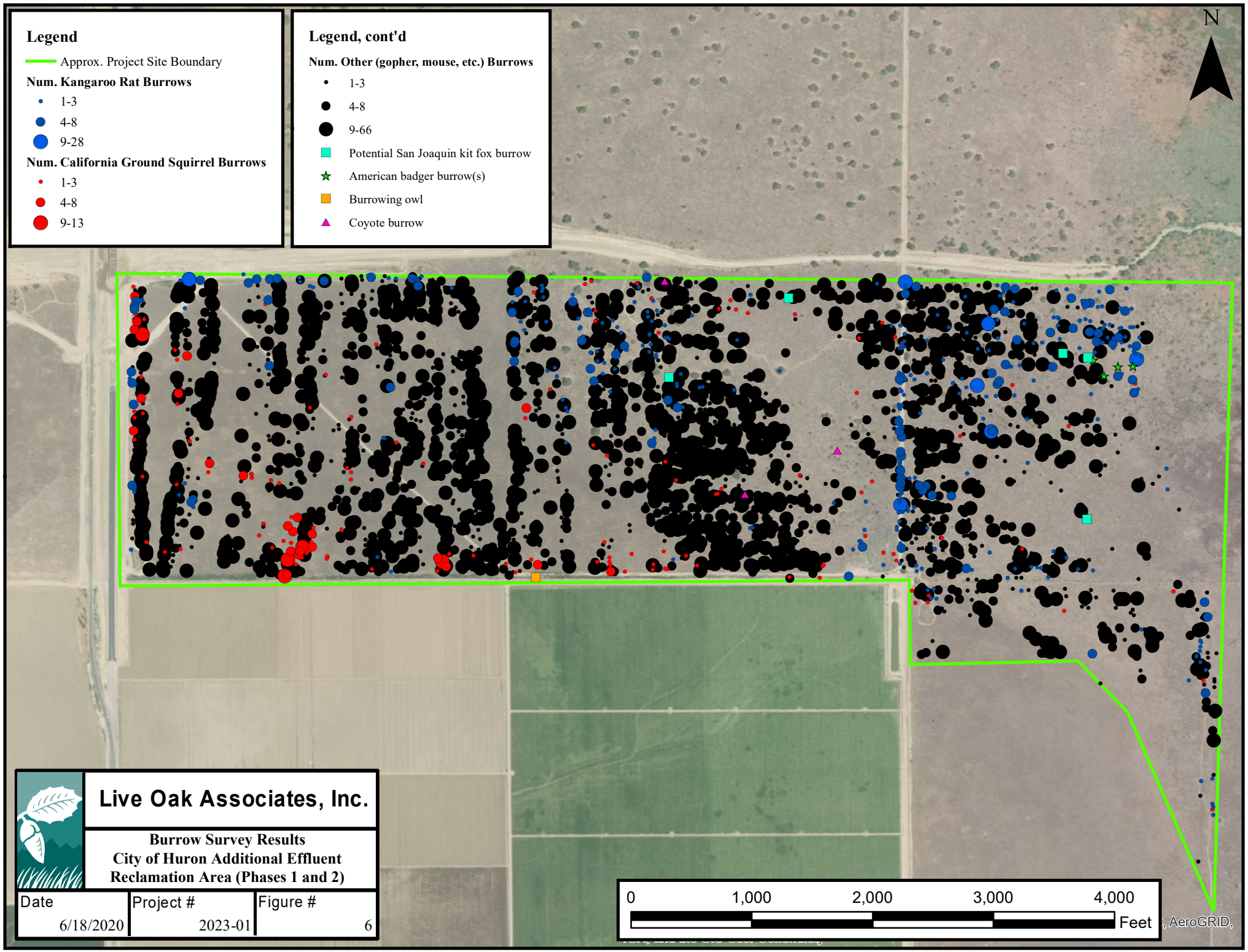
3.0 RESULTS

The team of LOA biologists walked transects totaling approximately 68 miles across the site and identified 20,088 burrows (or fresh gopher mounds) of various species types (Table 1, Figure 6). No SJKF sign was observed, however five burrows appeared to fit the dimensions (i.e. greater than 4") typical of SJKF dens (USFWS 2011). Six active American badger burrows, three coyote burrows, and one burrowing owl individual was also observed. The northeast portion of the site was not surveyed because shrub vegetation was too thick to walk through and observe burrows.

Table 1: Burrow Survey Results

Species	Total Burrows	Percentage of Site
Kangaroo rat	1,057	5.26
California ground squirrel	365	1.82
Other (gopher, mouse, etc.)	18,652	92.85
Potential San Joaquin kit fox	5	0.02
American badger	6	0.03
Coyote	3	0.01
Total	20,088	100.00

The remains of Russian thistle (an annual that dies by late summer) covered approximately four acres of the site and was lying within one roadway and along the southern boundary of the western two-thirds of the site. No germinates were observed.


Legend
Approx. Project Site Boundary
Num. Kangaroo Rat Burrows
1-3
4-8
9-28
Num. California Ground Squirrel Burrows
1-3
4-8
9-13
Legend, cont'd
Num. Other (gopher, mouse, etc.) Burrows
1-3
4-8
9-66
Potential San Joaquin kit fox burrow
American badger burrow(s)
Burrowing owl
Coyote burrow
N
Live Oak Associates, Inc.
Burrow Survey Results
City of Huron Additional Effluent
Reclamation Area (Phases 1 and 2)
Date
6/18/2020
Project #
2023-01
Figure #
6
0
1,000
2,000
3,000
4,000
Feet
, AeroGRID,

4.0 DISCUSSION

Valley saltbrush scrub and non-native grassland habitat of the project site provides potential foraging habitat for the SJKF, with a prey base consisting of kangaroo rats, mice of various species, California ground squirrels, and other species. Notwithstanding the suitable prey base present, other qualities render it less than ideal as habitat for SJKF. These qualities include the presence of known predators and competitors (coyote and American badger; Cypher it al. 2009, Cypher et al. 2000, White et al. 2000). Predators and competitors likely deter SJKF use of the site. In short, some areas of the site would be risky for a SJKF to forage or den in.

The results of LOA's survey suggest that SJKF could use some areas of the project site, but there is currently no evidence that individual kit foxes actually do. Burrows having the dimensions of a typical kit fox den were present, however no sign of kit fox was observed, and numerous burrows of competitors and predators were also present and exceeded the number of potential kit fox burrows. In addition, the project site, which is mostly located within a relatively small island of Valley saltbrush scrub and non-native grassland potentially suitable for the SJKF, is surrounded by extensive agricultural lands which are not as suitable for foraging SJKF. Therefore, medium quality SJKF foraging habitat within the project site is isolated from much higher quality habitats located 7 to 10 miles to the west and in areas where the SJKF has more recently been observed (CDFW 2020). The habitats of the project site and adjacent lands (to the north, east, and west) have been characterized as medium quality habitat with the nearest high quality habitat located approximately 7.5 miles west of the site within Anticline Ridge and the Guijarral Hills (Cypher et al. 2013). While there have not been documented sightings of SJKF within 10 miles of the site in approximately 21 years (CDFW 2020), this may be attributable to an absence of recent studies for SJKF within the site vicinity, and not an absence of kit foxes. However, to access the site a SJKF would have to cross through approximately 7.5 miles of agricultural lands or follow the Los Gatos Creek corridor from the high quality habitat areas west of highway Interstate 5, to access the site.

Conversion of the Valley saltbrush scrub and non-native grassland habitats of the site into irrigated agricultural land will replace medium quality SJKF habitat with alfalfa field and reduce the amount of such habitat available to potential foraging and dispersing SJKF. When more suitable habitats with more prey are present adjacent to agricultural lands, SJKF prefer the non-agricultural areas for foraging (Warrick et al. 2007). While prey densities within the alfalfa fields

will not match those currently within habitats of the site, some foraging opportunities will likely be available in the margins of the alfalfa field after construction.

While the site may serve as a stepping stone between isolated areas of other natural lands (USFWS 1998), conversion of the site to irrigated agriculture should not preclude the SJKF from passing through it because after conversion foraging and dispersing SJKF may be able to use the margins of the alfalfa field and the other non-native grassland habitats to the north and west of the site.

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APPENDIX A: REPRESENTATIVE PICTURES OF THE SITE

Picture 1: Non-native grassland habitat of the site.

Picture 2: Valley saltbrush scrub habitat of the site.

Picture 3: One of the many kangaroo rat burrows of the site.

Picture 4: One of the many other (gopher mounds or burrows, unknown, etc.) burrows of the site.

Picture 5: One of the potential San Joaquin kit fox burrows observed on the site.

Picture 6: One of the active American badger burrows observed on the site.

Picture 7: Russian thistle on the site. Picture was taken at the southwest corner of the site, facing to the east.

Appendix D

Cultural Resources Report

CLASS III INVENTORY/PHASE I SURVEY, HURON WATER RECLAMATION PROJECT, FRESNO COUNTY, CALIFORNIA

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June 2020

PN 34540.00

TABLE OF CONTENTS

Chapter **Page**

MANAGEMENT SUMMARY ..... **iii**

1. INTRODUCTION AND REGULATORY CONTEXT **1**
1.1 PROJECT LOCATION 1
1.2 PROJECT DESCRIPTION AND APE 2
1.3 REGULATORY CONTEXT 2
1.3.1 California Environmental Quality Act 2
1.3.2 National Historic Preservation Act 3
1.3.3 National Register Criteria for Evaluation 4

2. ENVIRONMENTAL AND CULTURAL BACKGROUND **9**
2.1 GEOARCHAEOLOGICAL SENSITIVITY AND ENVIRONMENTAL BACKGROUND 9
2.2 ETHNOGRAPHIC BACKGROUND 7
2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND 11
2.4 HISTORICAL BACKGROUND 14
2.5 RESEARCH DESIGN 16
2.5.1 Pre-Contact Archaeology 16
2.5.2 Historical Archaeology: Native American 17
2.5.3 Historical Archaeology: Euro-American 18
2.5.4 Significant Themes 19

3. ARCHIVAL RECORDS SEARCH AND TRIBAL COORDINATION **25**
3.1 ARCHIVAL RECORDS SEARCH 25

4. METHODS AND RESULTS **27**
4.1 FIELD METHODS 27
4.2 SURVEY RESULTS 27

5. CONCLUSIONS AND RECOMMENDATIONS **31**
5.1 SUMMARY 31
5.2 RECOMMENDATIONS 31

REFERENCES **33**

CONFIDENTIAL APPENDICES **37**

LIST OF FIGURES

Page

Figure 1. Regional Location of the Huron Water Reclamation Project, Fresno County, California. 6
Figure 2. Location of the Huron Water Reclamation Project, Fresno County, California. 7
Figure 3. Overview from the northern boundary, looking south down the only dirt road bisecting the Project APE. 28
Figure 4. Overview of eastern half from the northern boundary, looking southwest. 28
Figure 5. Overview of the southern triangular offshoot, looking north. 29

LIST OF TABLES

Page

Table 1. Survey reports within the APE 25
Table 2. Survey reports within 0.5-mi of the APE..... 26
Table 3. Resources within 0.5-mi of the APE..... 26

MANAGEMENT SUMMARY

An intensive Class III cultural resources inventory/Phase I survey was conducted for Huron Water Reclamation Project (Project), which involves irrigation system improvements on a 500-acre (ac) area where it will use reclaimed treated wastewater effluent. The Project area of potential effect (APE) is located just north of the City of Huron, Fresno County, California. Petra Resource Management conducted this study, with David S. Whitley, Ph.D., RPA, serving as principal investigator. The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and the California Environmental Quality Act.

The APE for the Project consists of the area of potential ground surface disturbance resulting from the grading and irrigation system improvements, including access and staging areas. The horizontal Project APE consists of approximately 500-ac where existing fields will be graded to allow for gravity-flow water spread and improved irrigation systems. The vertical Project APE is estimated at 10-feet (ft), the maximum depth of any excavations.

A records search of site files and maps was conducted at the Southern San Joaquin Valley Archaeological Information Center (IC), California State University, Bakersfield. The records search indicated that eight previous studies had covered the study area in its entirety and that no cultural resources of any kind were known to exist within the APE.

A Sacred Lands File Request was also submitted to the Native American Heritage Commission (NAHC), the results of which indicated that no sacred sites or tribal cultural resources were known in, or in the vicinity of, the APE. Outreach letters and follow-up emails were then sent to the tribal contact list provided by the NAHC. Santa Rosa Rancheria – Tachi-Yokut responded on May 14th, 2020 requesting to be retained to provide a cultural presentation to all construction staff and the landowner prior to Project activities. The Dunlap Band of Mono Indians responded on May 27th, 2020, deferring to the Santa Rosa Rancheria for this Project.

The Class III inventory/Phase I survey fieldwork was conducted on May 21st and 22nd, 2020 with parallel transects spaced at 15-meter intervals walked across the approximately 500-ac APE. No cultural resources of any kind were identified as a result of the survey, confirming the results of previous surveys.

Based on these findings, the proposed Huron Water Reclamation Project does not have the potential to result in adverse impacts or effects to historical resources or historic properties, and a determination of no significant impact under CEQA and no adverse effect under Section 106 is recommended. In the unlikely event that cultural resources are identified during the project, work should be halted within a 100-foot radius of the find, and a qualified archaeologist should be contacted to evaluate the newly discovered resource.

1. INTRODUCTION AND REGULATORY CONTEXT

Petra Resource Management was retained by Crawford & Bowen Planning to conduct an intensive Class III inventory/Phase I cultural resources survey for the Huron Water Reclamation Project. The Project is located just north of the City of Huron, Fresno County, California (Figures 1 and 2). The study was undertaken to assist with compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the California Environmental Protection Act (CEQA). The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historical resources or historic properties do not occur as a result of project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

David S. Whitley, Ph.D., RPA, served as principal investigator and the fieldwork was conducted by Associate Archaeologist Robert Azpitarte, B.A., with assistance in the field by Assistant Archaeologists Stacey Escamilla, B.A., Maria Silva, B.A., and Donna Buehler, B.A.

This document constitutes a report on the Class III inventory/Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; Native American outreach; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the study area.

1.1 PROJECT LOCATION

The City of Huron is proposing to recycle treated effluent on agricultural land adjacent to their existing wastewater treatment plant (WWTP), north of Huron, Fresno County, within Sections 35 and 36 (Township 19 South/Range 17 East, M.D.B.M.) and Section 1 (Township 19 South/Range 17 East, M.D.B.M.). The Project area is bordered on the west by Lassen Avenue, and occupies the land to the north, northeast, and east of the intersection of Marmon Avenue and Siskiyou Avenue. The California Aqueduct is located less than a half mile to the east of the Project area. This places the Project on the open flats of the San Joaquin Valley. Elevation within the Project APE, which is nearly flat, ranges from approximately 345-feet (ft) above mean sea level (amsl) at the west end to approximately 330-ft amsl at the east end.

1.2 PROJECT DESCRIPTION AND APE

The City of Huron previously leased 200-ac as part of a long-term agreement with the United States Bureau of Reclamation (USBR) to utilize land north of the WWTP to grow non-human consumption agricultural crops using treated effluent. The City is interested in leasing an additional 500-ac in which to grow additional agricultural crops using the treated effluent.

The project will consist of irrigation system improvements, including diversion structures, alfalfa valves, and recycled water pipelines ranging between 8 and 24-inches (in) in diameter. An existing recycled water pump station will be used to convey treated wastewater to the additional agricultural fields, which will be graded to allow spread over the field by gravity flow. Water runoff from the field will flow into an irrigation ditch which will then flow into a tailwater return pond. A tailwater return pump will return water from the collection pond to the head of the irrigation system. Additional improvements will include an aggregate base access roadway surrounding the perimeter and through the middle of the reclamation field, chain link perimeter fencing, and signage placed every 100-ft along the fencing.

The horizontal Project APE totals approximately 500-ac and consists of all areas of ground-surface disturbance, including work, lay-down and staging areas at the Project locations. The vertical APE is estimated at 10-ft, the maximum depth of grading and pipeline trenching.

1.3 REGULATORY CONTEXT

1.3.1 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

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

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

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

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

Unique resources under CEQA, in slight contrast, are those that represent:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

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

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

1.3.2 National Historic Preservation Act

The NHPA of 1966, as amended (54 United States Code 300101 *et seq*.), is the primary federal legislation that outlines the federal government's responsibility to consider the effects of its actions on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800 describes the process that the federal agency shall take to identify cultural resources and assess the level of effect that the proposed undertaking will have on historic properties. An undertaking is defined as a "…project, activity or program funded in whole or in part, under the direct or indirect jurisdiction of a federal agency." This includes projects that are carried out by, or on behalf of, the agency; those carried out with federal assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation, or approval by, a federal agency.

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Those cultural resources that are listed on, or are eligible for inclusion in, the National Register of Historic Places (NRHP) are referred to as historic properties. The criteria for NRHP eligibility are outlined at 36 CFR Part 60. Other applicable federal cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPA), and the Archaeological Resources Protection Act (ARPA).

Compliance with Section 106 of the NHPA (36 CFR Part 800) follows a series of steps that are designed to identify and consult with interested parties, determine the study area, determine if historic properties are present within the study area, and assess the effects the undertaking will have on historic properties. Section 106 requires consultation with Native American Tribes concerning the identification of sites of religious or cultural significance and with individuals or groups who are entitled, or requested, to be consulting parties. The regulations at 36 CFR Part 800.5 require federal agencies to apply the criteria of adverse effect to the historic properties identified within the study area. The criteria of adverse effect, defined at 36 CFR Part 800.5(a)(1), states that:

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

The 36 CFR Part 800 regulations include consultation with the State Historic Preservation Officer (SHPO) to provide an opportunity to comment on, and concur with, the Reclamations' determinations. If the undertaking would result in adverse effects to historic properties, these adverse effects must be resolved in consultation with the SHPO and other parties identified during the Section 106 process before the undertaking can proceed to implementation.

1.3.3 National Register Criteria for Evaluation

The criteria for evaluation of NRHP eligibility are outlined at 36 CFR Part 60.4. A district, site, building, structure, or object must generally be at least 50 years old to be eligible for consideration as a historic property. That district, site, building, structure, or object must retain integrity of location, design, setting, materials, workmanship, feelings, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archeology, engineering, and culture. A district, site, building, structure, or object must:

> (A) Be associated with events that have made a significant contribution to the broad patterns of history; or
>
> (B) Be associated with the lives of people significant in our past; or
>
> (C) Embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> (D) Have yielded, or may be likely to yield, information important in prehistory or history.

A site must have integrity and meet one of the four criteria of eligibility to demonstrate its historic associations in order to convey its significance. A property must be associated with one or more events important in the history or prehistory in order to be considered for listing under Criterion A. Additionally, the specific association of the property, itself, must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to the history can be identified and documented. Properties significant for their physical design or construction under Criterion C must have features with characteristics that exemplify such elements as architecture, landscape architecture, engineering, and artwork. Criterion D most commonly applies to properties that have the potential to answer, in whole or in part, important research questions about human history that can only be answered by the actual physical materials of cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to the prehistory and history (National Register Bulletin 15).

A district, site, building, structure, or object may also be eligible for consideration as a historic property if that property meets the criteria considerations for properties generally less than 50 years old, in addition to possessing integrity and meeting the criteria for evaluation.

Figure 1. Regional Location of the Huron Water Reclamation Project, Fresno County, California.

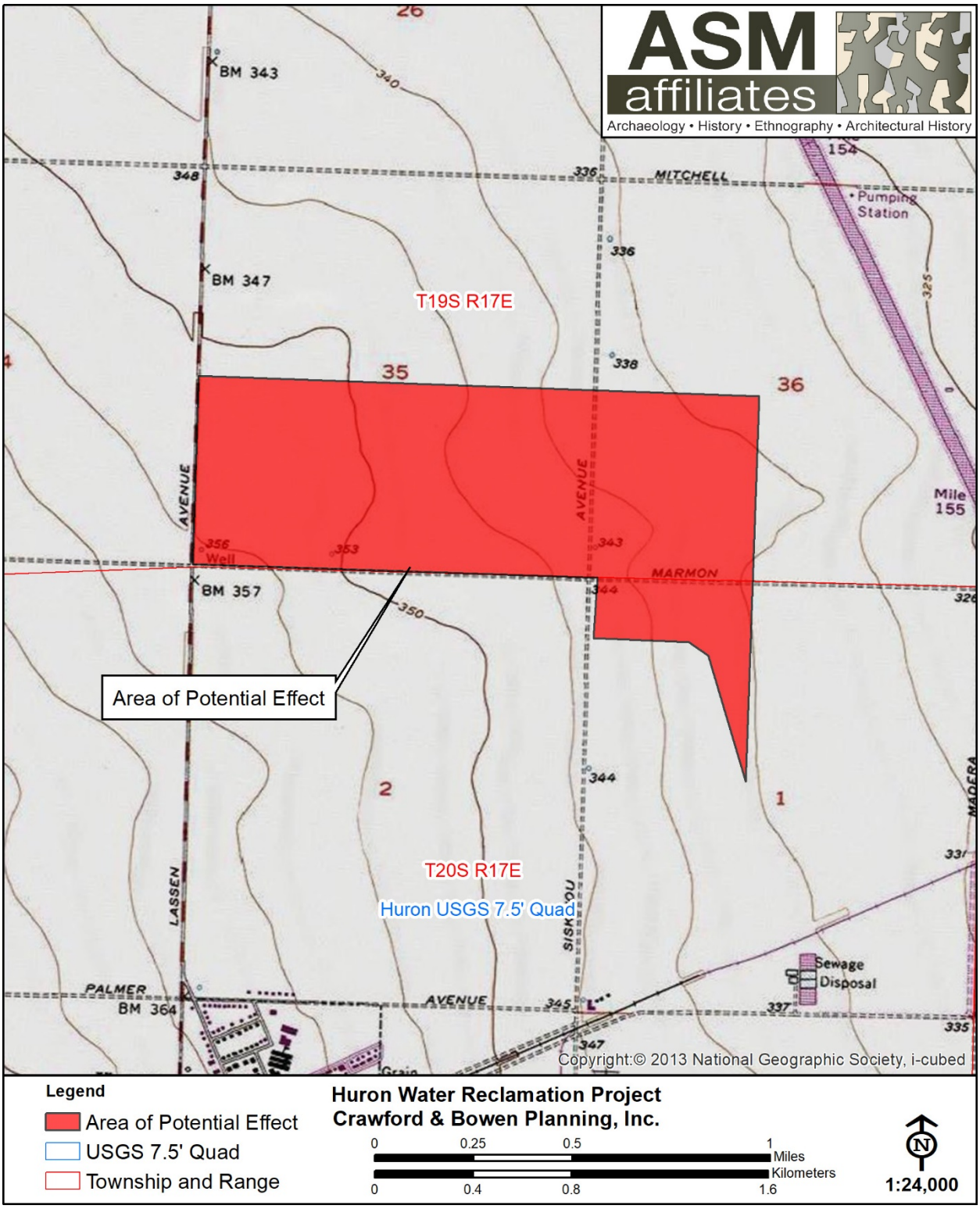

Figure 2. Location of the Huron Water Reclamation Project, Fresno County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 GEOARCHAEOLOGICAL SENSITIVITY AND ENVIRONMENTAL BACKGROUND

As noted above, the 500-ac APE is located at elevations between 330 and 345-ft amsl on the open flats of the San Joaquin Valley. The City of Huron is located approximately one-mile south of the Project area.

According to the geoarchaeological model developed by Meyer et al. (2010), the APE, located on an alluvial fan originating from Los Gatos Creek, has a Moderate potential for buried archaeological deposits. Meyer et al.'s study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in 7 ordinal classes for sensitivity for buried soils, from Very Low to Very High. There is therefore considered to be moderate possibility for buried sites and cultural resources within the Project APE.

Prior to the appearance of agriculture, starting in the nineteenth century, this location would have been prairie grasslands with riparian woodlands near drainages, and near Los Gatos Creek (Preston 1981; Schoenherr 1992). The study area and immediate surroundings have been farmed and grazed for many years and little to no native vegetation is present. Perennial bunchgrasses such as purple needlegrass and nodding needlegrass most likely would have been the dominant plant cover in the study area prior to cultivation.

2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977) and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central

foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

Following Kroeber (1925: Plate 47), the study area most likely lies in Apiachi (Apiche in Latta [1977:163]) territory. The principle village for this group was *Wohui* (*Wohue* in Latta [1977:163]) on the north bank of Murphy Slough, approximately one-mile north of the study area.

The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes,

the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today.

2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake south of the study area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7,500 to 4,000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4,000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3,800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California, the Takic speaking groups that include the Gabrielino/Fernandeño, Tataviam and Kitanemuk, may have moved into the region at that time (Sutton 2009, rather than at about 1,500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3,500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly

apparent this was a major southern California-wide occurrence and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1,500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about A.D. 1860. It included major droughts matched by intermittent "mega-floods," and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90% of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (ibid). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated towards the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W&S Consultants 2006).

What is then clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierras and the Mojave Desert. Many of these sites are found at locations that lack existing or known historical fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1,500 – 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located south of the current study area, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to ethnographic Native California; suggesting that ethnographic life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations

had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is a current important research objective.

2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). But the Mexican government did not grant ranchos in the San Joaquin Valley until the early 1840s, and even then these did not result in significant permanent settlement. The *Laguna de Tache Rancho* was granted by Governor Pio Pico in 1846 to Manuel de Jesus Castro, a former captain in the Mexican army. The rancho extended for 26-miles down the north bank of the Kings River from modern Kingsburg to approximately Riverdale. It was sometimes called the "River Ranch." Castro's ownership of the Laguna de Tache Rancho grant was confirmed by the U.S. Public Land Commission in 1866, at which point it was sold to Jeremiah Clark.

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep and pig (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of state wide 'No-Fence' laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006).

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (three feet wide by two feet deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles. Miller and Lux's impact extended beyond Kern County, however. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River. Descendants of Henry Miller continue to play a major role in California water rights, with his great grandson, George Nickel, Jr., the first to develop the concept of water banking, thus creating a system to buy and sell water (http://exiledonline.com/california-class-war-history-meet-the-oligarch-family-thats-been-scamming-taxpayers-for-150-years-and-counting/).

The San Joaquin Valley was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift in the region, as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley towards oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of great number of migrants from the drought-affected Dust Bowl region, looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in towns such as Bakersfield where their descendants live today (Boyd 1997).

The City of Huron was founded as a water stop along the Southern Pacific Railroad in 1888. A post-office predates the founding of the city, and operated from 1877 to 1883, then from 1886 to the present. In the early 20th century, Huron was one of the largest producers of wool in the United States. Currently, the economy of Huron is largely focused on agricultural with over 40 percent of residents employed in agriculture (http://www.city-data.com/city/Huron-California.html).

2.5 RESEARCH DESIGN

2.5.1 Pre-Contact Archaeology

Previous research and the nature of the pre-contact archaeological record suggest two significant NRHP themes, both of which fall under the general Pre-Contact Archaeology area of significance. These are the Expansion of Pre-Contact Populations and Their Adaptation to New Environments; and Adaptation to Changing Environmental Conditions.

The Expansion of Pre-Contact Populations and Their Adaptation to New Environments theme primarily concerns the Middle Horizon/Holocene Maximum. Its period of significance runs from about 4,000 to 1,500 YBP. It involves a period during which the prehistoric population appears to have expanded into a variety of new regions, developing new adaptive strategies in the process.

The Adaptation to Changing Environmental Conditions theme is partly related to the Holocene Maximum, but especially to the Medieval Climatic Anomaly. The period of significance for this theme, accordingly, extends from about 4,000 to 800 YBP. This theme involves the apparent collapse of many inland populations, presumably with population movements to better environments such as the coast. It is not yet known whether the southern San Joaquin Valley, with its system of lakes, sloughs and swamps, experienced population decline or, more likely, population increase due to the relatively favorable conditions of this region during this period of environmental stress.

The range of site types that are present in this region include:

- Villages, primarily located on or near permanent water sources, occupied by large groups during the winter aggregation season;
- Seasonal camps, again typically located at water sources, occupied during other parts of the year tied to locally and seasonally available food sources;
- Special activity areas, especially plant processing locations containing bedrock mortars (BRMs), commonly (though not exclusively) near existing oak woodlands, and invariably at bedrock outcrops or exposed boulders;
- Stone quarries and tool workshops, occurring in two general contexts: at or below naturally occurring chert exposures on the eastern front of the Temblor Range; and at quartzite cobble exposures, often on hills or ridges;
- Ritual sites, most commonly pictographs (rock art) found at rockshelters or large exposed boulders, and cemeteries, both commonly associated with villages; and
- A variety of small lithic scatters (low density surface scatters of stone tools).

The first requisites in any research design are the definition of site age/chronology and site function. The ability to determine either of these basic kinds of information may vary between survey and test excavation projects, and due to the nature of the sites themselves. BRM sites without associated artifacts, for example, may not be datable beyond the assumption that they post-date the Early Horizon and are thus less than roughly 4,000 years old.

A second fundamental issue involves the place of site in the settlement system, especially with respect to water sources. Because the locations of the water sources have sometimes changed over time, villages and camps are not exclusively associated with existing (or known historical) water sources (W&S Consultants 2006). The size and locations of the region's lakes, sloughs and delta channels, to cite the most obvious example, changed significantly during the last 12,000 years due to major paleoclimatic shifts. This altered the area's hydrology and thus prehistoric settlement patterns. The western shoreline of Tulare Lake was relatively stable, because it abutted the Kettleman Hills. But the northern, southern and eastern shorelines comprised the near-flat valley floor. Relatively minor fluctuations up or down in the lake level resulted in very significant changes in the areal expression of the lake on these three sides, and therefore the locations of villages and camps. Although perhaps not as systematic, similar changes occurred with respect to stream channels and sloughs, and potential site locations associated with them. This circumstance has implications for predicting site locations and archaeological sensitivity. Site sensitivity is then hardest to predict in the open valley floor, where changes in stream courses and lake levels occurred on numerous occasions.

Nonetheless, the position of southern San Joaquin Valley prehistory relative to the changing settlement and demographic patterns seen in surrounding areas is still somewhat unknown (cf. Siefkin 1999), including to the two NRHP themes identified above. The presence of large lake systems in the valley bottoms can be expected to have mediated some of the effects of desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007), environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley, and determining how these trends (if present) correlate with those seen elsewhere, is another primary regional research objective.

Archaeological sites would primarily be evaluated for NRHP eligibility under Criterion D, research potential.

2.5.2 Historical Archaeology: Native American

Less research has been conducted on the regional historical archaeological record, both Native American and Euro-American. For Native American historical sites, the ethnographic and ethnohistoric periods in the southern San Joaquin Valley extended from first Euro-American contact, in AD 1772, to circa 1900, when tribal populations were first consolidated on reservations. The major significant historic NRHP themes during this period of significance involve the related topics of Historic-Aboriginal Archaeology, and Native American Ethnic Heritage. More specifically, these concern the Adaptation of the Indigenous Population to Euro-American Encroachment and Settlement, and their Acculturation to Western Society. These processes included the impact of missionization on the San Joaquin Valley (circa 1800 to about 1845); the introduction of the horse and the development of a San Joaquin Valley "horse culture," including

raiding onto the coast and Los Angeles Basin (after about 1810); the use of the region as a refuge for mission neophyte escapees (after 1820); responses to epidemics from introduced diseases (especially in the 1830s); armed resistance to Euro-American encroachment (in the 1840s and early 1850s); the origins of the reservation system and the development of new tribal organizations and ethnic identities; and, ultimately, the adoption of the Euro-American society's economic system and subsistence practices, and acculturation into that society.

Site types that have been identified in the region dating to the ethnographic/ethnohistoric period of significance primarily include villages and habitations, some of which contain cemeteries and rock art (including pictographs and cupules). Dispersed farmsteads, dating specifically from the reservation period or post-1853, would also be expected. The different social processes associated with this historical theme may be manifest in the material cultural record in terms of changing settlement patterns and village organization (from traditional nucleated villages to single family dispersed farmsteads); the breakdown of traditional trading networks with their replacement by new economic relationships; changing subsistence practices, especially the introduction of agriculture initially via escaped mission neophytes; the use of Euro-American artifacts and materials rather than traditional tools and materials; and, possibly, changing mortuary practices.

Inasmuch as culture change is a primary intellectual interest in archaeology, ethnographic villages and habitations may be NRHP eligible under Criterion D, research potential. Rock art sites, especially pictographs, may be eligible under Criterion C as examples of artistic mastery. They may also be eligible under Criterion A, association with events contributing to broad patterns of history. Ethnographic sites, further, may be NRHP eligible as Traditional Cultural Properties due to potential continued connections to tribal descendants, and their resulting importance in traditional practices and beliefs, including their significance for historical memory, tribal- and self-identity formation, and tribal education.

For Criteria A, C and D, eligibility requires site integrity (including the ability to convey historical association for Criterion A). These may include intact archaeological deposits for Criterion D, as well as setting and feel for Criteria C and A. Historical properties may lack physical integrity, as normally understood in heritage management, but still retain their significance to Native American tribes as Traditional Cultural Properties if they retain their tribal associations and uses.

2.5.3 Historical Archaeology: Euro-American

Approaches to historical Euro-American archaeological research relevant to the region have been summarized by Caltrans (1999, 2000, 2007, 2008). These concern the general topics of historical landscapes, agriculture and farming, irrigation (water conveyance systems), and mining. Caltrans has also identified an evaluation matrix aiding determinations of eligibility. The identified research issues include site structure and land-use (lay-out, land use, feature function); economics (self-sufficiency, consumer behavior, wealth indicators); technology and science (innovations, methods); ethnicity and cultural diversity (religion, race); household composition and lifeways (gender, children); and labor relations. Principles useful for determining the research potential of an individual site or feature are conceptualized in terms of the mnemonic AIMS-R, as follows:

1. *Association* refers to the ability to link an assemblage of artifacts, ecofacts, and other cultural remains with an individual household, an ethnic or socioeconomic group, or a specific activity or property use.

2. *Integrit*y addresses the physical condition of the deposit, referring to the intact nature of the archaeological remains. In order for a feature to be most useful, it should be in much the same state as when it was deposited. However, even disturbed deposits can yield important information (e.g., a tightly dated deposit with an unequivocal association).

3. *Materials* refers to the number and variety of artifacts present. Large assemblages provide more secure interpretations as there are more datable items to determine when the deposit was made, and the collection will be more representative of the household, or activity. Likewise, the interpretive potential of a deposit is generally increased with the diversity of its contents, although the lack of diversity in certain assemblages also may signal important behavioral or consumer patterns.

4. *Stratigraphy* refers to the vertically or horizontally discrete depositional units that are distinguishable. Remains from an archaeological feature with a complex stratigraphic sequence representative of several events over time can have the added advantage of providing an independent chronological check on artifact diagnosis and the interpretation of the sequence of environmental or sociocultural events.

5. *Rarity* refers to remains linked to household types or activities that are uncommon. Because they are scarce, they may have importance even in cases where they otherwise fail to meet other thresholds of importance (Caltrans 2007:209).

For agricultural sites, Caltrans (2007) has identified six themes to guide research: Site Structure and Land Use Pattern; Economic Strategies; Ethnicity and Cultural Adaptation; Agricultural Technology and Science; Household Composition and Lifeways; and Labor History. Expected site types would include farm and ranch homesteads and facilities, line camps, and refuse dumps. In general terms, historical Euro-American archaeological sites would be evaluated for NRHP eligibility under Criterion D, research potential. However, they also potentially could be eligible under Criteria A and B for their associate values with major historical trends or individuals. Historical landscapes might also be considered.

Historical structures, which are most likely to be pertinent to the current study area, are typically evaluated for NRHP eligibility under Criteria A and/or B, for their associate values with major historical trends or individuals, and C for potential design or engineering importance. Water conveyance systems comprise a particular sub-set of historical structures that warrant discussion in light of the known presence of one such resource within the Project APE.

2.5.4 Significant Themes

Two NRHP themes are potentially applicable to the Project APE, as described below.

Theme 1: Development of Irrigated Agriculture in the San Joaquin Valley, 1852-1964

As identified by Caltrans in the *Water Conveyance Systems in California Historic Context Development and Evaluation Procedures,* the "Development of Irrigated Agriculture" is a historically significant theme or event in the history of California and the Central Valley region. In the years following California's statehood and the gold rush, increasing population created a growing market for agricultural products. The total irrigated acreage in the state grew from 60,000 acres in 1860 to nearly 400,000 acres by 1880, an increase of more than 650 percent, and the San Joaquin Valley contained the highest percentage of that land (approximately 47 percent) (Caltrans 2000). Private water companies, land colonies, mutual water companies, and irrigation districts were established in the mid- to late nineteenth century to build irrigation systems to further develop the state's agriculture industry. Irrigation districts became the most influential of these organizations, especially after state legislation—the Wright Act of 1887—causing irrigation districts to grow in number, power, as well as the actual amount of irrigated land throughout the state. Forty-nine irrigation districts were organized between 1887 and 1896, most of them located between Stockton and Bakersfield. However, by the late 1920s, only seven of the original districts were still in existence, among them the Modesto, Turlock, and Tulare irrigation districts (Caltrans 2000). Under the impetus of increased demand during World War I, agricultural production reached a new peak in 1920. Companies like Pacific Gas & Electric and San Joaquin Valley Light and Power helped finance large irrigation reservoirs to feed district canals in return for the power generated. By 1930, there were 94 active districts in California, and the land watered by these agencies mushroomed to 1.6 million acres (Caltrans 2000). Irrigation districts provided more than 90 percent of the surface water used for irrigation in the San Joaquin Valley before the Central Valley Project came on line in the 1940s (Caltrans 2000). Most were located in the San Joaquin Valley, with the most successful in Modesto, Turlock, Merced, and Fresno.

The period of significance for this theme begins with the earliest developments of irrigated agriculture in the San Joaquin Valley, with the construction of the earliest earthen ditches in Visalia in 1852. Irrigated agriculture continues to be an important industry and influence in the Valley. The period of significance ends in 1968 following recommended guidance for closing a period of significance 50 years ago when activities continued to have importance, but no more specific date can be defined to end the historic period, and there is no justification for exceptional significance to extend the period of significance to an end date within the last 50 years (National Register of Historic Places 1997).

Associated Property Types:

Water Conveyance Systems

Following the framework established by Caltrans in *Water Conveyance Systems in California Historic Context Development and Evaluation Procedures,* the water conveyance system is the property type that has the potential to reflect this theme and period. Components and features of water conveyance systems include diversion structures, conduits, flow control devices, cleansing devices, and associated resources and settings. Water Conveyance Systems that are associated with Development of Irrigated Agriculture in the San Joaquin Valley, 1852-1968 will be eligible under NRHP Criterion A/CRHR Criterion 1 for their association with this significant theme if:

- the association with the theme is important--simply because a water conveyance existed during the period of significant is not enough for that system to be eligible;
- the resource retains high overall integrity because of the high number of comparable examples. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.
- Due to the nature of this type of resource, repairs and modifications are acceptable but not if those modifications substantially modified the resource.

Water Conveyance Systems that are associated with Development of Irrigated Agriculture in the San Joaquin Valley, 1852-1968 will be eligible under NRHP Criterion B/CRHR Criterion 2 for their association with this significant theme if they are:

- associated with an important person's productive life ***and*** they are the property that is most closely associated with that person;
- the resource retains high overall integrity because of the high number of comparable examples. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.
- Due to the nature of this type of resource, repairs and modifications are acceptable but not if those modifications substantially modified the resource.

Water conveyance systems will rarely be found eligible under Criterion B. In California notable names for which there might be associations with water planning, construction, or engineering include: Anthony Chabot, George Chaffey, Frederick Eaton, William Mulholland, George Maxwell, Robert Marshall, Elwood Mead and C. E. Grunsky (Caltrans 2000).

Theme 2: Technological Innovation in Irrigated Agriculture in California, 1852-1964

Caltrans clearly defines the historic context for this theme in the "Legacy of Irrigation Canals" section of the context, while ASM has defined a period of significance based on the Caltrans context (Caltrans 2000). The following is a direct excerpt from the context:

> "The earliest irrigation water conveyances in California were roughly made, earthen ditches to divert water. Techniques used to construct irrigation canals have varied widely during the various periods of California's history, from the relatively short, hand-dug, early masonry and tile ditches, to horse-scraped and hand-dug earthen irrigation ditches, to the large concrete-lined, machine-formed irrigation canals of the middle decades of the twentieth century. Evidence of these changes in scale, methods of construction, and knowledge of engineering are reflected in the remaining physical resources found on the landscape today. Substantial regional variation exists with respect to the adoption and dissemination of the new technologies, such as where and when concrete replaced wood in the engineering works of major irrigation canals. These regional differences can be explained in part by cultural traditions with respect to water management, ownership of water rights, and environmental factors, but economics, politics, and the formation of particular types of irrigation institutions also played a significant role.
>
> "Older canals were often subject to substantial change over time. A common change was to expand the system in order to serve more acreage. Unless pumps are used, irrigation

canals rely on gravity to move water, and they can provide service only to land lying below the canal's water level. As irrigated acreage expanded, water companies frequently consolidated smaller ditch systems, moved the point of diversion upstream, and built a high-line canal to service new acreage. In this manner, pioneer canals were often absorbed into larger systems, frequently by irrigation districts, to pull in more potentially irrigable lands. Segments of earlier irrigation systems might remain largely intact within the larger framework of a new irrigation system, or the changes could be such that the old separate irrigation system would become, in essence, a typical component of a new 1920s irrigation district canal.

"Another important factor is that water is notoriously difficult to control; it can be, and frequently is, an engine of destruction. Flood waters, for example, repeatedly overwhelmed the flimsy wooden control structures built on nineteenth and early-twentieth century irrigation systems in the San Joaquin Valley. Canals required periodic maintenance and were also often altered as a result of improvements designed to counteract the normal erosion that occurs from water moving through earth-lined canals. Improvements to stabilize canals ranged from realigning segments of the channel, to lining ditches or putting them in pipe, to replacement of checks, drops, culverts, or other regulation structures. These improvements were sometimes carried out system-wide, sometimes on a piecemeal basis. In light of the proclivity for change and the wide diversity of canal materials and modes of construction, adequate documentary research is essential to understand the evolution of an important irrigation canal and to assess its integrity" (Caltrans 2000).

The period of significance for this theme begins with the earliest developments of irrigated agriculture in the San Joaquin Valley, with the construction of the earliest earthen ditches in Visalia in 1852. Technological innovations in agricultural irrigation are ongoing, but the period of significance ends in 1968 following recommended guidance for closing a period of significance 50 years ago when activities continued to have importance, but no more specific date can be defined to end the historic period, and there is no justification for exceptional significance to extend the period of significance to an end date within the last 50 years (National Register of Historic Places 1997).

Associated Property Types:

Water Conveyance Systems

Following the framework established by Caltrans in *Water Conveyance Systems in California Historic Context Development and Evaluation Procedures,* the water conveyance system is the property type that has the potential to reflect this theme and period. Components and features of water conveyance systems include diversion structures, conduits, flow control devices, cleansing devices, and associated resources and settings. Water Conveyance Systems that are associated with Technological Innovation in Irrigated Agriculture in California, 1852-1968 will be eligible under NRHP Criterion C/CRHR Criterion 3 for their association with this significant theme if they are/have:

- unique values;
- the best or good example of the property type as one that possess distinctive characteristics of the type and through those characteristics clearly illustrates at least one of the following;
    - the pattern of features common to a particular class of resources
    - the individuality or variation of features that occurs within the class;
    - the evolution of that class; or
    - the transition between classes of resources
- the earliest, best preserved, largest, or sole surviving example of particular types of water conveyance systems;
- a design innovation of evolutionary trends in engineering
- designed by a figure of acknowledged greatness in the field or by someone unknown whose workmanship is distinguishable from others by its style and quality ***and*** be a good example of that designer's work;
- the resource retains high overall integrity because of the high number of comparable examples. The property should retain most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association.

A large water conveyance system with multiple components will often be evaluated as a district rather than as a single property. An eligible historic district must possess a significant concentration or linkage of resources that are united historically or aesthetically by plan or physical development. It should be a significant and distinguishable entity, although its components need not possess individual distinction (Caltrans 2000).

3. ARCHIVAL RECORDS SEARCH

3.1 ARCHIVAL RECORDS SEARCH

In order to determine whether the Huron Water Reclamation Project APE had been previously surveyed for cultural resources, and/or whether any such resources were known to exist on any of them, an archival records search was conducted by the staff of the Southern San Joaquin Valley Information Center (IC) on April 6th, 2020 (Confidential Appendix A). The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest.

According to a record search at the Southern San Joaquin Valley Information Center (IC), California State University, Bakersfield, eight previous studies had covered the study area in its entirety (Table 1). No cultural resources of any kind were recorded as a result of these studies. An additional seven previous studies had been completed within 0.5-mi of the study area (Table 2), resulting in the recordation of portions of two historic structures within that radius (Table 3). Based on the age of the previous survey coverage of the Project APE (2003), however, re-survey was considered necessary to meet current standards.

Table 1. Survey Reports within the APE

Report No.	Year	Author (s)/Affiliation	Title
FR-00253	1998	J.D. Binning/ Caltrans	Negative Archaeological Survey Report for the Project to Rehabilitate, Widen, and Upgrade FRE-269 from Kilometere Post 0.0 to Kilometer Post 20.5
FR-00357	1981	M.K. Crist and D.M. Varner/ California State University, Fresno	Archaeological Overview and Locational Analysis of the Fresno Area
FR-00641	1977	B.J. Peck/ California State University, Fresno	The Distribution of Aboriginal Occupational Sites in Fresno County, California
FR-01156	1968	Committee on Sierra Foothills Public Archaeology	A Proposal for an Archaeological Element in the Fresno County, General Plan
FR-01162	1990	D.R. Stuart/ California Department of Parks and Recreation	A Summary of the Present Archaeological Resources of Fresno County
FR-02052	2003	J. Offermann/ Department of Water Resources	Historic Property Survey Negative Findings for Improvements to the Arroyo Pasajero Westside Detention Basin, Fresno and Kings County, California
FR-02672	2014	M. Miller/ Caltrans	Historic Property Survey Report for the State Route 269 Bridge Project 06-FRE-269, Fresno County, California
FR-02847	2016	K. Asselin and R. Baloian/ Applied Earthworks, Inc.	Cultural Resources Inventory for the City of Huron Recycled Wastewater Project, Fresno County, California

Table 2. Survey Reports within the 0.5-mi of the APE

Report No.	Year	Author (s)/Affiliation	Title
FR-00135	1995	B. Hatoff, B. Voss, S. Waechter, V. Bente, and S. Wee/ Woodward-Clyde Consultants	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project.
FR-00575	1995	K. Nissen/ Caltrans	Negative Archaeological Survey Report – Flood Control on Route 269, Fresno County, California
FR-01794	2002	B. Love and B. Tang/ CRM TECH	Historic Property Survey Report: Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California
FR-01795	2002	B. Love and B. Tang/ CRM TECH	Archaeological Survey Report: Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California
FR-01796	2002	B. Love and B. Tang/ CRM TECH	Historic Study Report/Historical Resources Evaluation Report: Cross Valley Rail Corridor Project Between the Cities of Visalia and Huron Tulare, Kings, and Fresno Counties, California
FR-02027	2003	J. Offermann and R. Orlins/ Department of Water Resources	Negative Archaeological Survey Report for Improvements to the Arroyo Pasajero Westside Detention Basin - Survey of Borrow Areas, Fresno County, California
FR-02779	2016	R. Baloin and J. Lloyd/ Applied Earthworks, Inc.	Cultural Resources Survey for the City of Huron Water Treatment Plant Project, Fresno County, California

Table 3. Resources within the 0.5-mi of the APE

Primary #	Type	Description
P-10-003930	Structure	Southern Pacific Railroad
P-10-006207	Structure	California Aqueduct

A records search was also conducted at the Native American Heritage Commission (NAHC) Sacred Lands File (Confidential Appendix A). No sacred sites or tribal cultural resources were known in or in the vicinity of the APE. Outreach letters and follow-up emails were then sent to the tribal contact list provided by the NAHC. Santa Rosa Rancheria responded on May 14th, 2020 requesting to be retained to provide a cultural presentation to all construction staff and the landowner prior to Project activities. The Dunlap Band of Mono Indians also responded by telephone on May 27th, 2020, deferring to the Santa Rosa Rancheria for this Project.

4. METHODS AND RESULTS

4.1 FIELD METHODS

An intensive Class III inventor/Phase I survey of the APE was conducted on May 21st and 22nd, 2020 by Associate Archaeologist Robert Azpitarte, B.A., and Assistant Archaeologists Stacey Escamilla, B.A., Donna Buehler, B.A., and Maria Silva, B.A. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (such as bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they be present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources, using DPR 523 forms. The entirety of the approximately 500-ac APE was surveyed using parallel transects spaced at 15-m apart.

4.2 SURVEY RESULTS

The Project APE is located on fallow agricultural land and undeveloped land north of Huron. The APE is entirely undeveloped, though it is bisected by a powerline and a dirt powerline road (Figure 3, 4, and 5). Vegetation present within the APE includes saltbush, bladderpod, tamarisk, and a dispersed, low cover of brome. Vegetation is especially dense along the eastern edge of the APE but ground-surface visibility overall was better than 75%.

No cultural resources of any kind were identified within the project APE.

Figure 3. Overview from northern boundary, looking south down the only dirt road bisecting the Project APE.

Figure 4. Overview of eastern half from the northern boundary, looking southwest.

Figure 5. Overview of the southern triangular offshoot, looking north.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY

An intensive Class III inventory/Phase I cultural resources survey was conducted for the Huron Water Reclamation Project, near Huron, Fresno County, California. This horizontal Project APE for this Project totals approximately 500-ac, with a 10-ft vertical APE. A records search at the CSUB IC indicated that the study area had been surveyed in its entirety as a result of multiple previous surveys, and no cultural resources are known to exist within it. Based on the age of the primary previous survey coverage of the APE (2003), however, re-survey was considered necessary to meet current standards. A search of the NAHC Sacred Lands Files did not indicate the presence of tribal resources. Outreach letters and follow-up emails were sent to tribes on the contact list provided by the NAHC. Santa Rosa Rancheria responded indicating they would like to be retained to provide a cultural presentation to all construction staff and the landowner prior to Project activities. The Dunlap Band of Mono Indians also responded by telephone on May 27, 2020, deferring to the Santa Rosa Rancheria for this Project.

The Class III inventory/Phase I was completed using 15-m transects across the APE. No cultural resources of any kind were identified during the survey, confirming the results of the previous inventory.

5.2 RECOMMENDTIONS

The proposed Huron Water Reclamation Project does not have the potential to result in adverse impacts or effects to historical resources or historic properties, and a determination of no significant impact under CEQA and no adverse effect under Section 106 is recommended. In the unlikely event that cultural resources are identified during the project, work should be halted within a 100-foot radius of the find and a qualified archaeologist be contacted to evaluate the newly discovered resource.

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CONFIDENTIAL APPENDICES:

Appendix E

Huron Recycled Water Feasibility Analysis

City of Huron



Recycled Water Feasibility Report

September 2016

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TABLE OF CONTENTS

SECTION 1 - INTRODUCTION 1
1.1. Purpose of this Report 1
1.2. Background 1
1.3. Study Area 1
1.3.1. Hydrogeology 2
1.3.2. Land Use and Population 4
1.3.3. Soils 4
1.3.4. Climate 5
SECTION 2 - WATER SUPPLY 6
2.1. Water Source 6
2.1.1. California Aqueduct Watershed Sanitary Survey 6
2.2. Water System 6
2.3. Surface Water Treatment Facilities 7
2.3.1. Treatment Plant 2 7
2.3.2. Settling Pond and Sludge Drying Bed 9
2.3.3. Clearwell 9
2.3.4. Disinfection (Chlorination) 10
2.3.5. Storage and Distribution Facilities 10
2.4. Water Production 10
2.5. Water Quality 11
SECTION 3 - WASTEWATER FLOWS AND CHARACTERISTICS 14
3.1. Wastewater Flows 14
3.2. Wastewater Characteristics 14
3.3. Salinity 16
SECTION 4 - WWTP DESCRIPTION 18
4.1. Existing Wastewater Treatment Plant 18
4.1.1. Headworks 18

4.1.2. Treatment Ponds 18
4.1.3. Effluent Disposal 18
SECTION 5 - RECYCLED WATER MARKET ASSESSMENT 22
5.1. Recycled Water Uses 22
5.2. Recycled Water Users Survey 22
5.3. Recycled Water Users Survey Results 23
SECTION 6 - PROPOSED RECYCLED WATER PROJECT 26
6.1. Proposed Recycled Water Project 26
6.1.1. Water Balance 26
6.1.1. Nitrogen Balance 29
6.2. Improvements to Existing Wastewater Treatment Plant 30
6.2.1. Headworks Rehabilitation 30
6.2.2. Treatment Pond Improvements 30
6.2.3. Plant Water Improvements 30
6.2.4. Storage Pond Liners 33
6.2.5. Emergency Pond 33
6.2.6. Onsite Disposal Area 38
6.3. Offsite Effluent Reclamation Area 38
6.3.1. Irrigation System Improvements 38
6.3.2. Pipeline Alignments 38
6.3.3. Tailwater Return System 40
6.3.4. Miscellaneous Improvements 40
6.4. Implementation Plan 48
SECTION 7 - ENVIRONMENTAL ASSESSMENT 49
7.1. Biological Assessment 49
7.1.1. Project Site 49
7.1.2. Land Uses and Biotic Habitats 49
7.1.3. Special Status Plants and Animals 50
7.1.4. Endangered, Threatened, Or Special Status Plants and Animals 51
7.1.5. Jurisdictional Waters 51
7.1.6. Natural Communities of Special Concern 52

7.1.7. Wildlife Movement Corridors 52
7.1.8. Designated Critical Habitat 52
7.2. Cultural Assessment 52
7.2.1. Archaeological Resources 53
7.2.2. Cultural Resources Inventory 53
7.2.3. Human Remains 54
7.2.4. Paleontological Resources 54
SECTION 8 - INITIAL STUDY/MITIGATED NEGATIVE DECLARATION 55
8.1. Purpose 55
8.2. Environmental Impacts and Mitigation Measures 55
8.3. Mitigated Negative Declaration 58
SECTION 9 - CONSTRUCTION FINANCING PLAN 60
9.1. Funding Sources 60
9.2. Operation and Maintenance Cost 60
APPENDIX A – PRECIPITATION AND EVAPORATION REFERENCE DATA
APPENDIX B – WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2014-0163
APPENDIX C – WESTSIDE SUBBASIN DESCRIPTION
APPENDIX D – GROUNDWATER BASIN AND SUBBASIN MAP
APPENDIX E – SOIL REPORT
APPENDIX F –NOTIFICATION TO LAND OWNERS
APPENDIX G – SANITARY SEWER REPORT
APPENDIX H – BIOLOGICAL EVALUATION REPORT
APPENDIX I – CULTURAL EVALUATION REPORT
APPENDIX J – INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

List of Tables

Table 1-1 City of Huron Population Projections 4
Table 1-2 Average and 100-yr Return Precipitation in Huron 5
Table 2-1 Annual Production and Number of Service Connections for the City of Huron 10
Table 2-2 Water Demand for the City of Huron 11
Table 2-3 Summary of Water Quality Results 12
Table 3-1 Average Monthly Flow (MGD) 14

Table 3-2 Effluent Limits 14
Table 3-3 Monthly Average Influent and Effluent BOD and TSS 15
Table 3-4 Effluent Total Nitrogen 16
Table 3-5 Influent and Effluent EC Levels 17
Table 4-1 Treatment Pond Dimensions 18
Table 4-2 Percolation Pond Dimensions 21
Table 5-1 Property Owners List 22
Table 6-1 Water Balance Design Data 26
Table 6-2 Water Balance 27
Table 6-3 Nitrogen Balance 29
Table 6-4 Evaporation/Percolation Pond Dimensions 33
Table 6-3 Probable Construction Cost 47
Table 7-1 Special Status Species that Could Occur in Project Vicinity 50
Table 8-1 Mitigation and Monitoring Measures 55

List of Figures

Figure 1-1 General Location Map 3
Figure 2-1 Surfacewater Treatment and Raw and Treated Water Storage Facilities 8
Figure 4-1 Wastewater Plant Site Map 19
Figure 4-2 Wastewater Treatment Plant Treatment Process 20
Figure 5-1 Recycled Water User Survey Boundary 24
Figure 6-1 Proposed Recycled Water Project 28
Figure 6-2 WWTP Site Improvements 31
Figure 6-3 Effluent Weir Box and Submersible Pump 32
Figure 6-4 Percolation/Evaporation Ponds Layout 34
Figure 6-5 Pond Details and Cross Sections (Case 1 and 2) 35
Figure 6-6 Pond Details and Cross Sections (Case 3 and 4) 36
Figure 6-7 Pond Details and Cross Sections (Case 5) 37
Figure 6-8 Irrigation Pumps Station 39
Figure 6-9 Typical Diversion Structure 41
Figure 6-10 Typical Alfalfa Valve 42

Figure 6-11 Typical Pipe Trench Detail 43
Figure 6-12 Tailwater Pond Embankment 44
Figure 6-13 Tailwater Return Pump Station 45
Figure 6-14 Proposed Perimeter Berm 46

ABBREVIATIONS

AF	Acre-Feet
APE	Area of Potential Effects
ANSI	American National Standards Institute
ARMR	Archaeological Resource Management Reports
BOD	Biochemical Oxygen Demand
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CE	California Endangered
CEQA	California Environmental Quality Act
CFP	California Fully Protected
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Data Base
CSC	California Species of Special Concern
CT	California Threatened
CCT	California Threatened Candidate
cfs	Cubic Feet per Second
CIMIS	California Irrigation Management Information System
City	City of Huron
CWSRF	Clean Water State Revolving Fund
CY	Cubic Yard
DWR	Department of Water Resources
EA	Each
EC	Electrical Conductivity
EDD	California Employment Development Department
ft	Feet
ft^2	Square Feet
FE	Federally Endangered
FT	Federally Threatened
gpm	Gallons per Minute
gpm/ ft^2	Gallons per Minute per Square Feet
gpd/ ft^2	Gallons per Day per Square Feet
gph	Gallons per Hour
hp	Horsepower

IPaC	Information for Planning and Conservation
LF	Linear Feet
LOA	Live Oak Associates, Inc.
MG	Million Gallons
MGD	Million Gallons per Day
mg/l	Milligrams per Liter
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NSI	National Science Institute
psi	Pounds per Square Inch
RWQCB	Central Valley Regional Water Quality Control Board
SCADA	Supervisory Control and Data Acquisition
SF	Square Feet
SWRCB	California State Water Resources Control Board
TDH	Total Dynamic Head
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TN	Total Nitrogen
TON	Ton
TSS	Total Suspended Solids
TTHMs	Total Trihalomethane
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USFWS	U.S. Fish and Wildlife Service
WDR	Waste Discharge Requirements
WTP	Water Treatment Plant
WWD	Westlands Water District
vfd	Variable Frequency Drive
µg/L	Microgram per Liter
µmhos /cm	Micromhos per centimeter

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

SECTION 1 - INTRODUCTION

1.1. Purpose of this Report

The purpose of this Recycled Water Feasibility Report (Report) is to evaluate the feasibility of recycling treated wastewater effluent from the City of Huron's Wastewater Treatment Plant (WWTP) on nearby agricultural land. This Report is also intended to comply with Provisions F.18 and F.19 in Waste Discharge Requirements (WDRs) Order No. R5-2014-0163, which requires the City of Huron (City) to identify potential uses of recycled water within a 1-mile radius of the WWTP and determine the feasibility of using treated wastewater effluent for any of those potential uses.

This Report is being funded by the State Water Resources Control Board (SWRCB) Clean Water State Revolving Fund (CWSRF). This Report includes an overview of the City, an assessment of the recycled water service area, description of the City's existing WWTP, information regarding the recycled water user survey, a full description of the proposed recycle water project, and an engineer's opinion of probable construction cost for the most feasible alternative selected. In addition, this Report includes an analysis of the major environmental issues that may be a factor, or a result of the construction and/or operation of this proposed Recycled Water Project.

1.2. Background

On December 5, 2014, the Central Valley Regional Water Quality Control Board (RWQCB) adopted WDRs Order No. R5-2014-0163 (see Appendix B) which regulates the City's WWTP. Provision F.18 of the WDRs requires the City to determine the current land uses for each parcel within a one (1) mile radius of the WWTP (including City-owned parcels), identify potential uses of recycled water for each parcel, and to appropriately inform land owners and formally request their consideration to accept treated WWTP effluent.

Provision F.19 of the WDRs requires the City to submit a Nitrogen Plan in the form of a technical report describing how the City's discharge of treated effluent into percolation ponds complies with Groundwater Limitations. The nitrogen plan must include either a Nutrient Management Plan for irrigation of crops with the WWTP effluent, or a demonstration that the City has reduced effluent nitrogen concentrations and/or otherwise demonstrate that disposal practices will not cause groundwater to contain concentrations of nitrate above the MCL. Reducing effluent nitrogen concentrations would require the City to construct a new wastewater treatment plant. Through the preparation of this feasibility report the City would like to secure agricultural land and use the WWTP treated wastewater effluent to irrigate crops that can uptake the nitrogen and prevent it from reaching the groundwater. If agricultural land is available in the proximity of the WWTP, it would be significantly less costly than constructing an entirely new facility.

1.3. Study Area

The City lies in the San Joaquin Valley's vast west-side region. The City is nine miles east of Interstate 5 (I-5) and three miles south of Highway 198. Lassen Avenue (Highway 269) runs north and south through the

City providing easy access for local produce to major markets. The local economy is primarily based in agricultural and ag-related industry.

The City owns and operates a WWTP under WDR Order No. R5-2014-0163. The facility is located east of the City along Palmer Ave. More specifically the WWTP is located in the SE ¼ of Section 1, Township 20S, Range 17E, Mount Diablo Base and Meridian. Figure 1-1 displays a general location map of the City and the WWTP, including the city limits.

1.3.1. Hydrogeology

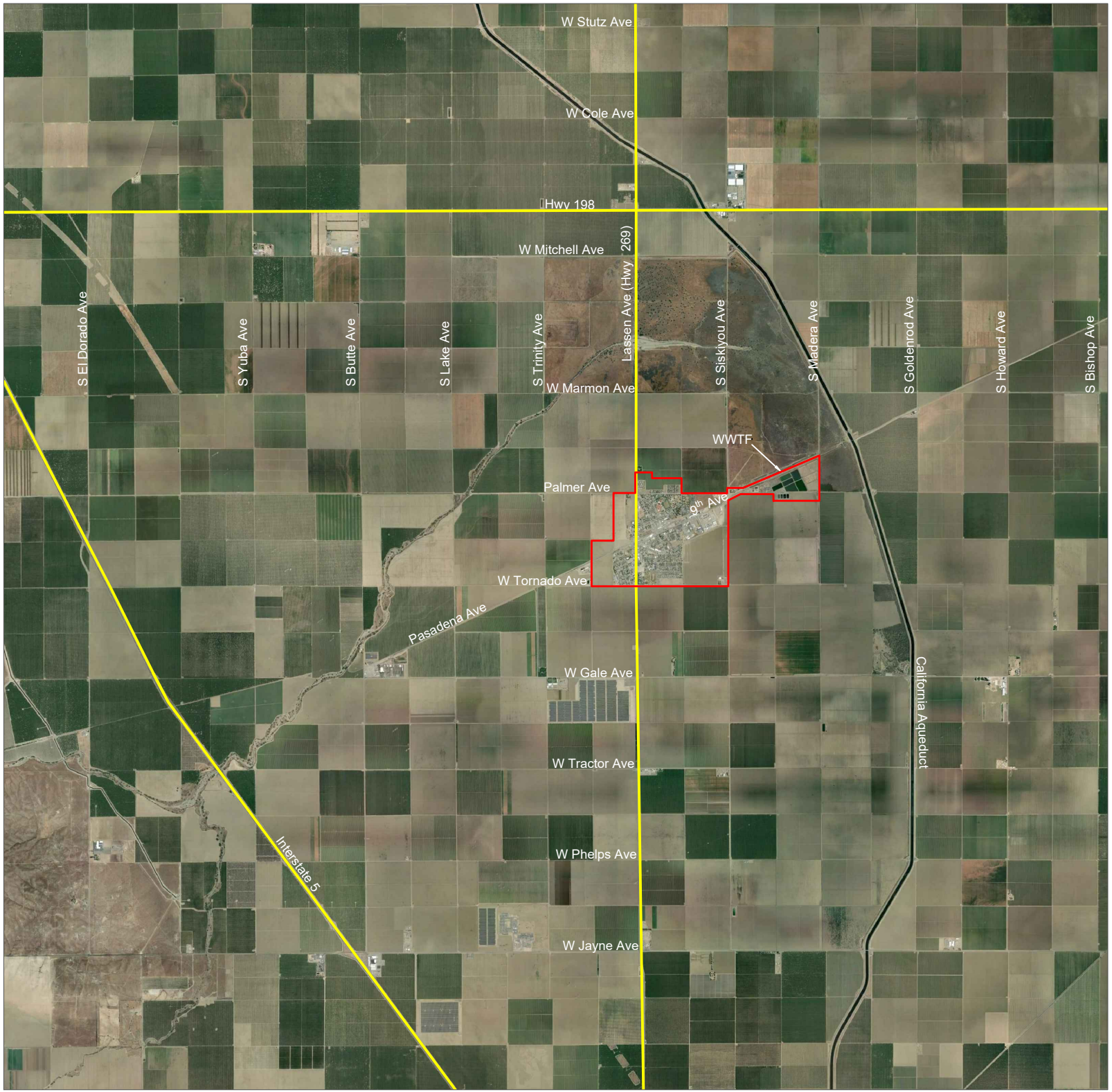
The City of Huron is located in the Westside subbasin within the San Joaquin Valley groundwater basin (Basin). The Westside Subbasin consists mainly of the lands in Westlands Water District. It is located between the Coast Range foothills on the west and the San Joaquin River drainage and Fresno Slough on the east. The subbasin is bordered on the southwest by the Pleasant Valley Groundwater Subbasin and on the west by Tertiary marine sediments of the Coast Ranges, on the north and northeast by the Delta-Mendota Groundwater Subbasin, and on the east and southeast by the Kings and Tulare Lake Groundwater Subbasins. A map of the Groundwater basin is provided in Appendix D.

According to the California Department of Water Resources (DWR) Groundwater Bulletin 118, the aquifer system comprising the Westside Subbasin consists of unconsolidated continental deposits of Tertiary and Quaternary age. These deposits form an unconfined to semi-confined upper aquifer and a confined lower aquifer. These aquifers are separated by an aquitard named the Corcoran Clay (E-Clay) member of the Tulare Formation.

The unconfined to semi-confined aquifer (upper zone) above the Corcoran Clay includes younger alluvium, older alluvium, and part of the Tulare Formation. These deposits consist of highly lenticular, poorly sorted clay, silt, and sand intercalated with occasional beds of well-sorted fine to medium grained sand. The depth to the top of the Corcoran Clay varies from approximately 500 feet to 850 feet (DWR 1981).

The confined aquifer (lower zone) consists of the lower part of the Tulare Formation and possibly the uppermost part of the San Joaquin Formation. This unit is composed of lenticular beds of silty clay, clay, silt, and sand interbedded with occasional strata of well-sorted sand. Brackish or saline water underlies the usable groundwater in the lower zone.

The principle drainage within the vicinity of the WWTP is Los Gatos Creek (Arroyo Pasajero), the historic channel which travels in the easterly direction, approximately 0.7 miles north of the proposed project site. Los Gatos Creek initiates in the Diablo Range, some 30 miles west of the project site, at an elevation of approximately 3,000 feet. It originally terminated in a delta in the trough of the San Joaquin Valley, and together with the Kings River delta, formed a sill that marked the northern boundary of the historic Tulare Lake during very wet years. With the construction of the local segment of the California Aqueduct in 1967, Los Gatos Creek was intercepted, and floodwater spilled through agricultural land along the aqueduct's western embankment. The Bureau of Reclamation began buying the affected agricultural properties, and in the mid-2000s constructed the Arroyo Pasajero Westside



CITY OF HURON

Recycled Water Feasibility Study

Legend

City Limits

Major Highways

0 15,000 FT

Figure 1-1

General Location Map

Detention Basin, which constrains the Los Gatos Creek floodwaters to an approximate 3,800-acre area extending along the west side of the aqueduct from Highway 198 to Gale Avenue. At Gale Avenue, a set of gates allow overflow to be pumped into the aqueduct, as needed.

1.3.2. Land Use and Population

The local economy within the Study Area is predominantly based in agriculture and ag-related industry. Most of the farmland surrounding the City is used to grow a variety of agricultural crops such as almonds, garbanzo, beans, broccoli, cotton, garlic, lettuce, melon, oats, onions, pistachio, pumpkin, tomato, and wheat. During the harvest season (April to November), the population can swell to over 9,000 people.

Other land uses within the Study Area include industrial facilities, rural residences, and municipal Huron. Approximately 0.75 miles west of the proposed project site is Chestnut Park, while 0.85 miles west is Chestnut High School.

According to the 2010 U.S. Census, the population of the City was 6,754, which was up from 6,306 at the 2000 census, and up from 4,766 at the 1990 census. According to the U.S. Census, as July 1, 2015, the population of the City of Huron was approximately 6,836. This represents an average annual growth rate of approximately 1.45 percent from the years of 1990 to 2015.

The City encompasses approximately 1,041 acres (1.3 square miles). Currently, the WWTP provides collection, treatment, and disposal services to approximately 6,836 customers. Table 1-1 provides a population projection through 2035 using the annual growth rate of 1.45 percent seen over the last twenty-five years.

Table 1-1 City of Huron Population Projections

Years	2015	2020[(2)]	2025[(2)]	2030[(2)]	2350[(2)]
Service Area Population [(1)]	6,836	7,347	7,897	8,488	9,123

Notes:
(1) Service area population is defined as the population served by the WWTP.
(2) Projected estimates are based on population growth from 1990 to 2015. An annual growth rate of 1.45 percent is used.

1.3.3. Soils

The WWTP lies about 25 miles east of the Southern Coast Ranges, on the west side of the San Joaquin Valley, at an elevation of about 335 feet above mean sea level. Soils in the vicinity of the WWTP are alluvium deposited by Los Gatos Creek, predominately sandy loams and clay loams. According to the Custom Soil Resource Report for Fresno County, California, Western Part published by the United States Department of Agriculture Natural Resources Conservation Service, the most prevalent soil series' in the area are Westhaven loam, West haven clay loam, Cerini sandy loam, and Excelsior sandy loam, all of which are sandy with relatively high permeability. A copy of this soils report is attached in Appendix E.

1.3.4. Climate

Like most of Californian, the southern San Joaquin Valley experiences a Mediterranean climate. The WWTP is located in an arid climate characterized by dry summers and mild winters. The rainy season generally extends from November through April, with little to no precipitation occurring during the summer months of June to September. Table 1-2 below shows the average monthly precipitation, 100-year return precipitation, maximum and minimum average temperatures and evapotranspiration in the City. Average precipitation represents the average monthly precipitation amount observed in Huron since 1942. The 100- year return precipitation represents the amount of rainfall that is expected to be equaled or exceeded every 100 years on average.

Table 1-2 Average and 100-yr Return Precipitation in Huron

Month	Precipitation (in)		Average Temperature (°F)		Evapotranspiration, ET_0 (in)
	Average	100-yr	Maximum	Minimum	
January	1.6	3.52	57.8	35.8	1.55
February	1.21	2.66	63.6	39.2	2.52
March	0.55	1.21	69.2	41.8	4.03
April	0.25	0.55	79	45.9	5.70
May	0.04	0.09	84.9	52.5	7.75
June	0.01	0.02	92.7	59.2	8.70
July	0.02	0.04	99.4	65.3	9.30
August	0.02	0.04	97.8	63.2	8.37
September	0.19	0.42	92.7	58.6	6.30
October	0.31	0.68	81.8	49.7	4.34
November	0.72	1.58	67.6	40.6	2.40
December	1.2	2.64	58.2	35.7	1.55
Total	**6.12**	**13.46**	-	-	**62.51**

Average annual pan evaporation in the area is about 65 inches, according to Department of Water Resources (DWR) Bulletin No. 113-3.

SECTION 2 - WATER SUPPLY

2.1. Water Source

Surface water is the only water source used by the City. Raw water is delivered to the City's Water Treatment Plant (WTP) from the California Aqueduct by the Westlands Water District (WWD). The Huron turnout, designated by WWD as lateral 23R, is a 12-inch pipeline that transports water to the City's WTP. Lateral 23R flows are pumped from the California Aqueduct to terminal 23R Lateral reservoir. The raw water then flows from the reservoir by gravity to the City's WTP and is metered as it enters the plant for treatment.

2.1.1. California Aqueduct Watershed Sanitary Survey

The Department of Water Resources (DWR) recently completed the watershed sanitary survey of the California Aqueduct System. Under the Surface Water Treatment Rule (SWTR), watershed sanitary surveys are required to be updated every five years. According to the survey, the San Luis Canal has a capacity of 13,000 cubic feet per seconds (cfs), and is a branch of the California Aqueduct that runs through the Central Valley (approximately from the O'Neill Forebay to the end of the WWD's service area). The San Luis Canal receives water from the O'Neill Forebay, which is filled via the California Aqueduct from the American, Sacramento and San Joaquin Rivers through the Sacramento Delta. Water is pumped from the O'Neill Forebay into the San Luis Reservoir for storage. Delta-Mendota Canal water and storm water runoff from the watersheds around the Forebay and San Luis Reservoir also enters the Forebay. The Forebay is fully recreational and is heavily used during the summer months. The California Aqueduct is exposed to significant storm drainage, municipal sewage, industrial waste, and agricultural tailwater discharges, as well as accidental chemical spills.

2.2. Water System

The City of Huron owns and operates a surface Water Treatment Plant (WTP) and a water distribution system. Surfacewater is the primary source of drinking water for both year-round and temporary residents, including commercial and industrial users. The City's water system is classified as a community water system and currently operates under domestic water supply permit No. 03-23-10P-005 issued on April 21, 2010.

The City's drinking water system includes transmission pipelines from the WTP to three above-ground steel water storage reservoirs. These reservoirs have a combined storage capacity of 2.5 million gallons (MG). Pumping stations from the above-ground reservoirs pump drinking water from the reservoirs into the distribution system. Distribution pipelines spanning across the City then deliver water to residential, commercial, and industrial customers. A computerized Supervisory Control and Data Acquisition (SCADA) system is designed to assist water system operators with the operation of both the WTP and the distribution system.

2.3. Surface Water Treatment Facilities

The City has two (2) parallel surface water treatment plants; Plant 2 and Plant 3. Plant 2 is a conventional filtration plant with a design capacity of 2.1 million gallons per day (MGD), or 1,450 gallons per minute (gpm). Plant 3 is a direct filtration plant with a design capacity of 1.2 MGD (860 gpm). Due to incomplete controls and filter media issues, Plant 3 is currently abandoned and cannot be operated effectively without additional improvements to the facility. The City does not have any future plans to operate Plant 3 in the immediate future.

Raw water enters Plant 2 via the Lateral 23R pipe and/or WWD regulating storage tank, depending on the water level of the WWD storage tank. Figure 2-1 displays the location of treatment Plant 2, the City's storage tanks and location of WWD's Lateral 23R pipeline and regulating tank.

2.3.1. Treatment Plant 2

Plant 2 was constructed in 1982 and is classified as a conventional filtration plant with processes that include coagulation, flocculation, sedimentation, filtration, and disinfection. The following paragraphs describe each treatment processes currently employed by Plant 2.

Chemical Pretreatment

Plant 2 is equipped with pre-chlorination capability. The City stated that there is an occasional need to pre-chlorinate when there is visible algal boom in the sedimentation tank. The chlorine can be injected into the flocculation basin of Plant 2 as needed. However, pre-chlorination has been minimized by the City due to high levels of Total Trihalomethanes (TTHMs) formed. The water system switched to 12.5 percent liquid sodium hypochlorite chlorination from the on-site generated 0.8 percent sodium hypochlorite in 2013. The City's chemical pretreatment systems are enclosed in a building and all chemicals used by the water system are NSF/ANSI Standard 60 certified.

Flocculation

Plant 2 includes a flocculation basin that is divided into two (2) chambers. To better assist floc formation, raw water is distributed to each flocculation chamber through a submerged inlet. Each chamber is approximately 14-feet by 14-feet, 9.5-feet deep (water level) with an individual capacity of 13,930 gallons and a combined capacity of 27,860 gallons. Each chamber is equipped with a variable speed mixer operated by a ¾-hp motor and vertical shaft flocculation paddles. Each compartment is designed for a maximum flow of 1.0 MGD. The effluent from the flocculation chambers flows through a bottom outlet in the concrete floor and discharges to the adjacent sedimentation basin.

Sedimentation

Sedimentation is provided by one 75-feet by 20-feet, 9.5-feet deep (water level) basin with a capacity of 106,590 gallons. The sedimentation basin has 88-feet of overflow weir length comprised of two (2), double-sided, 22-foot-long V-notched weir troughs. The surface loading rate to the clarifier is 0.97 gallons per minute per square feet (gpm/ft^2) (1400 gpd/ ft^2) at 2.1 MGD.

CITY OF HURON

Recycled Water Feasibility Study

Legend

- Westlands Water District Lateral 23R Regulating Tank
- Huron Turnout
- Surfacewater Treatment Plant
- Westlands Water District Lateral 23R (12")
- Lassen Ave Reservoir
- 9th Street Reservoir

0 6,000 FT

Figure 2-1
Surface Water Treatment and Raw and Treated Storage Facilities

Sludge is removed from the basin through a traveling bridge that vacuums the sludge from the bottom of the clarifier. Sludge is transported to a settling pond prior to settling into two (2) sludge drying beds. Settled water turbidities are monitored by daily grab samples.

Filtration

Filtration is provided by two (2) dual-media gravity filters, approximately 11-feet by 11-feet. The filter media consists of 18-inches of anthracite coal and 1-inch of sand. California Surface Water Treatment Regulations specify that the maximum filtration rate for dual-media filters under gravity conditions shall not exceed 6 gpm/ft^2. Plant 2 complies with this requirement with a maximum filter loading rate of 6 gpm/ft^2 at the plant's design flowrate of 2.1 MGD. Each filter is equipped with Leopold underdrains and filter-to-waste capabilities.

Filter backwash system consists of two (2) 25-hp backwash pumps. Backwash is initiated manually as required, typically based on effluent turbidity. Backwash is conducted with treated water supplied from the clearwell at a rate of 15 gpm/ft^2 (1800 gpm). The backwash cycle typically consists of a 1-minute surface wash, 1-minute surface wash and low-flow (1,100 gpm) backwash, 7-minute surface wash and high-flow (1,850 gpm) backwash, 3-minute backwash only, and 8-minute filter-to-waste. Each filter is backwashed individually so that one filter is always in production. Filter backwash is typically required every 2-3 days.

2.3.2. Settling Pond and Sludge Drying Bed

Filter backwash water, filter-to-waste water, and clarifier sludge is drained into a settling pond located adjacent to Plant 3. The water is allowed to settle for approximately 30 minutes before treatment plant personnel manually activate a 3-hp transfer pump to transport the sludge to the sludge drying beds. Each sludge drying bed is approximately 10-feet deep and the bottom of the bed features an underdrain system. Percolated water flows by gravity into a wet well where a submersible pump returns the water to the settling pond.

The settling pond is divided into two sections by a weir. The sludge is pumped from the section closest to the drying beds. After a period of gentle settling, the settled water from the latter half of the settling pond is pumped by a 3-hp pump back to the treatment plant headworks at a flow rate that does not exceed 10 percent of the inflow. Currently, only 30 gpm of flow is recycled from settling pond to the flocculation chamber directly without any pretreatment. Three (3) 30-hp booster pumps lift the water from the clearwell into a 12-inch discharge line which reduces to 10-inch prior to the 9th street reservoirs.

2.3.3. Clearwell

Treated water from the treatment plant flows into a partially above ground, underground clearwell with a capacity of 115,000 gallons. The clearwell is 33-feet long, 32-feet wide and 16-feet deep. The booster pumps are located below the ground in a pit adjacent to the clearwell. Water levels in the clearwell control the operation of the treatment plant. Currently, the high and low water levels are set

at 13-feet and 6-feet, respectively. Treated water enters the clearwell at about 10-feet from the clearwell floor and exits at about 2-feet from the bottom.

2.3.4. Disinfection (Chlorination)

The water system currently uses 12.5 percent Sodium hypochlorite manufactured by Sierra Chemical and distributed by Univar to disinfect treated effluent. Disinfection is achieved by the injection of sodium hypochlorite into the filter effluent of the treatment plant by means of an Aldos Pump with a maximum capacity of 4.5 gallons per hour (gph). The water system uses about 10 gallon of chlorine per day during the winter and the demand almost doubles during the summer. Chlorine is stored in a 5,500-gallon fiberglass tank without any dilution.

2.3.5. Storage and Distribution Facilities

Treated water is pumped form the clearwell through 10 and 12-inch transmission mains to the 9th Street storage tanks. These tanks have a combined capacity of 1.5 MG. The Lassen tank is 1 MG in capacity and located approximately half a mile away from the 9th Street tanks.

The 9th Street tanks consist of one above ground 0.5 MG welded steel tank constructed in 1982 and one above ground 1 MG bolted steel tank constructed in 2000. This tank replaced the existing underground tank. The 0.5 MG tank is 25-feet in height and has a low water level of 7-feet. The 0.5 MG tank is equipped with a top inlet (12-inch diameter) and a bottom outlet (16-inch diameter). The 1 MG tank is 30-feet high and has a low level of 12-feet. The 1 MG tank is equipped with a bottom inlet (12-inch diameter) and a bottom outlet (14-inch diameter). Water is pumped to a 10,000 gallon hydropneumatic tank by means of three 50-hp variable frequency drive (vfd) pumps. Lead, lag and standby pumps, each have a maximum capacity of 900 gpm.

The Lassen Tank is a 1 MG welded steel tank constructed in 1992. The tank is 30-feet in height and has a low water level of 12-feet. The tank is equipped with a top inlet (12-inch diameter) and a bottom outlet (12-inch diameter). Water is the pumped to the distribution system by means of three (3) 25-hp pumps. Lead, lag and standby pumps, each have a maximum capacity of 900 gpm.

2.4. Water Production

Production and population data from 2010 through 2015 is presented in Table 2-1 below. In 2015, the City's water system reported a maximum month demand of 27.46 MG and a total annual demand of 242 MG, which is 12 percent less than 2014 annual demand of 275 MG.

Table 2-1 Annual Production and Number of Service Connections for the City of Huron

Year	Population	No. of Service Connections	Annual Production (MG)	Max. Month (MG)
2010	6,754	888	314	41.93
2011	6,763	871	342	41.28
2012	6,775	908	375	46.50
2013	6.791	908	356	43.55

Year	Population	No. of Service Connections	Annual Production (MG)	Max. Month (MG)
2014	6,817	908	275	29.25
2015	6,817	908	242	27.46
		Average	**317**	**38.33**

The average day demand, maximum day demand and peak hour demand during the last six (6) years are shown in Table 2-2. The average day were calculated from the maximum monthly demand reported by the City. The maximum day demands were calculated form using the average day demand and a factor of 1.5, as specified by the California Code of Regulations (CCR) Title 22 Section 64554. The peak hour demands were calculated by applying a factor of 1.5 to the maximum day demands as specified by Section 64554.

Table 2-2 Water Demand for the City of Huron

Year	Average Day Demand (gpm)	Maximum Day Demand (gpm)	Peak Hour Demand (gpm)
2010	937	1,405	2,107
2011	922	1,383	2,075
2012	1,039	1,558	2,337
2013	973	1,459	2,189
2014	653	980	1,470
2015	613	920	1,380
Average	**856**	**1,284**	**1,926**

The City's only operational treatment plant, Plant 2, is permitted to produce 2.1 MGD (1,450 gpm). The City's demand is near the maximum production capacity of the plant. The City of Huron has an average population of eight (8) persons per service connection, which is very high excluding the seasonal population increase.

2.5. Water Quality

The City conducts periodic sampling of the water quality from the City's raw water source, the California Aqueduct, and from Water Treatment Plant No. 2. The City's water supply is tested for many constituents as required by state and federal regulations and distributes a Consumer Confidence Report (CCR) on a yearly basis. Table 2-3 contains a summary of the City's most recent water quality results. Raw water sampled from the California Aqueduct is in compliance with all the primary and secondary drinking water standards.

Table 2-3 Summary of Water Quality Results

Constituent	Raw Water	Treated Water
	California Aqueduct	WTP Plant No. 2
Primary		
Aluminum	60 µg/L	No Record
Antimony	< 2.0 µg/L	No Record
Arsenic	< 2.0 µg/L	No Record
Barium	45 µg/L	No Record
Beryllium	< 1.0 µg/L	No Record
Cadmium	< 1.0 µg/L	No Record
Chromium	< 10 µg/L	No Record
Cyanide	< 0.0 µg/L	No Record
Fluoride	0.059 mg/L	No Record
Hexavalent chromium	0.23 µg/L	No Record
Mercury	< 0.20 µg/L	No Record
Nickel	< 10 µg/L	No Record
Nitrate (as nitrogen)	0.63 mg/L	No Record
Nitrate + Nitrite (sum as Nitrogen)	0.651 µg/L	No Record
Nitrite (as nitrogen)	< 0.05 µg/L	No Record
Perchlorate	< 4.0 µg/L	No Record
Selenium	< 2.0 µg/L	No Record
Thallium	< 2.0 µg/L	No Record
Secondary		
Color	3.0 Units	< 5.0 Units
Copper	< 10 µg/L	No Record
Foaming Agents (MBAS)	< 0.1 mg/L	No Record
Iron	< 50 µg/L	< 100 µg/L
Manganese	< 10 µg/L	No Record
Methyl-tert-butyl ether (MTBE)	< 0.5 µg/L	< 0.0 µg/L
Odor (Threshold at 60°C)	1.0 Ton	No Record
Silver	< 10 µg/L	No Record
Thiobencarb	< 0.0 µg/L	No Record
Turbidity	0.73 NTU	No Record
Zinc	< 50 µg/L	No Record
Total Dissolved Solids	460 mg/L	No Record
Specific Conductance	760 µS/cm	No Record
Chloride	140 mg/L	No Record
Sulfate	44 mg/L	No Record

According to the July 16, 2015, Sanitary Survey Report from the SWRCB, the City's water system has a history of color and iron levels above the State mandated Maximum Control Levels (MCLs). According to the Survey, color concentrations in the treated water supply typically range from 15 to 25 units; the MCL is 15 units. Iron concentrations typically range from 120 to 440 µg/L; the MCL is 300 µg/L. However, monitoring results conducted in March 2014 resulted in color and iron concentration of 5 units and 68 µg/L, respectively, well below the MCLs. As shown in Table 2-3, the City's treated water supply detected a color and iron concentration of less than 5 units and 100 µg/L.

According to the City's most recent CCR (2015), drinking water samples showed levels of coliform bacteria above the drinking water standards. During September and October of 2015, the City collected eighteen (18) samples from the treated water to test for the presence of coliform bacteria. Both test resulted in two (2) out of the 18 samples showing the presence of total coliform bacteria. The current drinking water standard states that no more than one (1) sample per month or 5.0 percent of the samples may do so. However, contamination of these coliform samples can easily occur during collection and analytical testing. Outside sources such as wind may blow contaminants into the sample bottle, thus resulting in a false positive. Proper collection procedures must be maintained regardless of the environment and the City's water system operators have been required to complete proper sampling technique training to ensure that the possibility of contamination is minimal. Also, each sample site has been evaluated for possible outside contamination and City staff members have requested the flushing of lines on a regularly scheduled basis.

The City also routinely monitors treated water for Total Organic Carbon (TOC) to determine if the water treatment system is effectively removing disinfection byproduct (DBP) precursors form the water supply. According to the 2015 CCR, the City's treated water TOC varied from 2.2 to 5.1 milligrams per liter (mg/l) and resulted in an annual average of 3.5 mg/l, with a removal ration of 0.73. The drinking standard is that treated water TOC removal ratio must be greater than 1.0. DBP will continue to be above drinking water standards until the construction of the City's new WTP, which is anticipated for 2017. The City has approved the funding for and is currently undergoing the necessary engineering study to upgrade the existing surface WTP and disinfection treatment process, which will remove DBP precursors.

Until the City's WTP is constructed, total trihalomethanes (TTHM) in the water supply will also continue to be above drinking water standards. Compliance with the TTHM MCL is based on the average concentration of four (4) consecutive quarterly samples or the running annual average. The drinking water standard for TTHMs is 0.08 mg/l. Testing results received by the City in December 2015 showed that the water system exceeded the TTHM MCL, with an average level of 0.16 mg/l. By upgrading the existing treatment process, the City will be able to effectively remove TTHM and other contaminants that may result in adverse health effects from the water supply

SECTION 3 - WASTEWATER FLOWS AND CHARACTERISTICS

3.1. Wastewater Flows

The City of Huron's existing WWTP receives an average monthly flow of 0.44 million gallons per day (MGD) based on records from 2013 through 2015. Table 3-1 shows the average monthly flow in MGD observed at the WWTP from January 2013 through December 2015. The current design flow of 1.0 MGD will be used to analyze the proposed recycled water project. Note that the average daily flow at the WWTP from 2013 through 2015 is approximately 56 percent of the City's total water production for those same years. Flows at water treatment plant are measured at the influent meter and approximately 10 to 15 percent of water is lost during backwash operations, causing this low ratio between the volume of water produced and the volume of water treated at the wastewater treatment plant.

Table 3-1 Average Monthly Flow (MGD)

Month	2013	2014	2015
January	-	0.452	0.396
February	0.450	0.464	0.386
March	0.494	0.492	0.414
April	-	0.470	0.384
May	0.507	0.457	0.387
June	0.448	0.430	0.408
July	-	0.453	0.428
August	0.476	0.424	0.420
September	0.456	0.417	0.412
October	0.471	0.418	0.412
November	0.492	0.417	0.406
December	0.465	0.403	0.389
Average	**0.473**	**0.441**	**0.404**

3.2. Wastewater Characteristics

The WWTP effluent discharges are regulated by the California Regional Water Quality Control Board (RWQCB), Central Valley Region, Waste Discharge Requirements (WDRs) Order R5-2014-0163. The Order prescribes requirements for the WWTP and limits the wastewater flow to no more than 1.0 MGD. The WWTP produces undisinfected secondary effluent. Table 3-2 shows the current effluent limits set by the WDRs.

Table 3-2 Effluent Limits

Constituent	Units	Monthly Average	Daily Maximum
BOD	mg/l	40	80
TSS	mg/l	40	80

The WWTP discharges treated effluent to eleven (11) percolation/evaporation ponds located on the WWTP site on a year-round basis. The following table summarizes the results of WWTP influent and effluent monitoring from the period of January 2013 through December 2015 for BOD and TSS.

Table 3-3 Monthly Average Influent and Effluent BOD and TSS

Year-Month	Influent		Effluent	
	BOD (mg/L)	TSS (mg/L)	BOD (mg/L)	TSS (mg/L)
13-Jan	81	73	25	45
13-Feb	120	100	20	57
13-Mar	160	210	25	43
13-Apr	-	-	-	-
13-May	140	61	35	43
13-Jun	230	111	22	30
13-Jul	255	170	16.3	17
13-Aug	220	92	24	56
13-Sep	210	110	16.5	23
13-Oct	220	99	14.8	20
13-Nov	295	145	22	7
13-Dec	310	167	25.7	18
14-Jan	290	83	34.8	10
14-Feb	300	150	31.8	9
14-Mar	330	190	34.3	12
14-Apr	290	220	34.2	29
14-May	275	205	33.3	40
14-Jun	310	220	37.8	39
14-Jul	220	160	31.2	42
14-Aug	220	100	33	50
14-Sep	220	140	20	22
14-Oct	290	140	23	27
14-Nov	270	160	36	39
14-Dec	220	120	24	25
15-Jan	283	183	31	19
15-Feb	258	152	29	18
15-Mar	268	154	31	16
15-Apr	315	190	36	42
15-May	188	90	101	30
15-Jun	200	85	90	15
15-Jul	230	118	92	23
15-Aug	233	113	85	23
15-Sep	234	138	62	17

Year-Month	Influent		Effluent	
	BOD (mg/L)	TSS (mg/L)	BOD (mg/L)	TSS (mg/L)
15-Oct	235	132	123	22
15-Nov	228	121	173	31
15-Dec	222	120	108	38

The current treatment process is not designed to provide nitrogen removal. Table 3-4 contains the Total Nitrogen concentration of the treatment plant's effluent from the period of January 2015 through December 2015.

Table 3-4 Effluent Total Nitrogen

Year-Month	Total Nitrogen mg/l
15-Jan	52
15-Feb	57
15-Mar	57
15-Apr	52
15-May	47
15-Jun	45
15-Jul	21
15-Aug	31
15-Sep	46
15-Oct	45
15-Nov	39
15-Dec	43
Average	**44.58**

Total nitrogen concentrations in the treated effluent pose a risk to the underlying groundwater. Some of the nitrogen in the treated effluent will be filtered and removed by the soils as effluent percolates. However, it is likely that the removal efficiencies in the soils are not sufficient to reduce the total nitrogen concentration to less than 10 milligrams per liter (mg/l).

3.3. Salinity

Treated wastewater flows contain higher concentrations of total dissolved solids (salinity) as a consequence of domestic, commercial and industrial use of the water. The City currently monitors salinity by measuring the electrical conductivity at two points: WWTP influent and effluent. Table 3-5 shows the EC levels in the City's wastewater during the period of January 2015 through December 2015.

Table 3-5 Influent and Effluent EC Levels

Year-Month	Specific Conductivity (µmhos/cm)	
	Influent	Effluent
15-Jan	1500	1300
15-Feb	1275	1400
15-Mar	1250	1500
15-Apr	1300	1375
15-May	1300	1325
15-Jun	1286	1300
15-Jul	1300	1275
15-Aug	1375	1300
15-Sep	1480	1400
15-Oct	1525	1425
15-Nov	1500	1475
15-Dec	1540	1380

The Salinity of the WWTP effluent is considered to be acceptable for the irrigation of most agricultural crops.

SECTION 4 - WWTP DESCRIPTION

4.1. Existing Wastewater Treatment Plant

The City of Huron's WWTP consists of a grinder, a duplex pump lift station, magnetic flow meter, an auger screen, four (4) concrete-lined aerated treatment ponds, eleven (11) percolation/evaporation disposal ponds, a clay-lined sludge drying bed and dry sludge storage area. Figure 4-1 displays a site map of the City's water and wastewater treatment facilities.

The City's WWTP produces undisinfected secondary effluent which is discharged to eleven (11) percolation/evaporation ponds. A process flow diagram of the existing WWTP is presented in Figure 4-2. The following paragraphs provide a description of the various unit processes currently in place at the treatment facility.

4.1.1. Headworks

In 2006, the City completed improvements to the WWTP which included the construction of a new headworks. The new headworks consists of an auger screen. Screenings are conveyed by the auger to a waste bin and are hauled to a landfill for disposal.

4.1.2. Treatment Ponds

The WWTP includes four (4) concrete-lined extended aeration treatment ponds. The first treatment pond is designed for complete mixing and includes multiple aerators and mixers. The last three treatment ponds, partial suspension ponds, are only partially mixed and aerated by design. Table 4-1 displays the area, depth and volume of each wastewater treatment pond.

Table 4-1 Treatment Pond Dimensions

Pond	Area (ft^2)	Depth (ft)	Volume (Acre-ft)
CM1	22,622	10	5.19
PS0	21,414	10	5.77
PS1	23,540	10	6.25
PS4	24,899	10	5.74

4.1.3. Effluent Disposal

Currently, treated effluent disposal consists of evaporation and percolation at eleven (11) percolation/evaporation ponds. Table 4-2 displays the dimension of each pond.

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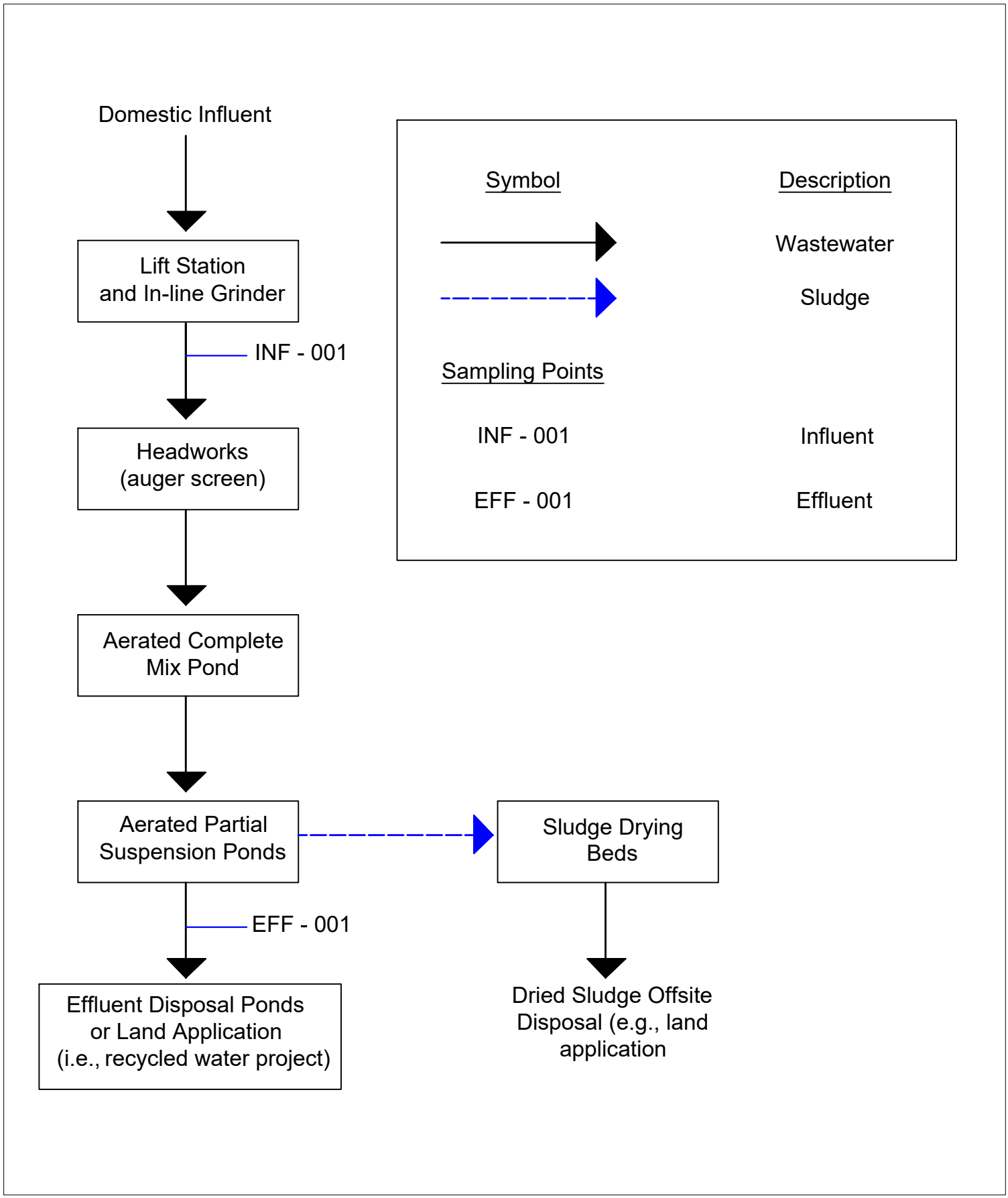
LEGEND

- Influent Lift Station and Headworks
- Surfacewater Treatment Facility
- Wastewater Treatment Ponds
- Biosolids Facilities
- Effluent Disposal Ponds

0 1,200 FT

Figure 4-1
Wastewater Treatment Plant
Site Map



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Not to Scale

Figure 4-2
Wastewater Treatment Facility
Treatment Process

Table 4-2 Percolation Pond Dimensions

Pond	Area (ft^2)	Depth (ft)	Acre-feet
1	178,268	6	24.56
2	177,581	6	24.46
3	177,581	6	24.46
4	172,429	6	23.75
5	251,533	13.5	77.95
6	252,717	10	58.02
7	287,919	13.5	89.23
8	276,100	13.5	85.57
9	319,949	13.5	99.16
10	262,722	13.5	81.42
11	315,852	13.5	97.89

The City's current disposal method does not provide any beneficial reuse of the treated effluent. Furthermore, nitrogen concentrations in the effluent could potentially reach and pollute the underlying groundwater.

SECTION 5 - RECYCLED WATER MARKET ASSESSMENT

5.1. Recycled Water Uses

The City's WWTP produces undisinfected secondary treated water and discharges the effluent to eleven (11) evaporation/percolation ponds on a year-round basis. Section 60304 of the California Code of Regulations (CCR) Title 22 describes the approved uses of undisinfected secondary treated recycled water. The uses listed by CCR Title 22 include:

- Orchards where the recycled water does not come into contact with the edible portion of the crop,
- Vineyards where the recycled water does not come into contact with the edible portion of the crop,
- Non-food-bearing trees (Christmas tree farms are included in this category provided no irrigation with recycled water occurs for a period of 14 days prior to harvesting or allowing access by the general public),
- Fodder and fiber crops and pasture for animals not producing milk for human consumption,
- Seed crops not eaten by humans,
- Food crops that must undergo commercial pathogen-destroying processing before being consumed by humans, and
- Ornamental nursery stock and sod farms provided no irrigation with recycled water occurs for a period of 14 days prior to harvesting, retail sale, or allowing access by the general public.

The City has prepared this Report to identify if any parcels within a reasonable distance from the WWTP can beneficially reuse treated effluent. To avoid costly plant upgrades, the City would prefer recycled water uses that are compatible with the quality of effluent currently being produced at the WWTP.

5.2. Recycled Water Users Survey

As required by Provision F.18 of the current WDR, the City identified all parcels and property owners within a one-mile radius of the WWTP. Table 5-1 list all of the land owners within a 1-mile radius of the WWTP, the acreage of each parcel and the Assessor's Parcel Number (APN). The boundary outlining these parcels is the Study Area included in this Report. The boundary of the study area is shown in Figure 5-1 on page 19 of this Report.

Table 5-1 Property Owners List

No.	APN	Owner of Record	Acreage
1	075-032-16S	Bengard Tom A Farming Company	159.10
2	075-032-24S	G3 Farming Trust	160.00
3	075-032-25S	G3 Farming Trust	160.00
4	075-032-26S	Woolf Christopher R & Delaware Anne A	80.00
5	075-032-27S	Woolf Christopher R & Delaware Anne A	37.63

No.	APN	Owner of Record	Acreage
6	075-032-28	Semper Jon M & Parnagian Linda C	40.00
7	075-032-55S	Bengard Tom A Farming Company	79.90
8	075-032-56S	Bengard Tom A Farming Company	20.10
9	075-032-57S	California Valley Land Co Inc	29.14
10	075-032-72S	G3 Farming Trust	120.00
11	075-032-81S	Woolf John L Jr & Bernice, Woolf Franson Anne	78.26
12	078-020-47S	T J S Corp	220.47
13	078-020-54S	T J S Corp	403.12
14	078-020-60S	Tolmachoff Gregory	218.42
15	078-020-61S	Tolmachoff Gregory	215.00
16	075-032-18ST	US Bureau of Reclamation	377.56
17	075-032-19ST	US Bureau of Reclamation	184.35
18	075-032-22ST	City of Huron	86.93
19	075-032-71ST	City of Huron	40.00
22	078-020-52ST	US Bureau of Reclamation	184.02

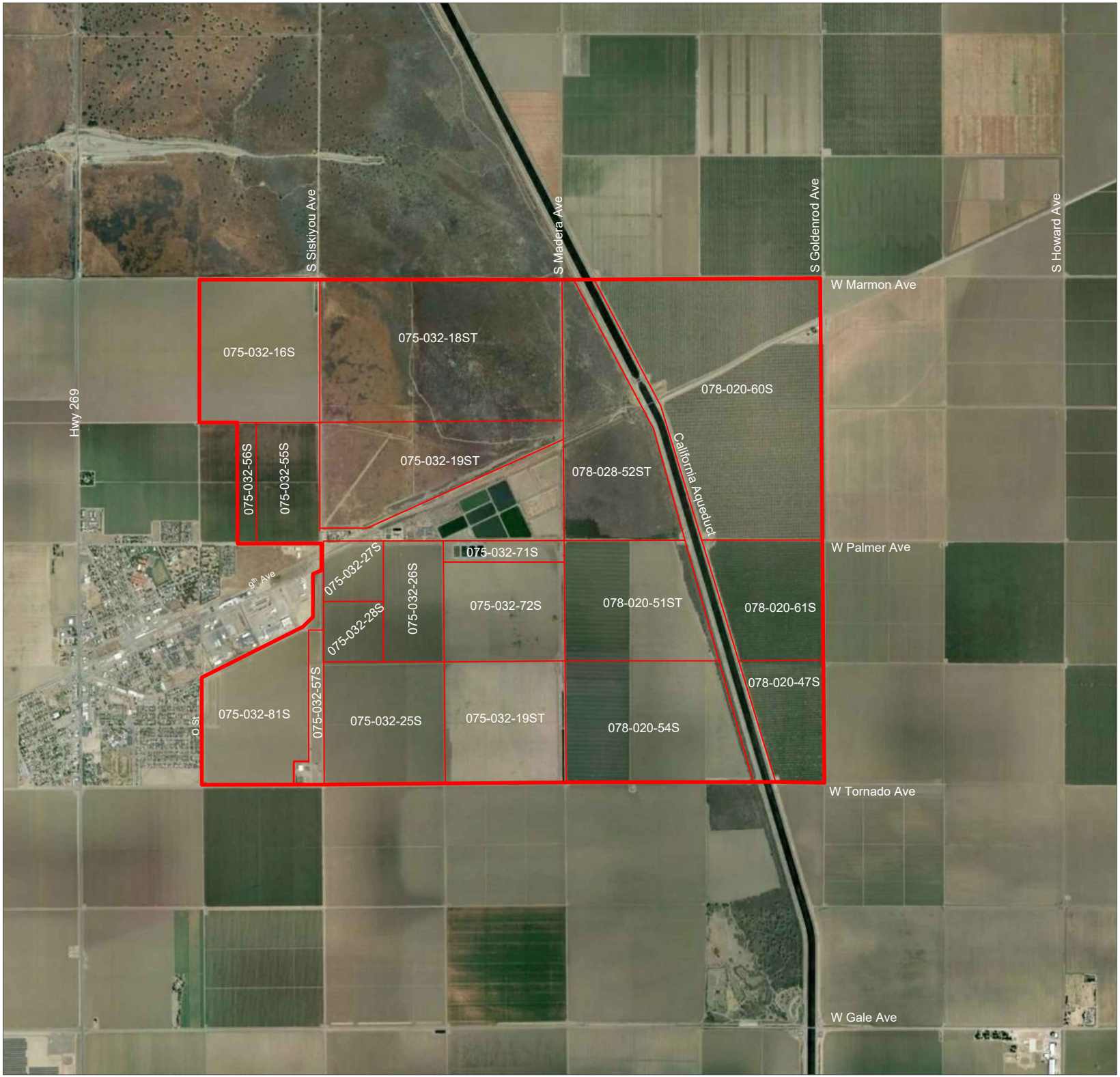
On November 2, 2015, the City sent a Recycled Water Users Survey via U.S. mail to all land-owners included in Table 5-1 above. A copy of the Recycled Water User Survey is provided in Appendix F. The Survey clearly states the City's intention to utilize treated wastewater effluent for agricultural irrigation and the quality of effluent produced by the WWTP. The Survey directed land owners who were interested in using recycled water to irrigate crops to contact the City Manager or the City's wastewater consultant before December 1, 2015.

5.3. Recycled Water Users Survey Results

No property owners within a 1-mile radius expressed interest in using recycled water for irrigation. Most of the crops grown around the WWTP are food crops that are incompatible with the quality of effluent currently produced at the WWTP.

Purchasing privately owned land to construct evaporation and percolation ponds was also considered. Purchasing this land would come at a high cost to the City and would likely need to be accomplished through imminent domain.

Westlands Water District (WWD) expressed interest in accepting the City's treated effluent. However, the effluent would need to be treated to disinfected tertiary quality. The construction and operational cost of a disinfected tertiary facility would significantly exceed those of reusing the current treated effluent to irrigate non-human consumption crops such as alfalfa.



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Recycled Water Feasibility Study

Legend

- Boundary of Recycled Water User Survey Study Area
- Parcel Boundary

0 5,000 FT

Figure 5-1
Recycled Water User Survey Boundary

Since no other feasible uses for the undisinfected secondary treated effluent were identified, the City approached the U.S. Bureau of Reclamation (USBR) to inquire about the possibility of leasing a portion of their property located directly to the north of the WWTP. The USBR owns several thousand acres of land north of the WWTP that would be compatible for practicing agricultural reclamation using the treated wastewater effluent. An application was submitted to the USBR to initiate the permitting and drafting of a potential lease agreement.

Based on initial discussions with the USBR, it appears that the City's proposal to lease some land north of the WWTP and owned by USBR is a feasible, which would require a detailed environmental assessment of the area. The City has conducted the environmental studies required to identify resources that may be impacted by the use of recycled water on the proposed land. Results of these studies are further discussed in Section 7 of this Report.

SECTION 6 - PROPOSED RECYCLED WATER PROJECT

6.1. Proposed Recycled Water Project

The City has determined that recycling treated effluent on newly developed agricultural land adjacent to the WWTP is the most beneficial use for the treated effluent. The City would enter into a long-term agreement with the U.S. Bureau of Reclamation (USBR) to obtain use rights for land north of the WWTP to grow non-human consumption crops, such as alfalfa, with treated effluent. The land to be converted to crops includes 111 acres of APN 075-032-19ST, and an additional 77 acres of APN 075-032-18ST. Additional facilities and improvements required for this recycled water project are discussed in detail in the following paragraphs. Figure 6-1 displays the layout of the proposed recycled water project.

6.1.1. Water Balance

A water balance of the WWTP was initially used to determine the area required to adequately dispose of the City's treated effluent and the volume of storage required. Table 6-1 summarizes the design data used in the water balance calculations. The complete water balance calculations are included in Table 6-2 on the following page.

Table 6-1 Water Balance Design Data

Parameter	Value
Average Design Flow, MGD	1.0
Irrigation Efficiency, %	70%
Treatment Pond Area, Acres	3.20
Storage Pond Area, Acres	23.68
Effluent Reclamation Area, Acres	140
Percolation Rate, inch/day	0

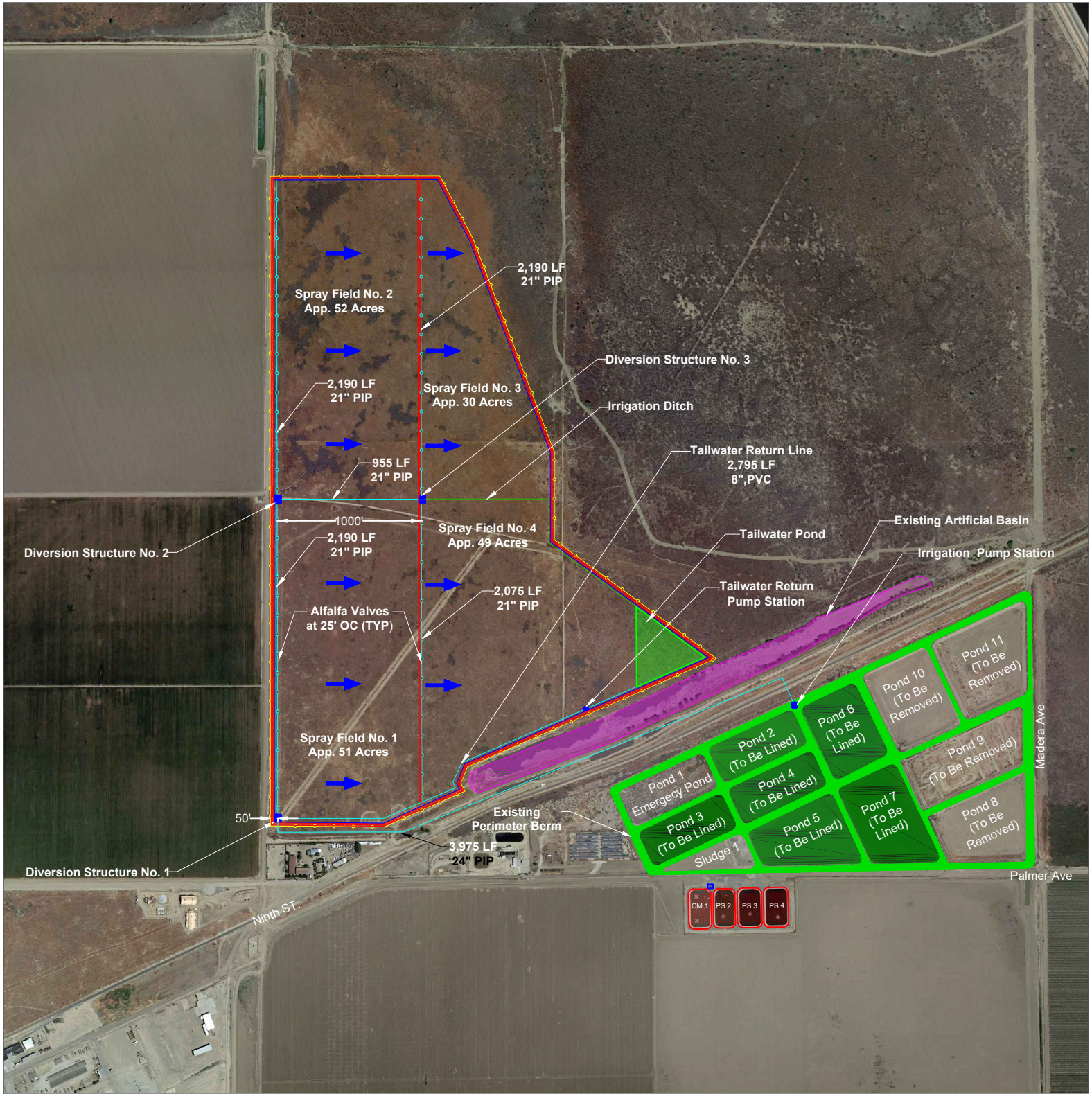
Although the WWTP reaches actual treatment capacity at about 0.5 MGD, the design flow of 1.0 MGD was used to determine the total area needed for effluent reclamation and storage. At 1.0 MGD, the City will need approximately 300 acre-ft (AF) of storage to hold treated effluent wastewater. Six (6) existing percolation/evaporation ponds, Ponds Nos. 2, 3, 4, 5, 6, and 7, will be lined and used to store effluent wastewater before it is applied for agricultural reclamation. Pond No. 6 will need to be excavated an additional foot, from 10 feet to 11 feet in depth. The City is planning to remove the reaming evaporation/percolation ponds, Pond Nos. 8, 9, 10, and 11, for a hydroponic farming facility.

The proposed recycled water project will need 140 acres specifically for effluent reclamation. The City will lease approximately 188 acres of land from the USBR.

Table 6-2 Water Balance

Month	Sewage Flow		Evaporation (acre-ft)		Precipitation Ponds (acre-feet)[1]	Irrigation Disposal Areas		Pond Percolation (Acre-ft)[4]	Balance (Acre-feet)	
	(MGD)	(acre-feet)	Treatment Ponds	Storage Ponds		Onsite Disposal Area (acre-feet)[2]	Offsite Disposal Area (acre-feet)[3]		Monthly[5]	Cumulative[6]
October	1.00	95.1	1.3	9.1	2.2	2.1	72.3	0.0	13.9	13.9
November	1.00	92.1	0.7	5.0	2.7	2.1	40.0	0.0	47.6	61.5
December	1.00	95.1	0.5	3.2	5.4	2.1	20.7	0.0	74.5	136.0
January	1.00	95.1	0.5	3.2	7.6	2.1	15.8	0.0	81.6	217.6
February	1.00	85.9	0.7	5.3	6.1	2.1	35.2	0.0	49.6	267.2
March	1.00	95.1	1.2	8.4	7.0	2.1	58.5	0.0	33.1	300.3
April	1.00	92.1	1.7	11.9	2.8	2.1	95.0	0.0	-14.1	286.1
May	1.00	95.1	2.3	16.2	1.4	2.1	129.2	0.0	-50.9	235.2
June	1.00	92.1	2.6	18.2	0.2	2.1	145.0	0.0	-73.0	162.2
July	1.00	95.1	2.7	19.4	0.0	2.1	155.0	0.0	-81.4	80.9
August	1.00	95.1	2.5	17.5	0.1	2.1	139.5	0.0	-63.8	17.0
September	1.00	92.1	1.8	13.1	0.8	2.1	105.0	0.0	-27.3	0.0
		1,120.1	18.3	130.5	36.2	25.0	1011.2	0.0		

[1] Water contribution by rainfall over the pond surface areas
[2] Effluent Disposal area will consist of 10 greenhouses that will use 2.5 acre-feet/year.
[3] Irrigation requirements based on ET values for the San Joaquin Valley.
[4] Percolation assumes a rate of 0.00 inch per day.
[5] Monthly excess (deficit) of water. Equal to the sum of sewage flow and precipitation less water loss through evaporation and percolation.
[6] Cumulative Balance.
Note: Reference precipitation and evapotranspiration data are included in this Appendix.



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Recycled Water Feasibility Study

LEGEND

- Proposed Perimeter Berm
- Proposed Perimeter Fence
- Access Road
- Effluent Disposal Ponds To Be Lined
- Completly and Partial Mixed Treatment Ponds
- Headworks
- Direction of Flow

0 2,000 FT

Figure 6-1
Proposed Recycled Water Project

6.1.1. Nitrogen Balance

The application of recycled water to forage crops is an efficient way to reuse waste and conserve valuable surface and groundwater resources. However, recycled water can contain high levels of nitrogen that can be detrimental to groundwater if it is not carefully applied. This section of the Report provides a back check of the previously calculated reclamation area required to adequately dispose of the WWTP effluent. The back check calculation provided in this section confirms that the 188 acres available for reclamation are adequate to uptake all the nitrogen load applied by using recycled water.

Shortly after the application of recycled water to the reclamation areas, several conversion processes take place in the soil converting organic nitrogen and/or ammonium to nitrate. Mineralization is the conversion of organic nitrogen to ammonia (NH_3) and ammonium (NH_4). This process is followed by nitrification, which is the conversion of ammonium (NH_4) to nitrate (NO_3). As a result of these processes, it is believed that most of the nitrogen will be converted to ammonium or nitrate and will be available to the plant during the growing season. The rates of these processes are primarily dependent upon temperature, irrigation application amounts, soil aeration, soil type, and the level of organic matter.

Nitrogen can be lost in the system through denitrification and volatilization of ammonia. Ammonia (NH_3) loss rates through volatilization have been estimated at 20 percent or less in wastewater. Loss of nitrogen through denitrification has been estimated at 10 percent to 20 percent for sandy loam and loam soils with a medium denitrification potential.

Due to losses from volatilization and denitrification, only a certain portion of the nitrogen applied in the wastewater will be available to the plant. In a nitrogen balance the Plant Available Nitrogen (PAN) is typically compared to the nitrogen actually used by the crop. Calculations are outlined as follows in Table 6-3:

Table 6-3 Nitrogen Balance

Parameter	Amount
Flow	1.0 MGD
Effluent TN, mg/l	44.58
Annual Nitrogen Load	67.8 Tons
Ammonia Volatilization Losses (10 percent)	6.8 Tons
Denitrification Losses (15 percent)	10.2
Total Losses	17 Tons
Nitrogen Available for Plant Use (PAN)	50.8 Tons
Reclamation Areas, acres	188
Reference Crop	Alfalfa
Yield, tons/acre	8
Nitrogen content, %	4
Nitrogen Uptake, lbs/acre	640

Parameter	Amount
Total Uptake	60.2 Tons
Balance	-9.4 Tons

Based on the balance calculations in Table 6-3 it appears that the 188 acres of reclamation area are sufficient to uptake the entire nitrogen load applied through the recycled water.

6.2. Improvements to Existing Wastewater Treatment Plant

As part of this recycled water project, the City would like to incorporate certain improvements/rehabilitation measures to improve the operation of the existing WWTP. Such improvement include rehabilitating the plant's headworks, replacing aerators in the treatment ponds, determining a feasible way to clean out the aeration treatment ponds, lining the percolation/evaporation ponds, adding an emergency storage pond and pump station to recirculate water back to the treatment ponds.

6.2.1. Headworks Rehabilitation

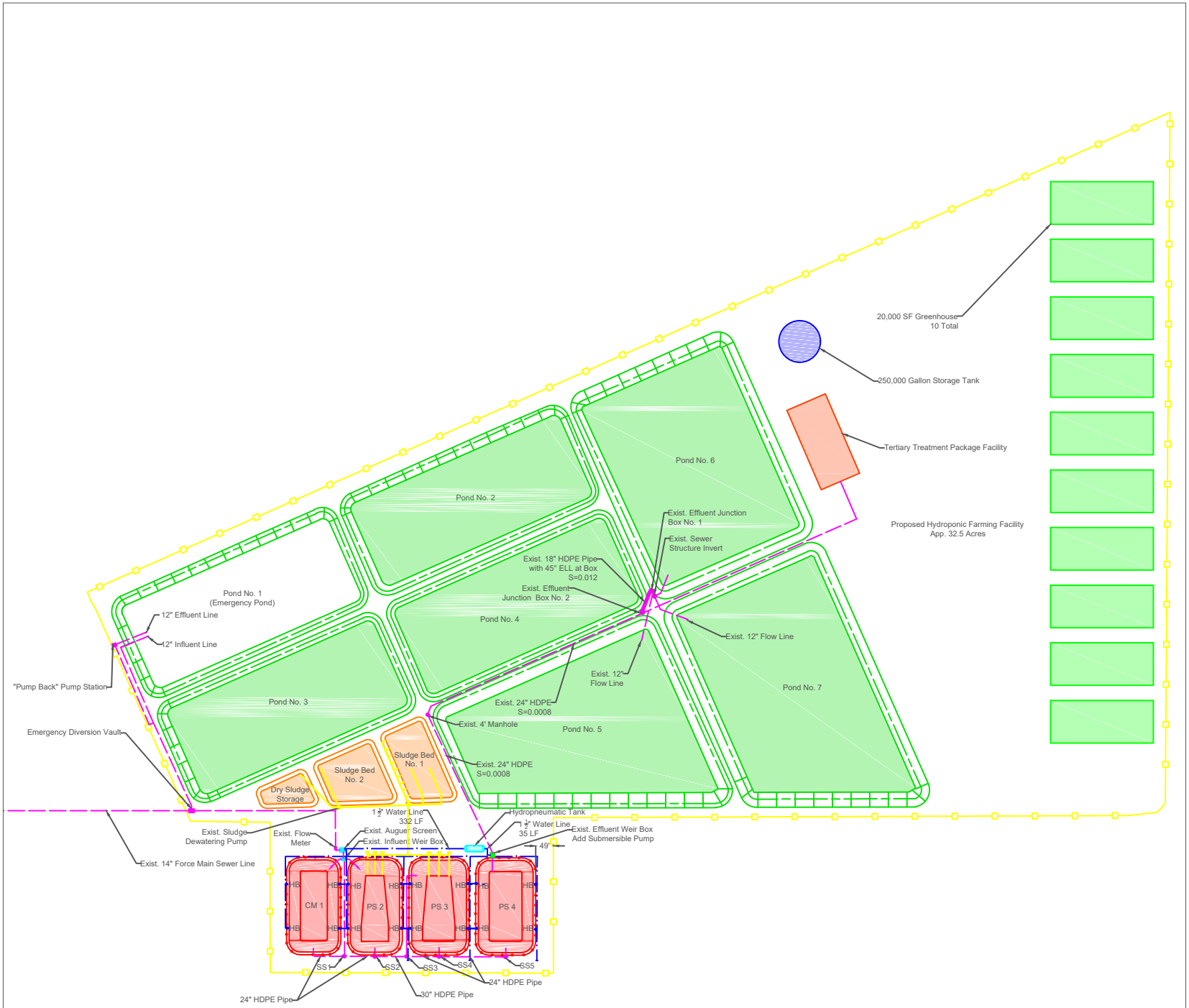
Since the 2006 WWTP improvement project, the auger screen at the headworks of the treatment plant has become warped and taken out of service. Currently, the City is using manual bar screens to remove solids. Headworks rehabilitation has been added to repair the exiting auger screen and bring it back online.

6.2.2. Treatment Pond Improvements

Several aerators within the treatment ponds require replacement. A total of 6 new aerators are needed; four (4) 15-hp aerators for Pond No. 1, one (1) 15-hp aerator for Pond No. 2, and one (1) 7.5-hp aerator for Pond No. 3. No new aerators will be needed for Pond No. 4.

6.2.3. Plant Water Improvements

The existing WWTP contains water lines and hose bibbs that are used to clean each treatment pond. However, the existing water line is connected to the City's water supply and does not have enough pressure to clean the ponds. As shown in Figure 6-2, effluent from Partial Suspension Pond No. 4 flows by gravity to an effluent weir box and then flows to the percolation/evaporation ponds. A submersible pump will be placed in the effluent weir box, as shown in Figure 6-3, to pump treated wastewater to a hydropneumatic tank at a rate of approximately 50 gpm. A 1 ½ inch PVC water line, approximately 35 feet in length, will be used to connect the pump to the hydropneumatic tank. The hydropneumatic tank will be sized to hold approximately 1,000 gallons. From the hydropneumatic tank, water will travel through a 1 ½ inch _____PVC water line, approximately 332 feet in length, to the auger screen. From the auger screen water will travel through the plant's existing water lines and the existing hose bibbs will be used to clean each treatment pond.



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Recycled Water Feasibility Study

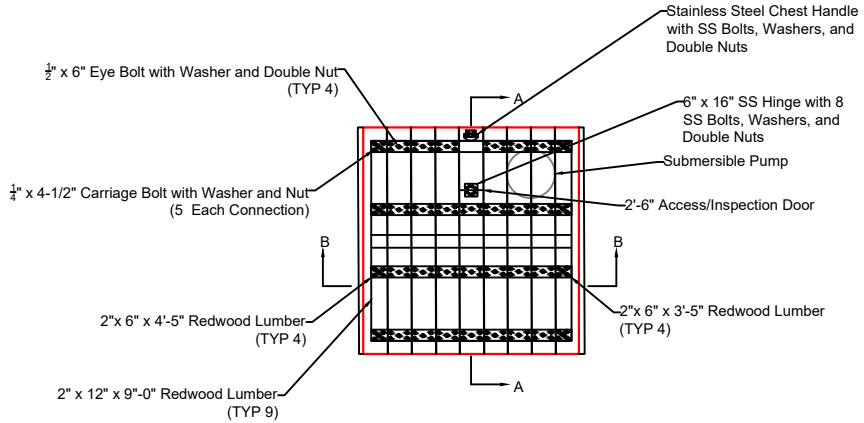
LEGEND

- Effluent Storage Ponds (Lined)
- Treatment Ponds
- Sludge Drying Beds
- Tertiary Treatment Package Facility
- Storage Tank
- Greenhouses
- Perimeter Fence
- Treatment Pond Safety Rail
- Sewer Line
- Water Line
- Sludge Bed Line

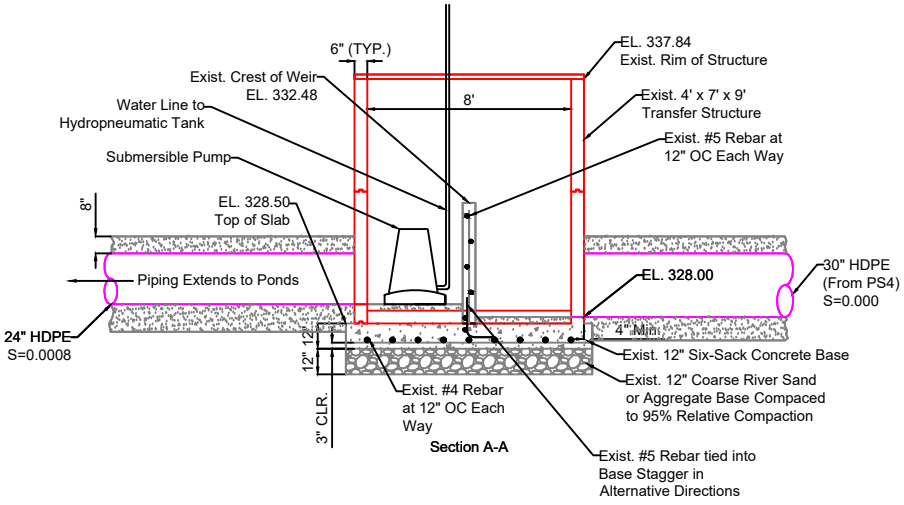
SS - Sewer Structure (Exist.)
HB - Hose Bibb (Exist.)

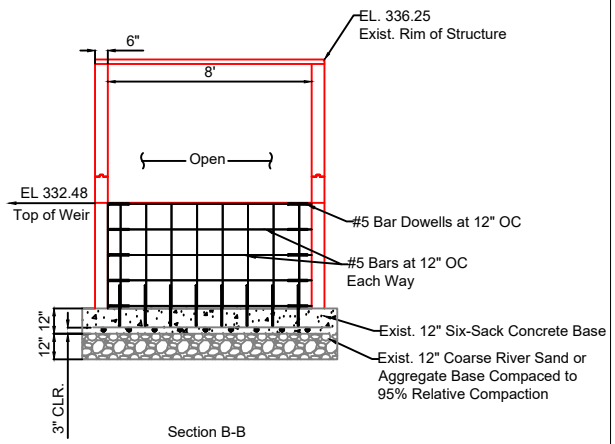
0 500 FT

Figure 6-2
WWTP Site Improvements

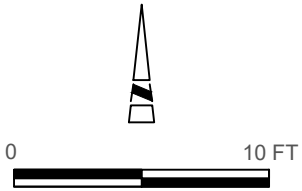


Structure Cover-Plan View





Section B-B



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Recycled Water Feasibility Study

Figure 6-3
Effluent Weir Box and Submersible Pump

6.2.4. Storage Pond Liners

Within the WWTP, six (6) percolation/evaporation ponds will be lined. Ponds 2, 3, 4, 5, 6, and 7 will be used to hold approximately 300 AF of treated wastewater, while Figure 6-4 displays the layout of the City's percolation/evaporation ponds. Table 6-4 displays the area, depth and volume of each pond that will be lined.

Table 6-4 Evaporation/Percolation Pond Dimensions

Pond	Area (ft^2)	Depth (ft)	Acre-feet	Capacity (MG)
2	177,581	6	24.46	8.0
3	177,581	6	24.46	8.0
4	172,429	6	23.75	7.7
5	251,533	13.5	77.95	25.4
6[(1)]	252,717	11	63.82	20.8
7	287,919	13.5	89.23	29.1
Note: [(1)] Pond No. 6 will be excavated to a depth of 11 feet.				

The percolation/evaporation ponds will be lined using a 60 mil smooth high density polyethylene (HDPE) geomembrane liner. HDPE is one of the most universal polymer used for geomembranes; proven to have a high chemical resistance, durability, and low permeability. HDPE liners is widely used in water containment applications.

To secure the HDPE liners, an anchor trench will be dug and placed around the perimeter of each pond. Each anchor trench will be approximately 2-feet wide by 2-feet deep. Figures 6-5, 6-6, and 6-7 display the cross sections of the ponds, including the proposed HDPE liners and anchor trenches.

6.2.5. Emergency Pond

Existing evaporation/percolation Pond No. 1 will be designated as an emergency storage pond. The pond will be excavated to have a slope of 0.002, and will range from 6-feet to 7.25-feet in depth. The pond will have a capacity of approximately 8.8 million gallons (MG) and will be used to store any flows that exceed the capacity of the treatment plant. During emergency periods, the pond will have sufficient capacity to provide storage of wastewater for 20 days. To manage nuisance odors that will occur during emergency situations, the City will bring surface aerator into the pond.

As shown in Figure 6-2, raw wastewater from the City will flow through an existing 14-inch force main sewer line to an emergency diversion vault. From the emergency diversion vault, wastewater will either be directed to the WWTP or to the emergency storage pond during periods emergency or excessive flows. When operations return too normal, two (2) effluent pumps will be used to pump wastewater at a rate of 200 gallons per minute (gpm) back to the headworks of the WWTP.

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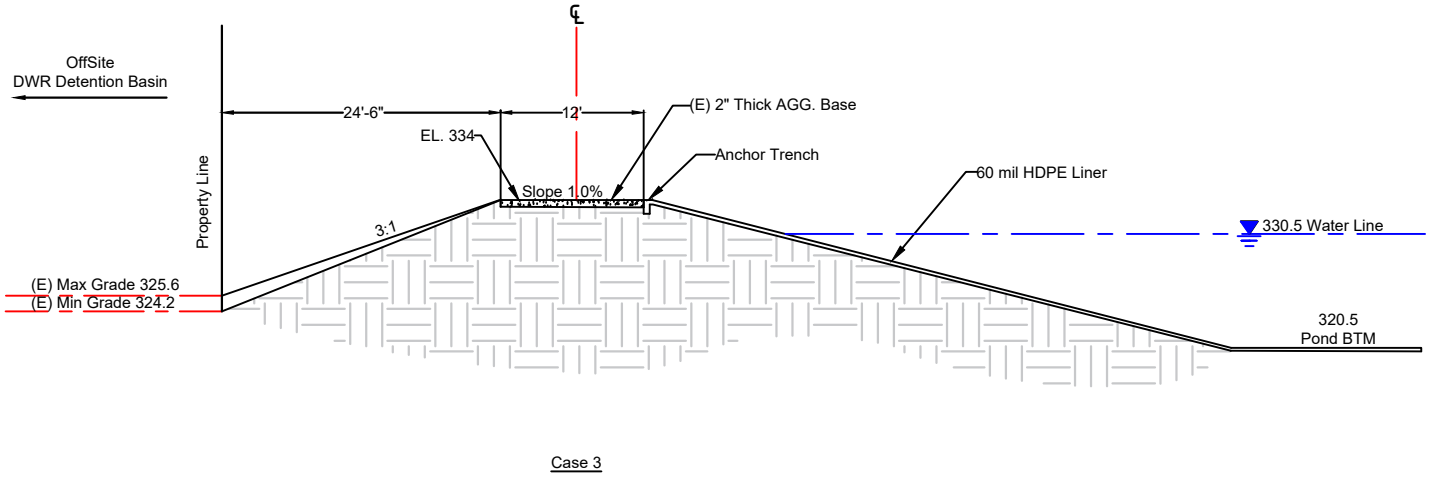
Recycled Water Feasibility Study

LEGEND

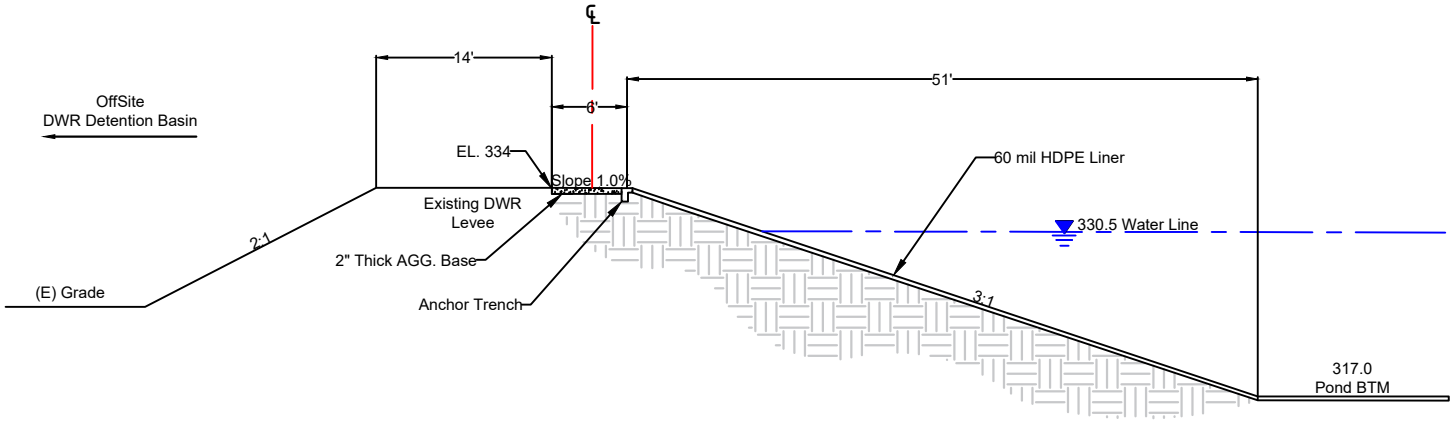
- Existing Perimeter Berm
- Effluent Disposal Ponds To Be Lined
- Southern Pacific Railroad Corridor
- Existing DWR Levee

0 2,000 FT

Figure 6-2
Improvements to Storage Ponds



Case 3



Case 4

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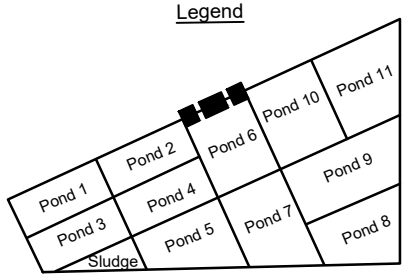
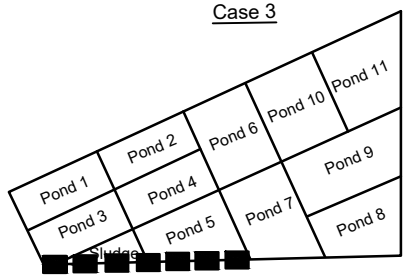
Legend

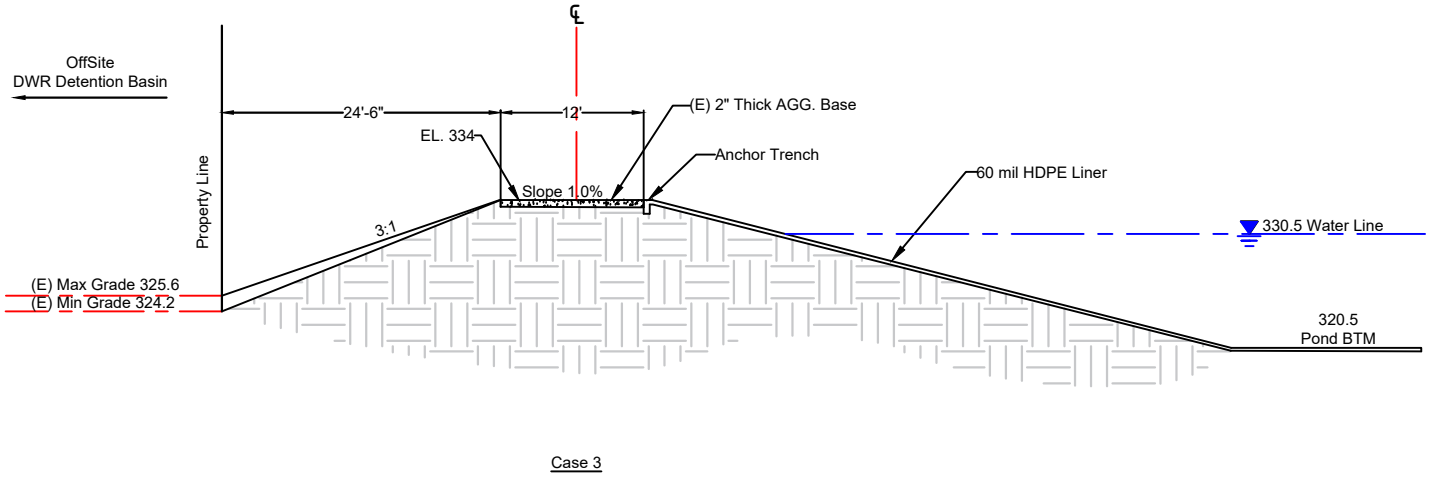


Case 3

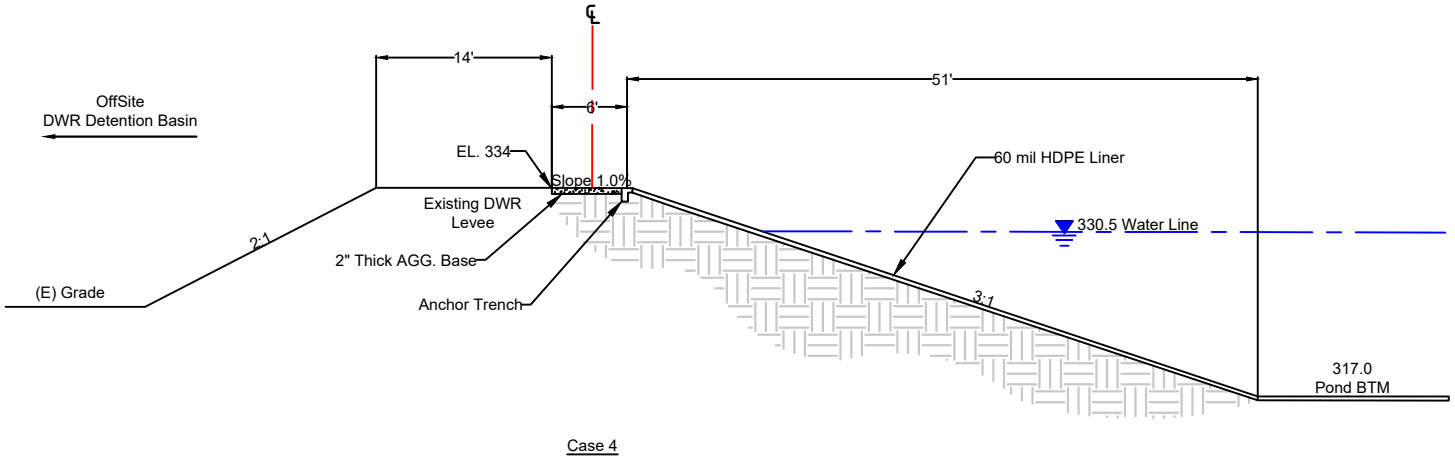


Case 4

Figure 6-6
Pond Details & Cross Sections
(Case3 and 4)



Case 3



Case 4

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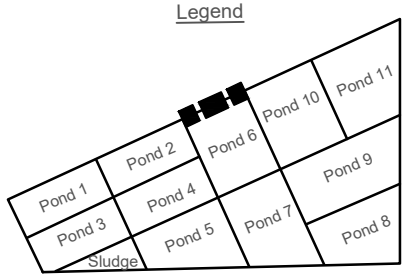
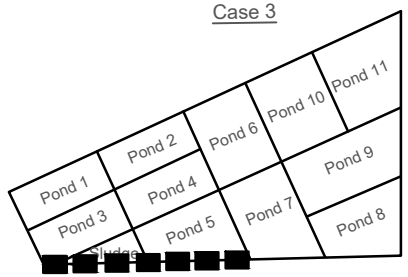
Recycled Water Feasibility Study

Legend



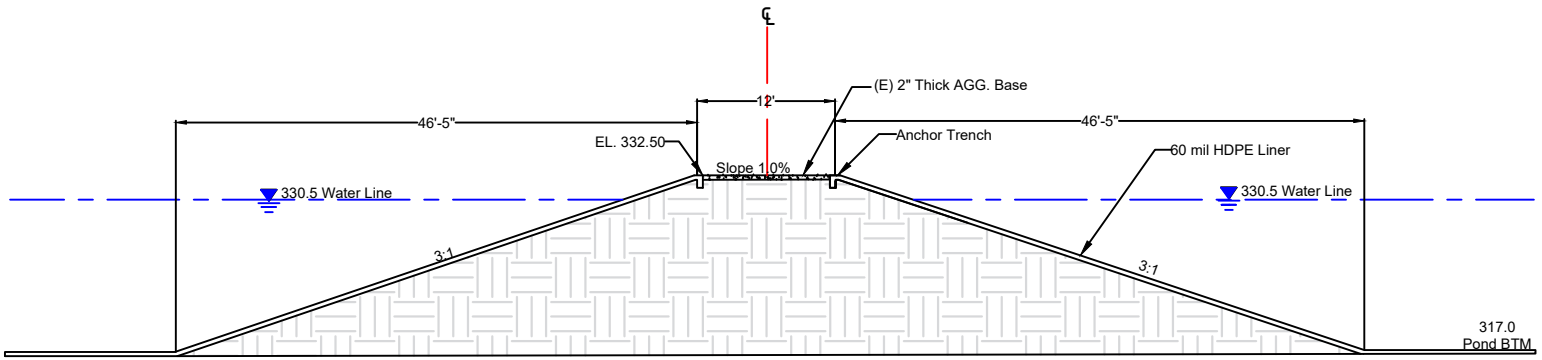
Case 3



Case 4

0 30 FT

Figure 6-6
Pond Details & Cross Sections
(Case3 and 4)



Case 5

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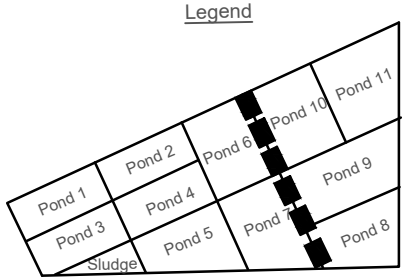
Legend



Case 5

0 30 FT

Figure 6-7
Pond Details & Cross Sections
(Case 5)

6.2.6. Onsite Disposal Area

As previously stated, the City is planning to remove Pond Nos. 8, 9, 10, and 11. The area covers approximately 32.5 acres of land that will be converted to a hydroponic farming facility. The facility will include a tertiary package facility, a 250,000-gallon storage tank, and ten (10) 20,000 square feet greenhouses that will use approximately 80 million gallons per year (or 25 AF/year) of tertiary treated water.

6.3. Offsite Effluent Reclamation Area

In order to convey treated wastewater to the reclamation field, improvements on both existing land and the WWTP will be required, in addition to new facilities and a conveyance system. Additional facilities and improvement include grading, pump stations, diversion structures, a tailwater return pond, alfalfa valves, and new pipelines to convey treated effluent to the reclamation field. The pipeline routing and design characteristics are discussed further in the following paragraphs.

6.3.1. Irrigation System Improvements

The proposed project will require a new irrigation pump station and miscellaneous irrigation system improvements. The irrigation pump station will pump water into a pipeline that will convey treated wastewater to the reclamation field. Figure 6-8 displays the proposed irrigation pump station.

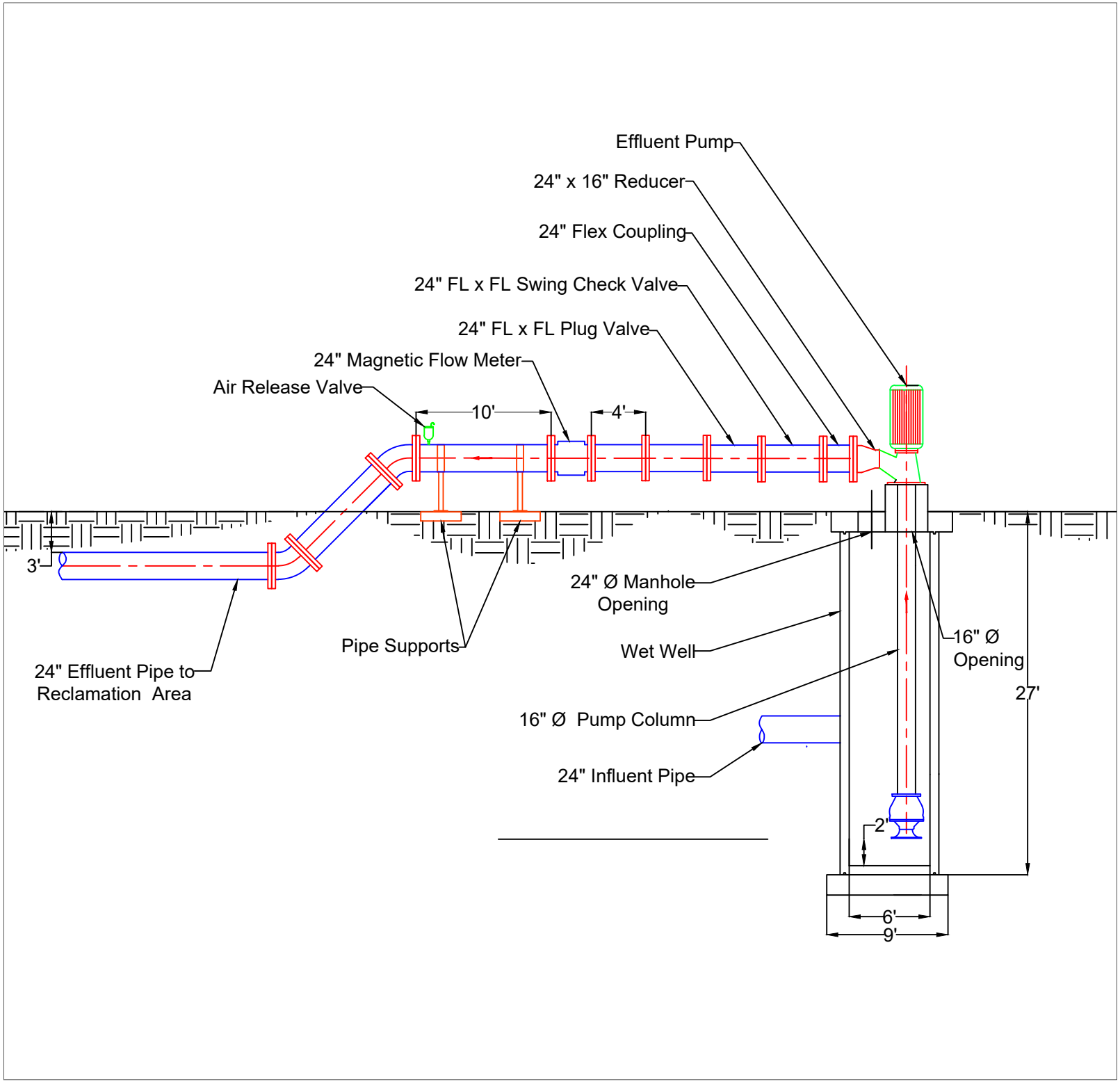
The irrigation pump station will consist of a below ground wet well and an above ground effluent pump. The irrigation pump station will be located within the WWTP, between ponds 2 and 6, as shown on Figure 6-1. A 24-inch influent plastic irrigation pipe (PIP) will convey treated effluent from the ponds into the underground wet well.

As shown in Figure 6-8, a multi-purpose vertical turbine pump will suction treated water upwards. Water from the pump will flow at a rate of 2,500 gallons per minute (gmp) and a velocity of 1.77 feet per second (ft/s). The 24-inch PIP will be placed 3-feet underground to convey treated effluent from the pump station to the reclamation field.

6.3.2. Pipeline Alignments

The proposed recycled water project will include approximately 14,670 linear feet of recycled water pipelines ranging between 8 to 24-inches in diameter. As previously stated, a 24-inch PIP will be used to deliver recycled water from the irrigation lift station to the reclamation fields. Outside of the WWTP, the 24-inch delivery pipeline will travel north approximately 190-feet across the Southern Pacific Railroad corridor, then southwest and west approximately 3,785-feet along the north side of the railroad tracks before entering the reclamation field, where it will terminate at Diversion Structure No. 1 on the southwest corner of the field. From Diversion Structure No.1, treated effluent will be conveyed through a 21-inch PIP with alfalfa valves spaced 25-feet apart. The pipeline will run approximately 2,190-feet in length and will terminate at Diversion Structure No. 2.

From Diversion Structure No. 2, water will be conveyed through a 21-inch PIP with alfalfa valves spaced 25-feet apart. The pipeline will run approximately 2,190 linear feet to the north. From this structure,



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0 20 FT

Figure 6-8
Irrigation Pump Station

water will also be conveyed to the east. A 21-inch PIP, 955-feet in length will connect Diversion Structures Nos. 2 and 3. From Diversion Structure No. 3, water will travel approximately 2,190 linear feet to the north and 2,075 linear feet to the south. The entire pipeline will consist of a 21-inch PIP with alfalfa valves spaced 25-feet apart. Spacing between the two (2) line of alfalfa valves will be approximately 1,000 feet. Figures 6-9 and 6-10 show a typical diversion structure and alfalfa valve that will be used in this recycled water project.

An 8-inch PVC pipeline, approximately 2,795 feet long, will be used as the tailwater return line. The tailwater return line will connect the tailwater return pump station to Diversion Structure No. 1, in order to recirculate recycled water back to the head of the irrigation system.

All delivery and irrigation pipelines will be installed 3-feet underground. Any pipeline that is shown above ground will be steel. A typical pipe trench detail is shown in Figure 6-11.

6.3.3. Tailwater Return System

The effluent reclamation field will be graded so that water can spread over the field by gravity flow. Water running off the lower end of the field will flow into an irrigation ditch that will discharge runoff water into a tailwater return pond, where it will be collected and reused for irrigation.

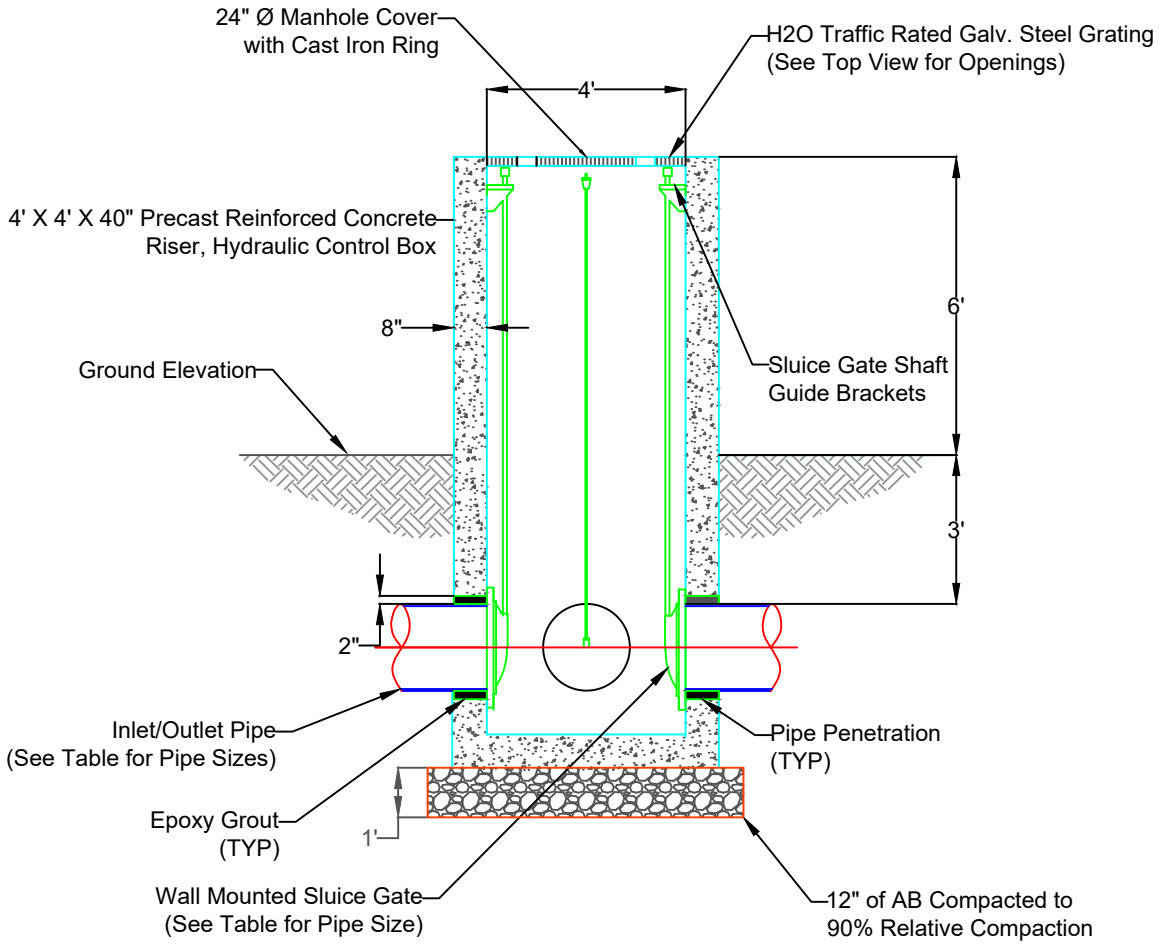
The tailwater pond will have a volume of approximately 36 AF. The pond will be excavated 12-feet below ground level, allowing gravity flow to fill the pond. The pond will have a minimum freeboard of 2-feet. Figure 6-12 displays the tailwater return pond embankment. The tailwater return pump will return water from the pond to the head of the irrigation system where it will be reused for irrigation. Figure 6-13 displays the proposed tailwater return pump station.

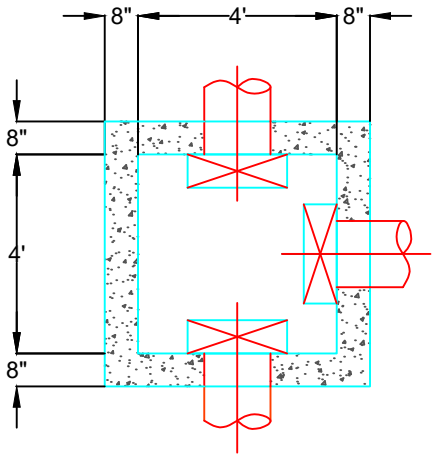
A 12-inch PVC pipe will connect the bottom of the tailwater return pump to the tailwater return pump station. The pump station will be approximately 18.5-feet below ground surface and 4-feet above ground. Similar to the irrigation pump station, a vertical turbine pump will suction water upwards, where it will then be pumped at a rate of 1,250 gpm and a velocity of 2.98 ft/s. As previously stated, an 8-inch PVC pipe, approximately 2,795 feet long, will be used as the tailwater return line.

6.3.4. Miscellaneous Improvements

Other miscellaneous improvements include the construction of perimeter berms, access roads, fencing, and signage. The proposed reclamation field is currently located in a flood area surrounded by levees. Perimeter berms will be constructed around the reclamation fields. These perimeter berms will prevent recycled water from entering adjacent properties. The elevation of the perimeter berms will be kept at least 3-feet below the elevation of the flood protection levees. A detail of the existing levees and proposed perimeter berms is shown in Figure 6-14.

The access road will consist of a 16-feet wide, 4-inch thick aggregate base roadway around the perimeter of the reclamation field, as well as through the middle of the field. A barbed wire fence will also be placed along the perimeter to enclose the reclamation field Recycled water signs will be placed every 100-feet along the perimeter of the fence. A total of 127 signs will be needed. The signs will be





Top View

Diversion Structure Pipe Schedule				
Structure No.	Pipe Size (inches)			
	North	South	East	West
DS No. 1	21	24	8	-
DS No. 2	21	21	21	-
DS No. 3	21	21	-	21

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0 5 FT

Figure 6-9
Typical Diversion Structure

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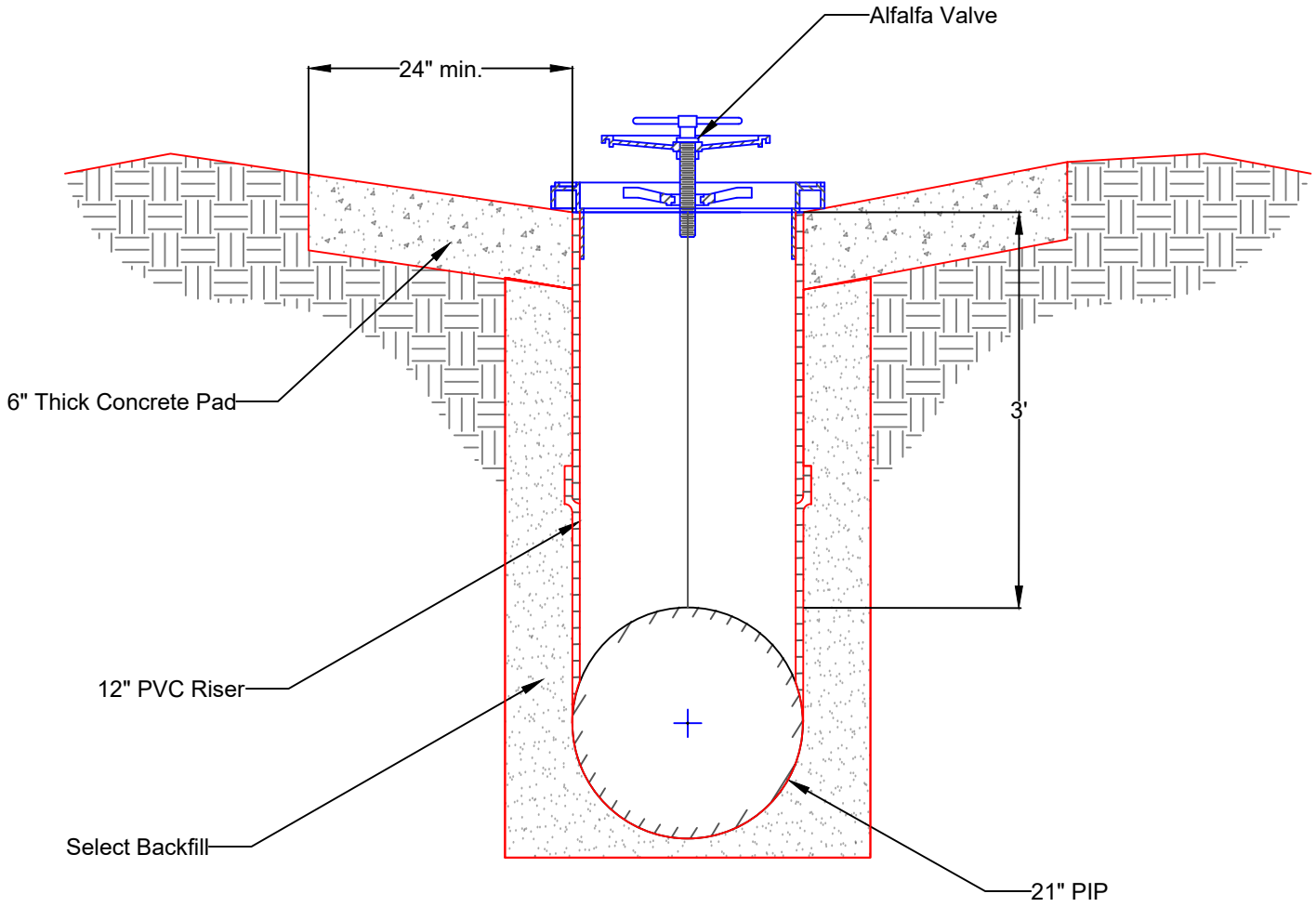

0 25 FT

Figure 6-10
Typical Alfalfa Valve

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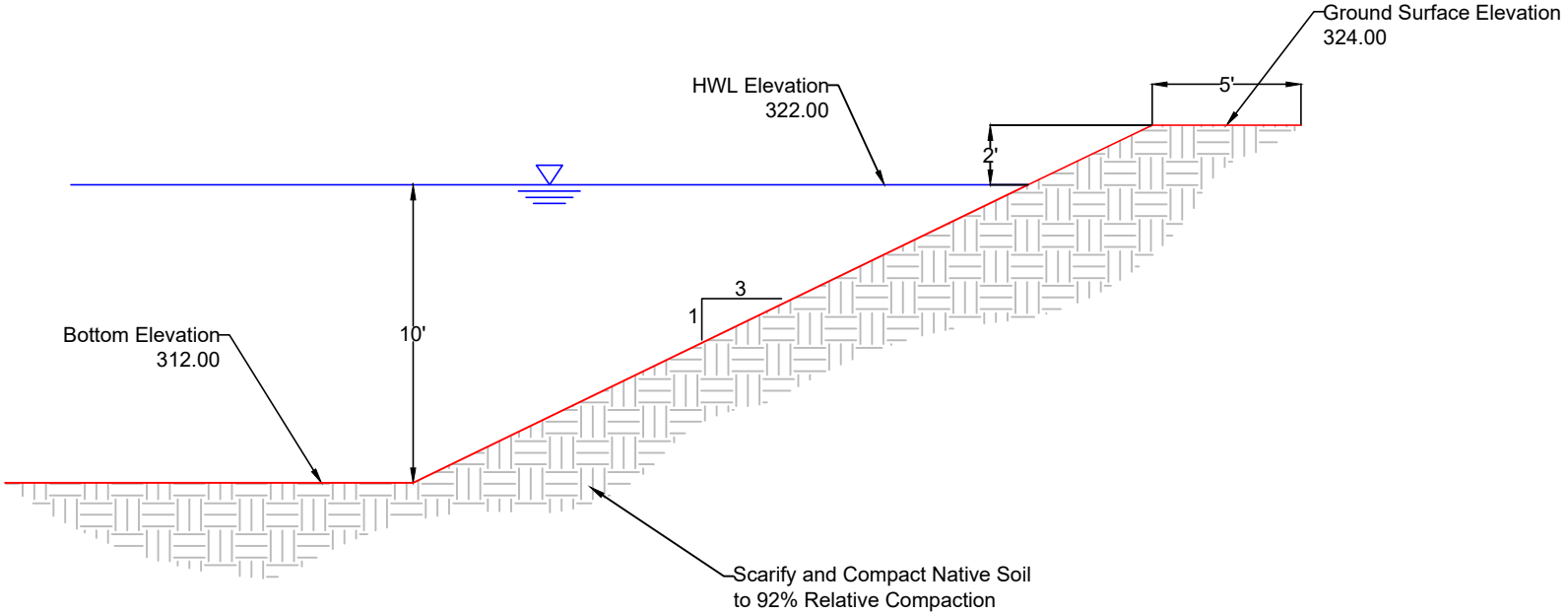
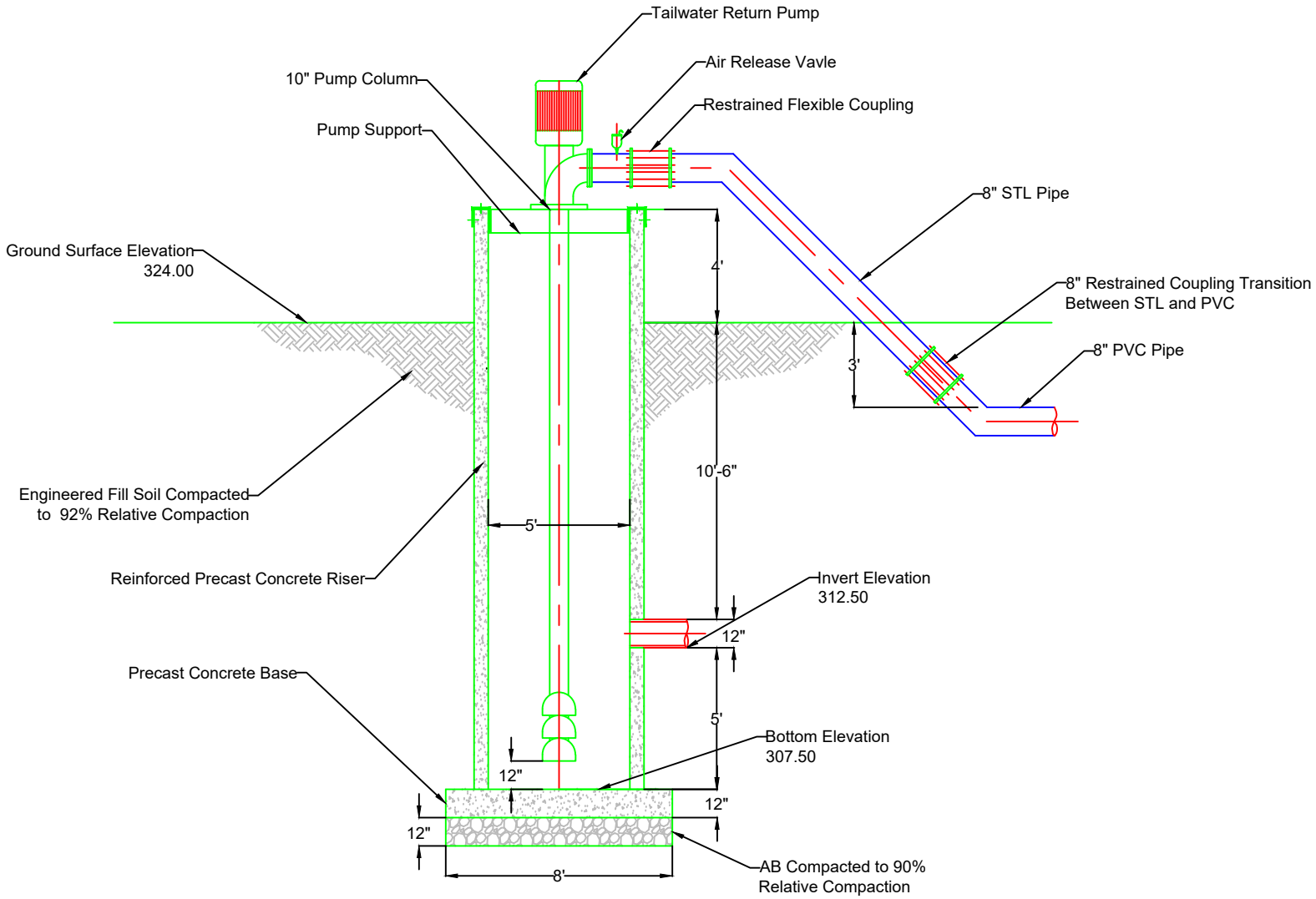


0 10 FT

Figure 6-12
Tailwater Pond Embankment



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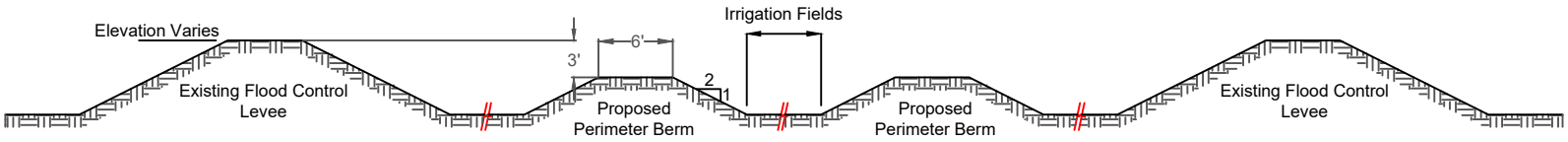
0 10 FT

Figure 6-13
Tailwater Return Pump Station



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Not to Scale

Figure 6-14
Proposed Perimeter Berm

an aluminum plate that is 10 inches wide, 14 inches long, and 1 inch thick. The signs will read “Recycled Water Do Not Drink” in both English and Spanish. Opinions of Probable Construction Cost

Table 6-3 displays the probable construction cost associated with this proposed recycled water project. This construction cost includes the cost estimate add improvements to the existing plant and to construct the onsite and offsite disposal areas. The construction cost also includes an estimate for all materials needed for this project, contingency, design engineering, and a construction administration cost.

Table 6-3 Probable Construction Cost

Item	Description	Quantity	Units	Unit Price	Total Amount
1	Headworks Rehabilitation	1	EA	$ 75,000.00	$ 75,000.00
2	Replace Aerators in Treatment Ponds	1	LS	$ 82,500.00	$ 82,500.00
3	Backup Emergency Generator	1	EA	$ 75,000.00	$ 75,000.00
4	"Pump Back" Pump Station	1	EA	$ 50,000.00	$ 50,000.00
5	14" HDPE Sewer Lines to Emergency Pond	910	LF	$ 125.00	$ 113,750.00
6	Emergency Diversion Vault	1	EA	$ 25,000.00	$ 25,000.00
7	Plant Water Improvements	1	EA	$ 50,000.00	$ 50,000.00
8	Emergency Storage Pond Grading	3,622	CY	$ 7.00	$ 25,354.00
9	Effluent Storage Pond No. 2	177,581	SF	$ 0.87	$ 153,607.56
10	Effluent Storage Pond No. 3	177,581	SF	$ 0.87	$ 153,607.56
11	Effluent Storage Pond No. 4	172,429	SF	$ 0.87	$ 149,151.02
12	Effluent Storage Pond No. 5	251,533	SF	$ 0.87	$ 217,575.71
13	Effluent Storage Pond No. 6	252,717	SF	$ 0.87	$ 218,600.60
14	Effluent Storage Pond No. 7	287,919	SF	$ 0.87	$ 249,049.66
15	Excavate Pond No. 6	9,360	CY	$ 7.00	$ 65,519.28
16	Tertiary Treatment Package Facility	1	EA	$ 400,000.00	$ 400,000.00
17	250,000 Gallon Storage Tank	1	EA	$ 300,000.00	$ 300,000.00
18	Irrigation Pump Station	1	EA	$ 250,000.00	$ 250,000.00
19	Effluent Diversion Structure	3	EA	$ 5,000.00	$ 15,000.00
20	24-inch PIP	3,975	LF	$ 75.00	$ 298,125.00
21	21-inch PIP	9,728	LF	$ 60.00	$ 583,650.00
22	8 inch PVC	2,602	LF	$ 40.00	$ 104,080.00
23	Alfalfa Valves	349	EA	$ 500.00	$ 174,500.00
24	Tailwater Pond Construction	10,000	CY	$ 7.00	$ 70,000.00
25	Tailwater Pond Inlets	2	EA	$ 3,000.00	$ 6,000.00
26	Tailwater Pump Station	1	EA	$ 2,500.00	$ 2,500.00
27	Electrical	1	EA	$ 300,000.00	$ 300,000.00
28	Fencing	12,760	LF	$ 5.00	$ 63,800.00
29	Road	3,653	TON	$ 28.93	$ 105,663.89
30	Sings	127	EA	$ 20.00	$ 2,540.00

Item	Description	Quantity	Units	Unit Price	Total Amount
31	Perimeter Berm Earthwork	8,709	CY	$ 10.00	$ 87,093.25
				Subtotal	$ 4,466,667.54
32	Contingency (15%)				$ 670,000.13
33	Design Engineer (10%)				$ 446,666.75
34	Construction Administration (10%)				$ 446,666.75
				Subtotal	$ 6,030,001.18

6.4. Implementation Plan

The following project Tasks must be completed to implement the recycled water project:

- Design and construct the proposed recycled water project
- Receive Agreement form the U.S. Bureau of Reclamation to lease land
- Obtain permits and clearances from applicable regulatory agencies (Report of Waste Discharge report, Title 22 report, Nitrogen Plan, etc.)
- Conduct environmental process (CEQA) and develop compliance documents
- Conduct a Proposition 218 process

SECTION 7 - ENVIRONMENTAL ASSESSMENT

7.1. Biological Assessment

Effluent recycling projects have the potential to damage or modify biotic habitats used by sensitive plant and animal species. In such cases, projects may be regulated by state or federal agencies, subject to the provisions of the Californian Environmental Quality Act (CEQA), and/or local policies and ordinances. Environmental review under CEQA is required for this proposed recycled water project.

Reconnaissance-level field surveys of the project site were conducted on April 6 and May 23, 2016, by Live Oak Associates, Inc. (LOA) staff ecologists. A copy of this report is included in Appendix H. Surveys consisted of LOA staff walking and driving through the project site to identify principal land uses and biotic habitats. The surveys also consisted of identifying plant and animal species located on the site and assessing the suitability of the project site's habitats for special status species.

7.1.1. Project Site

At the time of the April and May 2016 field surveys, the project site consisted of vacant land managed as part of the Arroyo Pasajero Westside Detention Basin, the Southern Pacific Railroad corridor, and a portion of the Huron WWTP. Topography of the site was nearly flat, with elevation ranging from 335-feet National Geodetic Vertical Datum (NGVD) in the west to 320-feet NGVD in the east. Three (3) soil-mapping units were identified within the project site: Excelsior, sandy substratum-Westhaven association, flooded, 0 to 2 percent slopes; Westhaven loam, 0 to 2 percent slopes; and Westhaven clay loam, 0 to 2 percent slopes. The properties of these soils cannot support the formation of vernal pools and do not have unique characteristics that would support edaphic rare plant species.

7.1.2. Land Uses and Biotic Habitats

During the April 2016 survey, three (3) habitat/land use types were observed on the project site: non-native grasslands, wastewater treatment ponds, and ruderal. At the time of the field survey, non-native grasslands accounted for approximately 195 acres of the projects site and represented the entire reclamation field. Ruderal, or disturbed, habitats on the project site consisted of the Southern Pacific Railroad and associated access roads and embankments, and disturbed lands surrounding the WWTP percolation/evaporation ponds. The railroad corridor was densely vegetated with common weeds such as barnyard barley, red brome, and Russian thistle, with mule fat occasionally observed. Disturbed lands surrounding the WWTP ponds were intensively maintained and primarily barren of vegetation.

Since the project site is subject too regular WWTP maintenance activities, ruderal habitats are of a relatively low value to native wildlife. However, several species would be expected to occasionally pass through ruderal areas, and certain disturbance-tolerant species may be attracted to this habitat. For example, the killdeer is common in degraded habitats and regularly nests on gravel or bare dirt surfaces. Raccoons commonly visit human-altered habitats and would be expected to occur in the WWTP from time to time. Since the railroad corridor does not appear to experience regular ground disturbance, it may attract burrowing rodents such as the California ground squirrel and Botta's pocket

gopher. Several California ground squirrel burrow complexes were observed in the railroad corridor at the time of the April field survey.

Wildlife use of the percolation/evaporation ponds would be largely determined by whether the ponds are flooded. When the ponds are flooded, they can be used for breading by the western toad, Pacific tree frog, and American bullfrog. A western toad was observed on the banks of Pond No. 8 during the April field survey. Numerous waterfowl and wading birds also have the potential to use the ponds during periods of flooding.

When dry, the ponds can be used by a variety of avian species adapted to open or disturbed environments. Reptiles and amphibians would also likely use the ponds as habitats.

7.1.3. Special Status Plants and Animals

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species are considered "rare" and vulnerable to extinction as human population continues to grow and habitats occupied by these species are converted to agricultural and urban uses. State and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with mechanisms for conserving and protecting the diversity of native plant and animal species. A significant number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation, while others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own lists of native plants considered rare, threatened or endangered. Collectively, these plants and animals are referred to as "special status species."

The California Natural Diversity Data Base (CNDDB) was used for special status species occurrences in the nine (9) USGS 7.5 minute quadrangles containing and immediately surrounding the project site. An official species list was obtained using the USFWS Information for Planning and Conservation (IPaC) system for federally listed species with the potential to be affected by the project. These species and their potential to occur in the project site are listed in Table 7-1.

Table 7-1 Special Status Species that Could Occur in Project Vicinity

Species	Status [1]	Occurrence on Project Site[2]
California Jewel-Flower	FE, CE, CNPS 1B	Absent
San Joaquin Woolly Threads	FT, CNPS 1B	Absent
Brittlescale	CNPS 1B	Absent
Lemmon's Jewel-Flower	CNPS 1B	Absent
Vernal Pool Fairy Shrimp	FT	Absent
Delta Smelt	FT	Absent
California Red-Legged Frog	FT	Absent
Blunt-Nosed Leopard Lizard	FE, CE, CFP	Absent

Species	Status [1]	Occurrence on Project Site[2]
Giant Garter Snake	FT, CT	Absent
Swainson's Hawk	CT	Present
Nelson's Antelope Squirrel	CT	Absent
Fresno Kangaroo Rat	FE, CE	Absent
Tipton Kangaroo Rat	FE, CE	Absent
San Joaquin Kit Fox	FE, CT	Possible
Townsend's Big-Eared Bat	CCT, CSC	Possible
Western Spadefoot	CSC	Possible
San Joaquin Whipsnake	CSC	Possible
Long-Eared Owl	CSC	Possible
Northern Harrier	CSC	Present
White-Tailed Kite	CEP	Possible
Burrowing Owl	CSC	Possible
Loggerhead Shrike	CSC	Present
Tricolored Blackbird	CSC	Possible
Yellow-Headed Blackbird	CSC	Possible
Tulare Grasshopper M	CSC	Absent
Short-Nosed Kangaroo Rat	CSC	Absent
Pallid Bat	CSC	Possible
Western Mastiff Bat	CSC	Possible
American Badger	CSC	Possible
Note: (1) Explanation of Status Codes: Federally Endangered (FE), Federally Threatened (FT), California Endangered (CE), California Threatened (CT), California Threatened Candidate (CCT), California Fully Protected (CFP), California Species of Special Concern (CSC), California Native Plant Society Listing (CNPS), Plants Rare, Threatened, or Endangered in California and elsewhere (1B). (2) Explanation of Occurrence Designations and Status Codes: Present-Species observed on the site at time of field surveys or during recent past, Possible-Species not observed on the site, but it could occur there from time to time, and Absent-Species not observed on the site, and precluded from occurring there due to absence of suitable habitat.		

7.1.4. Endangered, Threatened, Or Special Status Plants and Animals

The western spadefoot, Swanson hawk, burrowing owl, San Joaquin kit fox either have the potential to occur or have been documented within the vicinity of the project site. However, the proposed alfalfa fields can provide potential nesting and forage for these endangered animals. Therefore, the project site does not have the potential to significantly damage or modify biotic habitats used by sensitive plant and animal species.

7.1.5. Jurisdictional Waters

Jurisdictional waters are those rivers, creeks, drainages, lakes, ponds, reservoirs, and wetlands that are subject to the authority of the U.S. Army Corps of Engineers (USACE), CDFW, and/or RWQCB. At the

time of the field surveys, no portion of the project site appeared to meet the technical criteria of a wetland. Waters subject to the jurisdiction of the USACE and CDFW are absent from the project site.

7.1.6. 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 plant and animal species, of importance in maintaining water quality or sustaining flows, etc. Examples of natural communities of special concern include various types of wetlands and riparian habitat.

During the March and April field surveys, no natural communities of special concern were identified on the project site.

7.1.7. 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, rivers and creeks supporting riparian vegetation, and ridgelines.

The project site does not contain features that would be likely to function as wildlife movement corridors. However, the Pacific flyway, one of four major bird migration routes in North America, passes over the project site and much of the rest of California.

7.1.8. 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 that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.

During the March and April field surveys, designated critical habitats were absent from the project site and surrounding lands.

7.2. Cultural Assessment

As previously stated, this project is subject to the CEQA, which holds municipal and state agencies accountable for impacts to the cultural environment. If a project has the potential to cause a substantial adverse change in the characteristics of an important cultural resource, known as a "historical resource" under CEQA, (either through demolition, destruction, relocation, alteration, or by other means) then the project is determined to have a significant impact on the environment. In addition, because the project will be funded by the Safe Drinking Water State Revolving Fund (SDWSRF), a joint federal-state program, it is a federal undertaking per Title 36Code of Federal Regulations, Section 800.16(y) subject to Section 106 of the National Historic Preservation Act (NHPA). As such, the lead federal agency must consider whether a project will have an adverse effect on historic properties or resources that may be eligible for inclusion in the National Register of Historic Places within the Project's Area of Potential Effects (APE).

To meet these state and federal requirements, Applied EarthWorks, Inc. (AE) was retained to conduct a background research, complete a records search, request a search of the Native American Heritage Commission's Sacred Lands File, reach out to appropriate Native American contacts, conduct a cultural resources survey, and prepare a technical evaluation report. The cultural resources investigation performed by AE staff was done to satisfy both the requirements of CEQA and Section 106 of the NHPA. Findings determined by AE staff are presented in accordance with *Archaeological Resource Management Reports (ARMR): Recommended Contents and Formats*. A copy of this cultural evaluation report is provided in Appendix I.

7.2.1. Archaeological Resources

Archaeological resources are defined as places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric or historic. The majority of such places in the San Joaquin Valley region are associated with either Native American or Euromerican occupation of the area. The most frequently encountered prehistoric and early historic Native American archaeological sites are village settlements within residential areas and cemeteries; temporary camps where food and raw materials were collected; smaller, briefly occupied sites where tools were manufactured or repaired; and special-use areas like caves, rock shelters, and sites of rock art. Historic archaeological sites may include foundations or features such as privies, corrals, and trash dumps.

The Project site lies within the homeland of the Southern Valley Yokuts. The Yokuts people, which included northern valley and foothill groups, collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Fresno River southward to the Kern River. The Tulare Lake basin offered a rich and varied array of resources to the several Southern Valley Yokuts tribes occupying its vicinities. Of these groups, the Tachi occupied the western shores of Tulare Lake and the area around the Fresno Slough. According to the mid-twentieth century ethnographer Frank Latta, the City of Huron was once identified as the Tachian village site of Holón (Golon). Other nearby villages included Údgeu (Udjiu) about five miles southwest from Holón and Walnau (Walna) on the westernmost shores of Tulare Lake about 12 miles south of Huron.

Similar to other towns in the Central Valley, Huron owes its existence to the railroad. In the spring of 1872, the Southern Pacific Railroad rolled into Fresno County, connecting this previously remote region with the San Francisco Bay area. Five years later, the railroad built a branch line from Goshen 40 miles westward; the endpoint of this line became Huron. It appears that the railroad's intent was to improve the area's infrastructure in order to better market its land holdings there.

7.2.2. Cultural Resources Inventory

As part of the Cultural Resources Inventory for the Project site, AE conducted a record search at the Southern San Joaquin Valley Information Center (SSJVIC), California Historical Resources Information System in November 2015 and again in March 2016. Records searched included the National Register of Historic Places, California Register of Historical Resources, California Historical Landmarks, California Inventory of Historic Resources, California Points of Historical Interest, Directory of Properties in the

Historic Property Data File and Archaeological Determinations of Eligibility, California Department of Transportation State and Local Bridge Survey, General Land Office plats, and other pertinent historic maps.

According to records form the SSJVIC, the Project site does not contain cultural resources that have been recorded or previously identified. However, two cultural recourses have been identified within 0.5 miles of the Project site; the San Joaquin Valley Railroad and the California Aqueduct. Both cultural resources are unrecorded segments of historical linear built environment resources.

Along with the records search, AE's archaeologist conducted a pedestrian survey over the entire proposed Project site. During the survey, no isolated artifacts, archaeological sites, or historical built environment resources were identified.

7.2.3. Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event that human remains are discovered in any location other than a dedicated cemetery, excavation or ground disturbance of the site, or any area nearby that is suspected to overlay adjacent remains, must cease until a County coroner determines whether or not the remains are subject to the coroner's authority. If the human remains are of Native American decent, the coroner must notify the Native American Heritage Commission within 24 hours of the identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper and dignified treatment of the remains and associated grave artifacts.

7.2.4. 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. If an impact is significant, CEQA requires feasible measures to minimize the impact.

According to AE's cultural investigation, no unique geological features or known fossil-bearing sediments were identified in the vicinity of the proposed Project site. However, it is possible that previously unknown, buried paleontological resources or unique geological sites may be uncovered during subsurface construction activities.

SECTION 8 - INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

8.1. Purpose

Through AM Consulting Engineers, the City of Huron retained Crawford and Bowen Planning, Inc. to prepare an Initial Study/Mitigated Negative Declaration (IS/MND) consistent with CEQA requirements, relevant case law, and specification of the City of Huron. According to CEQA Guidelines Section 15063(c), the purpose of an Initial Study is to provide a preliminary analysis of a proposed action to determine whether a Negative Declaration or an Environmental Impact Report (EIR) should be prepared. An Initial Study also enables a Lead Agency, in this case the City of Huron, to modify a project by mitigating adverse impacts in lieu of preparing an EIR, thereby potentially enabling the project to qualify for a Mitigated Negative Declaration.

In July of 2016, Crawford and Bowen Planning, Inc. submitted an IS/MND which presented the CEQA checklist and environmental analysis for all impact areas, mandatory finding of significance, and feasible mitigation measures. A copy of this report is provided in Appendix J. The following sections describe the findings from the Initial Study and proposed mitigation measures as well as conditions recommended by responsible agencies who commented on the project.

8.2. Environmental Impacts and Mitigation Measures

The Initial Study analysis covered the 17 impact sections identified in the CEQA Guidelines Appendix G Checklist. Biological and cultural resources were the only environmental factors determined to be potentially affected by this proposed Recycled Water Project. Table 8-1 list the mitigation measures recommended in the Initial Study for the proposed Project and identifies monitoring and reporting requirements. The first column of the table identifies the mitigation measure. The second column, entitled "Party Responsible for Implementing Mitigation," names the party responsible for carrying out the required action. The third column, "Implementation Timing," identifies the time the mitigation measure should be initiated. The fourth column, "Party Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented.

Table 8-1 Mitigation and Monitoring Measures

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring
BIO-1 (Take Avoidance Survey). A pre-construction "take avoidance" survey shall be conducted by a qualified biologist for burrowing owls within 14 days of the onset of construction according to methods described in the Staff Report on Burrowing Owl Mitigation1. The survey area shall include all accessible suitable habitat on and within 200 meters of Project impact areas.	City of Huron	Prior to Construction	City of Huron

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring
BIO-2 (Avoidance of Active Nests). If proposed Project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near Project impact areas, a 200-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers shall remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. 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.	City of Huron	Prior to and during Construction	City of Huron
BIO-3 (Avoidance or Passive Relocation of Resident Owls). During the non-breeding season (September 1-January 31), resident owls occupying burrows in Project impact areas shall either be avoided, or passively relocated to alternative habitat. If the Applicant chooses to avoid active owl burrows within the impact area during the non-breeding season, a 50-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the Applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50-foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50-foot buffer, 3) installing one-way doors on all potential owl burrows within the 50-foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50-foot buffer.	City of Huron	Prior to and during Construction	City of Huron
BIO-4 (Avoidance). In order to avoid impacts to nesting Swainson's hawks, construction activities shall occur, where possible, outside the nesting season, typically defined as March 1-September 15.	City of Huron	Prior to Construction	City of Huron

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring
BIO-5 (Pre-construction Surveys). If construction activities must occur between March 1 and September 15, a qualified biologist shall conduct nest surveys for Swainson's hawks on and within ½ mile of the Project site in accordance with Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley2. Three nest surveys shall be conducted in each of two survey periods, with the survey periods defined as follows: Period I – January 1 to March 20, Period II – March 20 to April 5, Period III – April 5 to April 20, Period IV – April 21 to June 10, and Period V – June 10 to July 30. Surveys shall take place in the two survey periods immediately prior to the start of construction, with the exception of Period III, when no surveys should take place per the Swainson's Hawk Technical Advisory Committee 2000 guidelines. The surveys shall consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.	City of Huron	Prior to Construction	City of Huron
BIO-6 (Establish Buffers). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer shall be established based on local conditions and agency guidelines. Disturbance-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.	City of Huron	Prior to and during Construction	City of Huron
BIO-7 (Avoidance). If feasible, the Project shall be implemented outside of the avian nesting season, typically defined as February 1 to August 31.	City of Huron	Prior to and during Construction	City of Huron
BIO-8 (Pre-construction Surveys). If construction is to occur between February 1 and August 31, a qualified biologist shall conduct pre-construction surveys for active migratory bird nests within 14 days of the onset of construction. Should any active nests be discovered in or near proposed construction zones, the biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.	City of Huron	Prior to Construction	City of Huron
BIO-9. Prior to or during (as appropriate) the construction of the proposed Project, the applicant shall implement the mitigation measures derived from the USFWS 2011 Standardized Recommendations for Protection of the San	City of Huron	Prior to Construction	City of Huron

Mitigation Measure	Party Responsible for Implementing Mitigation	Implementation Timing	Party Responsible for Monitoring
Joaquin Kit Fox Prior to or During Ground Disturbance, provided in Appendix I.			
BIO-10 (Preconstruction Surveys). A preconstruction survey for American badgers shall be conducted by a qualified biologist within 30 days of the start of construction. Preconstruction surveys shall be conducted in all suitable denning habitat of the Project site.	City of Huron	Prior to Construction	City of Huron
BIO-11: Avoidance. Should an active natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer shall be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.	City of Huron	Prior to and during Construction	City of Huron
CUL-1: If a potentially significant historical, archaeological, or paleontological resource, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains or trash deposits are encountered during subsurface construction activities (i.e., trenching), all construction activities within a 100-foot radius of the identified potential resource shall cease until a qualified archaeologist evaluates the item for its significance and records the item on the appropriate State Department of Parks and Recreation forms. The archaeologist shall determine whether the item requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the item is determined to be significant under California Environmental Quality Act, the archaeologist shall recommend feasible mitigation measures, which may include avoidance, preservation in place or other appropriate measure.	City of Huron	During Construction	City of Huron

8.3. Mitigated Negative Declaration

According to the CEQA Guidelines Section 15070(b), a Mitigated Negative Declaration is appropriate if it is determined that:

- Revisions in the project plans or proposals made by or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur; and
- There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment.

Based on the findings of the Initial Study, it has been determined that with mitigation measures and features incorporated into the project design and operation, the environmental impacts associated with this proposed recycled water project are less than significant; therefore, a Mitigated Negative Declaration can be adopted.

SECTION 9 - CONSTRUCTION FINANCING PLAN

9.1. Funding Sources

The adequate funding of capital costs is a primary constraint in implementing any construction project, especially water recycling projects. Recycled water projects have several State, Federal, and local funding sources available. For this recycled water project, the City is applying for construction funding through the Clean Water State Revolving Fund (CWSRF).

The City's 2010-2014 Median Household Income (MHI) is approximately $28,896 or 47 percent of the State of California MHI. Thus, the community is considered to be Severely Disadvantaged (SDAC). Unemployment rates have soared over recent years due to the drought conditions in the State and the community's agriculture-based economy. Current unemployment rates published by the California Employment Development Department (EDD) are approximately 8.7 percent which is in excess of 2 percentage points above the State's unemployment rate.

It is assumed in this financing plan that the City will receive 100 percent loan forgiveness for this recycling project.

9.2. Operation and Maintenance Cost

Operation and maintenance cost for this recycled water project will include annual power costs, and annual maintenance of the pumps and irrigation system.

Annual power costs are estimated to be approximately $5,000 based on a 20 HP irrigation pump running for an average of 7 hours per day. The annual operation and maintenance costs will be offset by revenues obtained from the operation of the reclamation area (i.e. sale of alfalfa). Therefore, this recycled water project is not expected to increase the current rates to customers.

MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been formulated based upon the findings of the Initial Study/Mitigated Negative Declaration (IS/MND) for the Huron Recycled Water Project located at the existing WWTP and the adjacent land immediately north. The MMRP lists mitigation measures recommended in the IS/MND for the proposed Project and identifies monitoring and reporting requirements as well as conditions recommended by responsible agencies who commented on the project.

The first column of the Table identifies the mitigation measure. The second column, entitled "Party Responsible for Implementing Mitigation," names the party responsible for carrying out the required action. The third column, "Implementation Timing," identifies the time the mitigation measure should be initiated. The fourth column, "Party Responsible for Monitoring," names the party ultimately responsible for ensuring that the mitigation measure is implemented. The last column will be used by the City to ensure that individual mitigation measures have been monitored.

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
Mitigation Measure BIO-1 (Take Avoidance Survey). A pre-construction "take avoidance" survey shall be conducted by a qualified biologist for burrowing owls within 14 days of the onset of construction according to methods described in the *Staff Report on Burrowing Owl Mitigation*[1]. The survey area shall include all accessible suitable habitat on and within 200 meters of Project impact areas.	City of Huron	Prior to construction	City of Huron	
Mitigation Measure BIO-2 (Avoidance of Active Nests). If proposed Project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near Project impact areas, a 200-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers shall remain	City of Huron	Prior to and during construction	City of Huron	

[1] California Department of Fish and Game (CDFG). 2012. Draft Report on Burrowing Owl Mitigation. The Resources Agency, Sacramento, CA.

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
in place for the duration of the breeding season, unless otherwise arranged with CDFW. 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 BIO-3 (Avoidance or Passive Relocation of Resident Owls). During the non-breeding season (September 1-January 31), resident owls occupying burrows in Project impact areas shall either be avoided, or passively relocated to alternative habitat. If the Applicant chooses to avoid active owl burrows within the impact area during the non-breeding season, a 50-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the Applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum	City of Huron	Prior to and during construction	City of Huron	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
50-foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50-foot buffer, 3) installing one-way doors on all potential owl burrows within the 50-foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50-foot buffer.				
Mitigation Measure BIO-4 (Avoidance). In order to avoid impacts to nesting Swainson's hawks, construction activities shall occur, where possible, outside the nesting season, typically defined as March 1-September 15.	City of Huron	Prior to construction	City of Huron	
Mitigation Measure BIO-5 (Pre-construction Surveys). If construction activities must occur between March 1 and September 15, a qualified biologist shall conduct nest surveys for Swainson's hawks on and within ½ mile of the Project site in accordance with *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*[2]. Three nest	City of Huron	Prior to construction	City of Huron	

[2] Ibid.

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
surveys shall be conducted in each of two survey periods, with the survey periods defined as follows: Period I – January 1 to March 20, Period II – March 20 to April 5, Period III – April 5 to April 20, Period IV – April 21 to June 10, and Period V – June 10 to July 30. Surveys shall take place in the two survey periods immediately prior to the start of construction, with the exception of Period III, when no surveys should take place per the SHTAC 2000 guidelines. The surveys shall consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.				
Mitigation Measure BIO-6 (Establish Buffers). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer shall be established based on local conditions and agency guidelines. Disturbance-free buffers shall be identified on the ground with flagging, fencing, or by other easily visible means, and shall be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.	City of Huron	Prior to and during construction	City of Huron	
Measure BIO-7 (Avoidance). If feasible, the Project shall be implemented outside of the avian	City of Huron	Prior to and during construction	City of Huron	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
nesting season, typically defined as February 1 to August 31.				
Measure BIO-8 (Pre-construction Surveys). If construction is to occur between February 1 and August 31, a qualified biologist shall conduct pre-construction surveys for active migratory bird nests within 14 days of the onset of construction. Should any active nests be discovered in or near proposed construction zones, the biologist shall identify a suitable construction-free buffer around the nest. This buffer shall be identified on the ground with flagging or fencing, and shall be maintained until the biologist has determined that the young have fledged and are capable of foraging independently.	City of Huron	Prior to construction	City of Huron	
Mitigation Measure BIO-9. Prior to or during (as appropriate) the construction of the proposed Project, the applicant shall implement the mitigation measures derived from the USFWS 2011 Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance, provided in Appendix C.	City of Huron	Prior to construction	City of Huron	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
Mitigation Measure BIO-10 (Preconstruction Surveys). A preconstruction survey for American badgers shall be conducted by a qualified biologist within 30 days of the start of construction. Preconstruction surveys shall be conducted in all suitable denning habitat of the Project site.	City of Huron	Prior to construction	City of Huron	
Mitigation Measure BIO-11 (Avoidance). Should an active natal den be identified during the preconstruction surveys, a suitable disturbance-free buffer shall be established around the den and maintained until a qualified biologist has determined that the cubs have dispersed or the den has been abandoned.	City of Huron	Prior to and during construction	City of Huron	
Mitigation Measure CUL-1: If a potentially significant historical, archaeological, or paleontological resource, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains or trash deposits are encountered during subsurface construction activities (i.e., trenching), all construction activities within a 100-foot radius of the identified potential resource shall cease	City of Huron	During construction	City of Huron	

Mitigation Measure	Party responsible for Implementing Mitigation	Implementation Timing	Party responsible for Monitoring	Verification (name/date)
until a qualified archaeologist evaluates the item for its significance and records the item on the appropriate State Department of Parks and Recreation (DPR) forms. The archaeologist shall determine whether the item requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the item is determined to be significant under California Environmental Quality Act, the archaeologist shall recommend feasible mitigation measures, which may include avoidance, preservation in place or other appropriate measure.				

Chapter 5

PREPARERS

LIST OF PREPARERS

Crawford & Bowen Planning, Inc.

- Travis Crawford, AICP, Principal Environmental Planner
- Emily Bowen, LEED AP, Principal Environmental Planner

AM Consulting Engineers

- Alfonso Manrique, PE

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- Austin Pearson
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- Jeff Gurule

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- Kate Asselin
- Randy Baloian

Appendix A

CalEEMOD Output Files

Huron Water Recycling Project

San Joaquin Valley Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	200.00	Acre	200.00	8,712,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	45
Climate Zone	3			**Operational Year**	2017
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - The project includes converting 200 acres of undisturbed land to irrigated alfalfa fields.

Construction Phase - site preperation is estimated to take three months and grading is estimated to take three months. There is no demolition or buildding of structures as a part of this project.

Consumer Products - there will be no consumer products on site.

Area Coating - There wll be no need for architectural coatings

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_Nonresidential_Exterior	4356000	0
tblAreaCoating	Area_Nonresidential_Interior	13068000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	0	150
tblConstructionPhase	NumDays	310.00	65.00
tblConstructionPhase	NumDays	120.00	65.00
tblConstructionPhase	PhaseEndDate	6/30/2017	7/1/2017
tblGrading	AcresOfGrading	162.50	775.00
tblProjectCharacteristics	OperationalYear	2014	2017
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

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	0.3602	3.9515	2.8762	3.4600e-003	1.2092	0.1974	1.4066	0.4788	0.1816	0.6604	0.0000	317.2460	317.2460	0.0939	0.0000	319.2169
Total	**0.3602**	**3.9515**	**2.8762**	**3.4600e-003**	**1.2092**	**0.1974**	**1.4066**	**0.4788**	**0.1816**	**0.6604**	**0.0000**	**317.2460**	**317.2460**	**0.0939**	**0.0000**	**319.2169**

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	0.3602	3.9515	2.8762	3.4600e-003	1.2092	0.1974	1.4066	0.4788	0.1816	0.6604	0.0000	317.2456	317.2456	0.0939	0.0000	319.2165
Total	**0.3602**	**3.9515**	**2.8762**	**3.4600e-003**	**1.2092**	**0.1974**	**1.4066**	**0.4788**	**0.1816**	**0.6604**	**0.0000**	**317.2456**	**317.2456**	**0.0939**	**0.0000**	**319.2165**

	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	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-004**	**2.0000e-005**	**1.8700e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7800e-003**

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	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Energy	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
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8000e-004**	**2.0000e-005**	**1.8700e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7800e-003**

	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	Site Preparation	Site Preparation	1/1/2017	3/31/2017	5	65	
2	Grading	Grading	4/1/2017	7/1/2017	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 775

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	Excavators	2	8.00	162	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48

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
Site Preparation	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 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					
Fugitive Dust					0.5872	0.0000	0.5872	0.3228	0.0000	0.3228	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1572	1.6820	1.2804	1.2700e-003		0.0895	0.0895		0.0824	0.0824	0.0000	118.0250	118.0250	0.0362	0.0000	118.7844
Total	**0.1572**	**1.6820**	**1.2804**	**1.2700e-003**	**0.5872**	**0.0895**	**0.6767**	**0.3228**	**0.0824**	**0.4051**	**0.0000**	**118.0250**	**118.0250**	**0.0362**	**0.0000**	**118.7844**

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	2.2300e-003	3.7000e-003	0.0354	9.0000e-005	7.2700e-003	5.0000e-005	7.3200e-003	1.9300e-003	5.0000e-005	1.9800e-003	0.0000	6.1961	6.1961	3.1000e-004	0.0000	6.2027
Total	**2.2300e-003**	**3.7000e-003**	**0.0354**	**9.0000e-005**	**7.2700e-003**	**5.0000e-005**	**7.3200e-003**	**1.9300e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**6.1961**	**6.1961**	**3.1000e-004**	**0.0000**	**6.2027**

3.2 Site Preparation - 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					
Fugitive Dust					0.5872	0.0000	0.5872	0.3228	0.0000	0.3228	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1572	1.6820	1.2804	1.2700e-003		0.0895	0.0895		0.0824	0.0824	0.0000	118.0249	118.0249	0.0362	0.0000	118.7843
Total	**0.1572**	**1.6820**	**1.2804**	**1.2700e-003**	**0.5872**	**0.0895**	**0.6767**	**0.3228**	**0.0824**	**0.4051**	**0.0000**	**118.0249**	**118.0249**	**0.0362**	**0.0000**	**118.7843**

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	2.2300e-003	3.7000e-003	0.0354	9.0000e-005	7.2700e-003	5.0000e-005	7.3200e-003	1.9300e-003	5.0000e-005	1.9800e-003	0.0000	6.1961	6.1961	3.1000e-004	0.0000	6.2027
Total	**2.2300e-003**	**3.7000e-003**	**0.0354**	**9.0000e-005**	**7.2700e-003**	**5.0000e-005**	**7.3200e-003**	**1.9300e-003**	**5.0000e-005**	**1.9800e-003**	**0.0000**	**6.1961**	**6.1961**	**3.1000e-004**	**0.0000**	**6.2027**

3.3 Grading - 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					
Fugitive Dust					0.6067	0.0000	0.6067	0.1520	0.0000	0.1520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1982	2.2617	1.5212	2.0100e-003		0.1078	0.1078		0.0992	0.0992	0.0000	186.1402	186.1402	0.0570	0.0000	187.3379
Total	**0.1982**	**2.2617**	**1.5212**	**2.0100e-003**	**0.6067**	**0.1078**	**0.7145**	**0.1520**	**0.0992**	**0.2511**	**0.0000**	**186.1402**	**186.1402**	**0.0570**	**0.0000**	**187.3379**

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	2.4700e-003	4.1100e-003	0.0393	1.0000e-004	8.0800e-003	6.0000e-005	8.1400e-003	2.1500e-003	5.0000e-005	2.2000e-003	0.0000	6.8846	6.8846	3.5000e-004	0.0000	6.8919
Total	**2.4700e-003**	**4.1100e-003**	**0.0393**	**1.0000e-004**	**8.0800e-003**	**6.0000e-005**	**8.1400e-003**	**2.1500e-003**	**5.0000e-005**	**2.2000e-003**	**0.0000**	**6.8846**	**6.8846**	**3.5000e-004**	**0.0000**	**6.8919**

3.3 Grading - 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					
Fugitive Dust					0.6067	0.0000	0.6067	0.1520	0.0000	0.1520	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1982	2.2617	1.5212	2.0100e-003		0.1078	0.1078		0.0992	0.0992	0.0000	186.1400	186.1400	0.0570	0.0000	187.3377
Total	**0.1982**	**2.2617**	**1.5212**	**2.0100e-003**	**0.6067**	**0.1078**	**0.7145**	**0.1520**	**0.0992**	**0.2511**	**0.0000**	**186.1400**	**186.1400**	**0.0570**	**0.0000**	**187.3377**

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	2.4700e-003	4.1100e-003	0.0393	1.0000e-004	8.0800e-003	6.0000e-005	8.1400e-003	2.1500e-003	5.0000e-005	2.2000e-003	0.0000	6.8846	6.8846	3.5000e-004	0.0000	6.8919
Total	**2.4700e-003**	**4.1100e-003**	**0.0393**	**1.0000e-004**	**8.0800e-003**	**6.0000e-005**	**8.1400e-003**	**2.1500e-003**	**5.0000e-005**	**2.2000e-003**	**0.0000**	**6.8846**	**6.8846**	**3.5000e-004**	**0.0000**	**6.8919**

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	0.0000	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Non-Asphalt Surfaces	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
0.411941	0.062653	0.156059	0.175861	0.050938	0.007827	0.019365	0.102312	0.001797	0.001584	0.006425	0.000939	0.002301

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Other Non-Asphalt Surfaces	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
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**

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					
Other Non-Asphalt Surfaces	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
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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Unmitigated	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-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	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Total	**1.8000e-004**	**2.0000e-005**	**1.8700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7800e-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	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.8000e-004	2.0000e-005	1.8700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.5700e-003	3.5700e-003	1.0000e-005	0.0000	3.7800e-003
Total	**1.8000e-004**	**2.0000e-005**	**1.8700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.5700e-003**	**3.5700e-003**	**1.0000e-005**	**0.0000**	**3.7800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation