

BIOLOGICAL RESOURCES ASSESSMENT
EASTSIDE WATER TREATMENT FACILITY AND BRINELINE PROJECT
CITIES OF CHINO AND ONTARIO IN SAN BERNARDINO COUNTY, CALIFORNIA



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Submitted to:

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1.0 INTRODUCTION

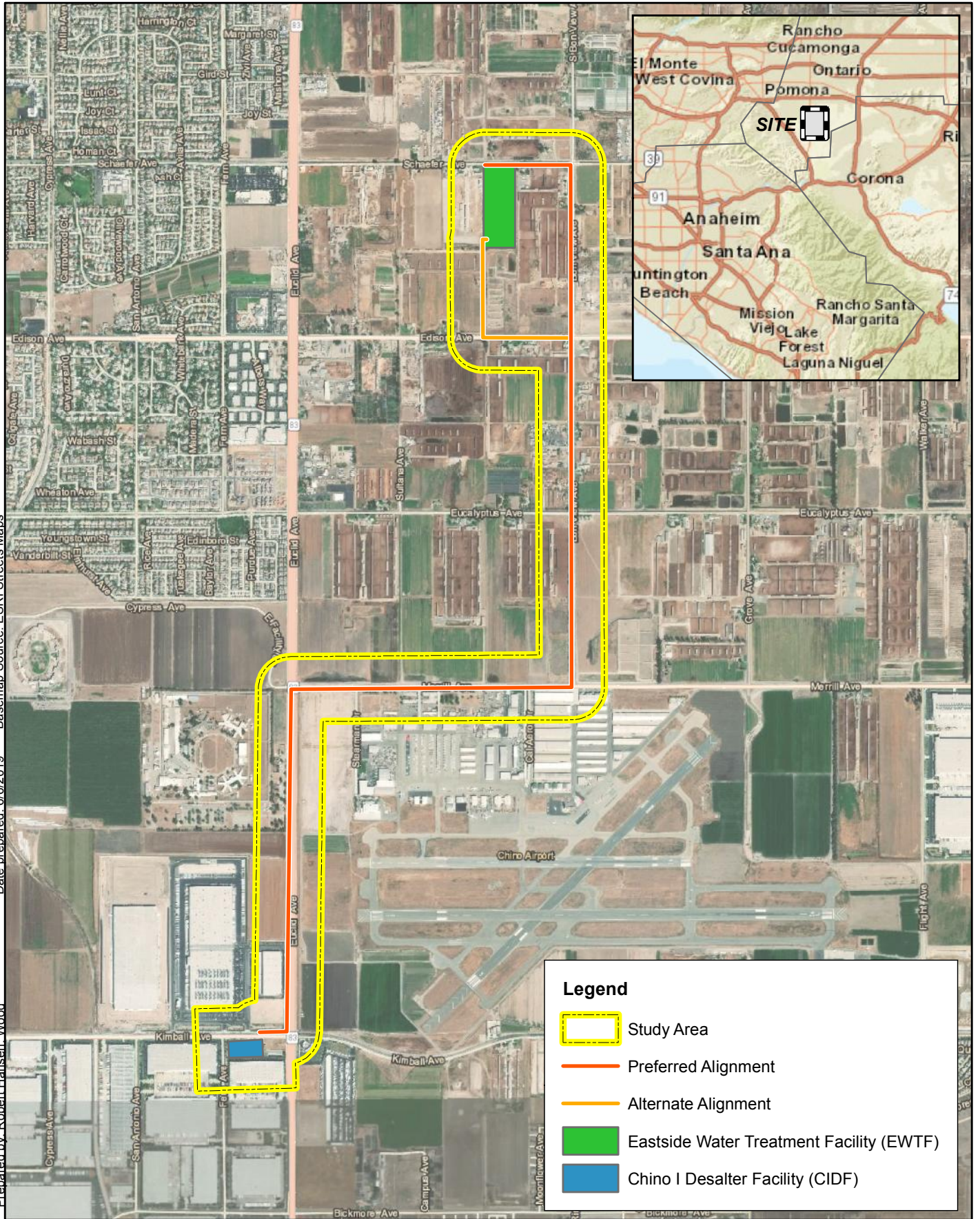
At the request of Albert A. Webb Associates (Webb), Wood Environment & Infrastructure Solutions, Inc. (Wood) conducted a biological resources assessment for the Eastside Water Treatment Facility and Brineline Project (project). Wood evaluated both the preferred and alternative alignments for the brine pipeline component. The biological study area (BSA) for this assessment included the project site plus a 500 foot buffer around it and included portions of the Cities of Chino and Ontario in San Bernardino County, California (see Figure 1).

This document is a review and assessment of the biological resources that have been reported from the vicinity of or have the potential to occur on the project site. It discusses the conservation status of special status species, suitable habitat for these species, and the potential for each to occur on or near the project site. This biological resources assessment consisted of a review of pertinent literature, consultation with biologists having experience on or in close proximity to the site, and a reconnaissance level site survey to perform a general inventory of flora and fauna and determine habitat suitability for special status flora and fauna. Additionally, focused surveys were conducted in appropriate habitat for burrowing owl (*Athene cunicularia*), least Bell's vireo (*Vireo bellii pusillus*), and tricolored blackbird (*Agelaius tricolor*); and a jurisdictional waters delineation was performed.

2.0 PROJECT BACKGROUND/SITE DESCRIPTION

The proposed project includes a four-mile dual six-inch brine pipeline between the Eastside Water Treatment Facility (EWTF) and the Chino I Desalter Facility (CIDF). The pipeline would generally follow existing roads and previously disturbed areas, utilizing a route that would follow Kimball Avenue east from the CIDF, Euclid Avenue north, Merrill Avenue east, Bon View Avenue north, and Schaefer Avenue west to the EWTF. An alternative would have one of the dual pipelines leave Bon View at Edison Avenue, heading west, then north to the EWTF on conceptual Campus Avenue, an undeveloped street. The project also includes upgrades to the EWTF, is on the south side of Schaefer Avenue, west of Bon View Avenue in Ontario. The CIDF is located on the south side of Kimball Avenue, west of Euclid Avenue in Chino. The EWTF is on the south side of Schaefer Avenue, west of Bon View Avenue in Ontario. (See Figure 1.)

Project elevations range from approximately 590 feet (180 meters) at the CIDF to 755 feet (230 meters) at the EWTF. Despite the elevational change, the slope is gentle with the project area appearing flat. The alignment passes through a wide variety of conditions, from undeveloped to agriculture and vacant lots and from residential to commercial and industrial areas, but is dominated by dairy farms. The project crosses areas mapped on two different United States Geologic Service (USGS) 7.5-minute topographic quadrangle maps (see Figure 2): Prado Dam and Ontario, CA.



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Feet
1 inch = 2,000 feet



Regional and Vicinity Map

Eastside Water Treatment Facility and Brineline Project

FIGURE

1

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3.0 REGULATORY FRAMEWORK

3.1 Federal

Endangered Species Act (ESA) – The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA. ESA defines species as “endangered” or “threatened” and provides regulatory protection at the federal level.

- Section 9 of the ESA prohibits the “take” of listed (i.e., endangered or threatened) species. The ESA definition of take is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.” Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a) (1) (A) permits (authorized take permits) are issued for scientific purposes. Section 10(a) (1) (B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species.
- Section 7 (a) (2) requires federal agencies to evaluate the proposed project with respect to listed or proposed listed, species and their respective critical habitat (if applicable). Federal agencies must employ programs for the conservation of listed species and are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its “critical habitat.”

As defined by the ESA, “individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding.

Migratory Bird Treaty Act (MBTA) – Treaties signed by the U.S., Great Britain, Mexico, Japan, and the republics of the former Soviet Union make it unlawful to pursue, capture, kill, and/or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg or parts thereof listed in this document. As with the ESA, the MBTA also allows the Secretary of the Interior to grant permits for the incidental take of these protected migratory bird species. Impacts include direct disturbance to/destruction of nests, eggs, and birds as well as indirect effects such as loud construction noises (e.g., drilling, operation of heavy equipment, etc. in excess of 60 dB over an hours at the nest site) and increased site activities (e.g., moving vehicles, use of guard dogs, presence of personnel) in close proximity to active nests.

National Environmental Policy Act (NEPA) – Portions of the proposed project could fall under the jurisdiction of a federal agency (i.e., U.S. Army Corps of Engineers). NEPA establishes certain criteria that must be adhered to for any project that is “financed, assisted, conducted or approved by a federal agency. The federal lead agency is required to “determine whether the proposed action will significantly affect the quality of the human environment.”

Section 404 of the Clean Water Act – This section of the Clean Water Act, administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material into “waters of the United States.” The USACE has created a series of nationwide permits that authorize certain activities within waters of the U.S. provided that the proposed activity does not exceed the impact threshold for each of the permits, takes steps to avoid impacts to wetlands where practicable, minimize potential impacts to wetlands, and provide compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued.

3.2 State of California

Regional Water Quality Control Board – The Regional Water Quality Control Board (RWQCB) regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as “surface water or ground water, including saline waters, within the boundaries of the state”.

Sections 1600-1603 of the State Fish and Game Code – The California Fish and Game Code, pursuant to Sections 1600 through 1603, regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, a stream is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel with hydro geomorphology distinct top-of-embankment to top-of-embankment limits, that may or may not support fish or other aquatic biota. Included in this definition are watercourses with surface or subsurface flows that support, or have supported in the past, riparian vegetation. Specifically, Section 1601 governs public projects, while Section 1603 governs private discretionary actions. The California Department of Fish and Wildlife (CDFW) requires that public and private interests apply for a “Streambed Alteration Agreement” for any project that may impact a streambed or wetland. The CDFW has maintained a “no net loss” policy regarding impacts to streams and waterways and requires replacement of lost habitats of at least a 1:1 ratio.

California Endangered Species Act (CESA) – This legislation is similar to the federal ESA, however it is administered by the CDFW. The CDFW is authorized to enter into “memoranda of understanding” with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. The CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the federal ESA, the CESA applies the take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with the CDFW to

ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

Section 2081 of the State Fish and Game Code – Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW shall make this determination based on the best scientific information available and shall include consideration of the species’ capability to survive and reproduce.

California Environmental Quality Act (CEQA) – The basic goal of the California Environmental Quality Act (CEQA) is to retain a high-quality environment now and in the future. The specific goals are for California's public agencies to:

- Identify the significant environmental effects of their actions; and, either
- Avoid those significant environmental effects, where feasible; or
- Mitigate those significant environmental effects, where feasible.

CEQA applies to "projects" proposed to be undertaken or requiring approval by State and/or local governmental agencies. Projects are activities which have the potential to have a physical impact on the environment and may include the enactment of zoning ordinances, the issuance of conditional use permits and the approval of tentative subdivision maps. Where a project requires approvals from more than one public agency, the CEQA requires one of these public agencies to serve as the "lead agency."

A "lead agency" must complete the environmental review process required by the CEQA. The most basic steps of the environmental review process are:

- Determine if the activity is a "project" subject to the CEQA;
- Determine if the "project" is exempt from the CEQA;
- Perform an Initial Study to identify the environmental impacts of the project and determine whether the identified impacts are "significant". Based on its findings of "significance", the lead agency prepares one of the following environmental review documents:
 - Negative Declaration if it finds no "significant" impacts;
 - Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;
 - Environmental Impact Report (EIR) if it finds "significant" impacts.

While there is no ironclad definition of "significance", Article 5 of the State CEQA Guidelines provides criteria to lead agencies in determining whether a project may have significant effects.

The purpose of an EIR is to provide state and local agencies and the general public with detailed information on the potentially significant environmental effects which a proposed project is likely to have and to provide ways in which those effects may be minimized and indicate alternatives to the project.

Sections of the State Fish and Game Code pertaining to the protection of birds – Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

The Native Plant Protection Act (NPPA) – The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for “rare and endangered” are different from those contained in the CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under the CESA. The NPPA provides limitations on take as follows: “no person will import into this state, or take, possess, or sell within this state” any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by the CDFW, pursuant to section 1903.5 that a rare or endangered plant species is growing on their property, the landowner shall notify the CDFW at least 10 days prior to the changing of land uses to allow the CDFW to salvage the plants.

Natural Community Conservation Planning (NCCP) Program – The NCCP, which is managed by the CDFW, is intended to conserve multiple species and their associated habitats, while also providing for compatible use of private lands. Through local planning, the NCCP planning process is designed to provide protection for wildlife and natural habitats before the environment becomes so fragmented or degraded by development and other factors that species listing are required under the CESA. Instead of conserving small, often isolated “islands” of habitat for just one listed species, agencies, local jurisdictions, and/or other interested parties have an opportunity through the NCCP to work cooperatively to develop plans that consider broad areas of land for conservation that would provide habitat for many species. Partners enroll in the programs and, by mutual consent, areas considered to have high conservation priorities or values are set aside and protected from development. Partners may also agree to study, monitor, and develop management plans for these high value “reserve” areas. The NCCP provides an avenue for fostering economic growth by allowing approved development in areas with lower conservation value.

3.3 San Bernardino County

The San Bernardino County general plan states that the county shall encourage use of conservation practices in the management of grading, replacement of ground cover, protection of soils, natural drainage, and the protection and replacement of trees. It establishes 50-100 foot riparian setbacks that prohibit removal of mature natural vegetation. The County plant protection ordinance prohibits removal of vegetation within 200' of a stream without a tree permit and environmental review with mitigations imposed. It also prohibits changes in grade that undercut roots (University of California 2017).

3.4 Cities

The cities crossed by the BSA also have tree protection plans.

The Chino Code of Ordinances 19.06.050 states that "No tree protected by Chapter 12.16 of the Chino Municipal Code shall be removed, unless it is replaced under the provisions of that chapter." Chapter 12.16 states that "This chapter is intended to and does give full advisory authority to the service department (of the City of Chino) over any and all trees, plants and shrubs now planted and growing or hereafter to be planted and grown upon any and all of the public streets and planting strips in the city subject to final approval of the director of public works and the city council" (City of Chino 2019).

The City of Ontario's Municipal Code Volume II states in Section 10 that "No person shall cut, carve, mutilate, or otherwise do harm to any tree in any park, parkway, or public place, or prune or top such trees except as provided in this chapter, or to apply or allow to exist upon any parkway or tree any substance harmful to such trees" and that "No person shall remove or relocate any parkway tree without prior authorization from the Public Works Agency of the City."

4.0 METHODS

4.1 Literature Review

Prior to the field visit, a literature review was conducted of the environmental and regulatory setting for the BSA. The literature review provides a baseline from which to evaluate the biological resources potentially occurring within the BSA, and within the local and regional vicinity.

A literature review was conducted to identify biological resources known from the vicinity (within an approximate 5-mile radius) of the BSA. The BSA consists of the project site plus a 500 foot buffer around it. This included review of literature and searches of the CDFW's California Natural Diversity Data Base (CNDDDB) (CDFW 2019a), the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2019), Soil Survey data (USDA 2019), vegetation mapping (USDA 2014), National Wetlands Inventory (USFWS 2017a), the Critical Habitat portal (USFWS 2019b), and pertinent documents from the Wood library and project files. A complete list of literature and references is included in Section 8.

4.2 Biological Resources and Habitat Assessment

The field reconnaissance survey of the pipeline alignment BSA was conducted on 29 March 2019 by Wood senior biologist John F. Green. Access to the alternative route between the EWTF and conceptual Campus Avenue was not granted at that time, so that area was assessed by binocular only. On July 15th, access was granted to the alternative for a single burrowing owl survey. The CIDF is fully developed, so was assessed from outside and through examination of aerial photography. Access to the EWTF was first obtained on 11 April and it was assessed by Wood biologists Dale Hameister and Carla Sanchez. The tricolored blackbird focused survey was conducted on 11 April 2019 by Hameister and Sanchez in accordance with the Statewide Survey Protocol (Meese 2017). The areas surveyed were those which contained suitable tricolored blackbird nesting habitat in spring 2019 as shown on Figure 5-1. Burrowing owl focused surveys in accordance with CDFG (2012) were conducted on 11 April, 3 May, 24 May, 24 June, and 15 July 2019 by Hameister, Sanchez, and Green (Wood 2019a, Appendix D). Eight focused survey visits for the least Bell's vireo were conducted by Green between 14 May and 29 July 2019 in accordance with the USFWS (2001) protocol (Wood 2019b, Appendix E). The pipeline alignment was surveyed by vehicle with frequent stops for photographs and assessment. The EWTF survey was done on foot. All flora and fauna detected (e.g., through direct observation, vocalizations, presence of scat, tracks, and/or bones) on the project site during the course of the survey were recorded in field notes and are included in Appendix A. Plant species of uncertain identity were collected and identified in the Wood office or by Andrew Sanders of the University of California, Riverside Herbarium. Representative photographs of the project site are included in Appendix B.

4.3 Jurisdictional Waters and Wetlands

Aerial photography was reviewed prior to conducting general surveys (2019 imagery). The photographs were also used to locate and inspect any potential natural drainage features and water bodies that may be considered under the jurisdiction of either the USACE, RWQCB, CDFW and/or MHSCP. The jurisdictional delineation (JD) was performed by Hameister on 16 April 2019 to determine presence or absence of potential jurisdictional wetlands and waters. For a more detailed description of the methods used for identifying jurisdictional waters and wetlands, please refer to the Delineation of Jurisdictional Waters (Wood 2019c, Appendix F).

4.4 Wildlife Corridors

The ability of the BSA to act as a wildlife corridor was assessed. Wildlife corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Corridors mitigate the effects of habitat fragmentation by (1) allowing animals to move between remaining habitats. Wildlife movement usually fall into one of three categories: (1) dispersal (e.g., juvenile animals from natal areas, individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover).

5.0 RESULTS

The literature review and field surveys revealed the following information about critical habitat, wetlands, the MSHCP, soils, vegetation, and special status species in the BSA.

5.1 Critical Habitat

No federally designated critical habitat is present in the BSA.

5.2 Soils

The BSA contains five different soil mapping units (see Figure 3):

- Chino Silt Loam
- Grangeville Fine Sandy Loam
- Hilmar Loamy Fine Sand
- Merrill Silt Loam
- Tujunga Loamy Sand, 0 - 5 % Slopes

None of these soils are known to be specifically associated with special status plant species, wildlife species, or vernal pools.

5.3 Wetlands and Jurisdictional Drainages

Two areas were identified as potential federal and/or state jurisdictional waters (see Figure 4 and Appendix F). These include a roadside ditch and a separate ditch leading to a bermed pond.

5.4 Vegetation Communities

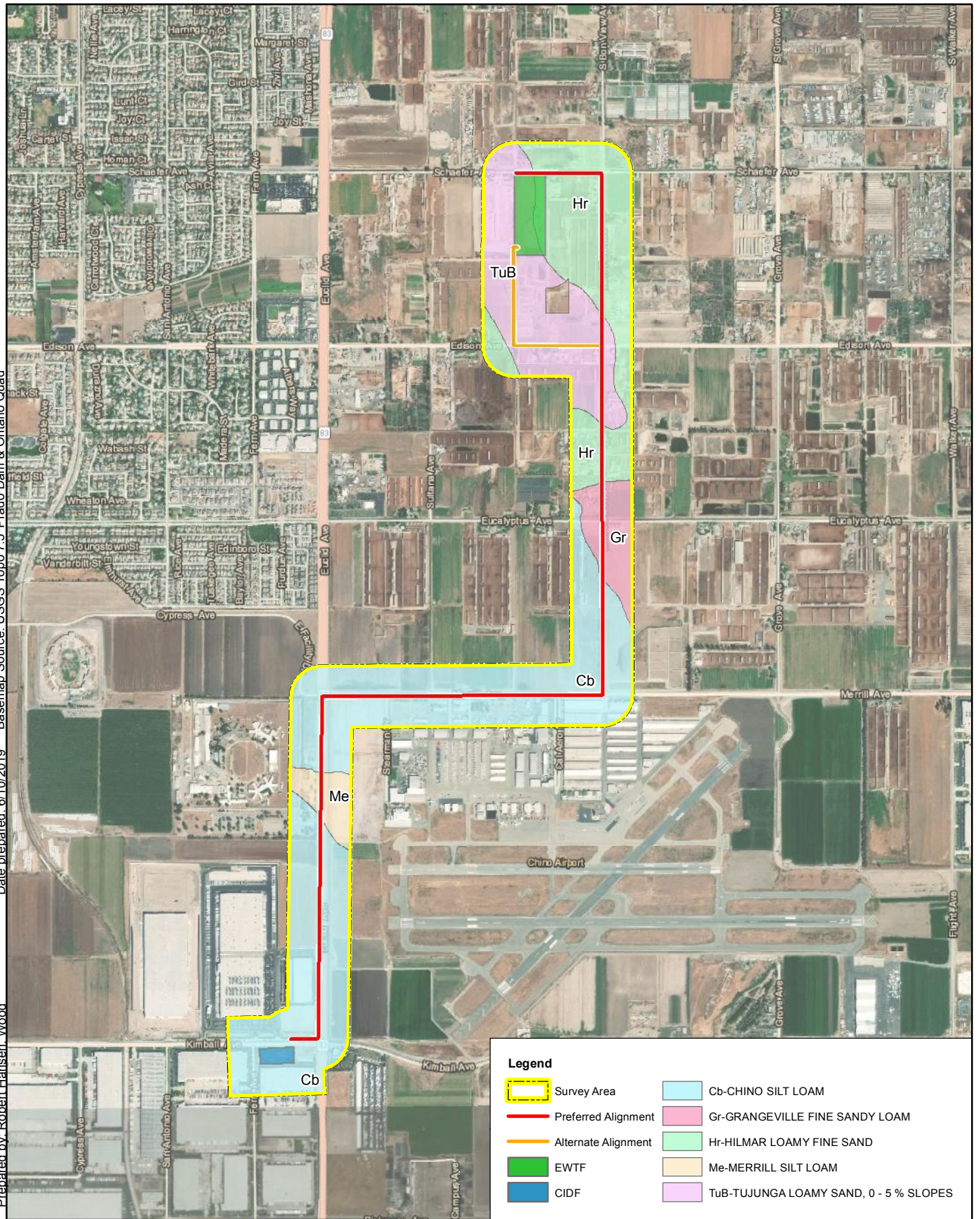
No naturally occurring vegetation communities are present in the BSA. The three categories below were used to describe land cover (see Figure 5):

5.4.1 Agricultural Lands

This category represents pasture, dairies, field croplands, etc., both active and fallow.

5.4.2 Developed/Disturbed Land

This category represents areas that have been disked, cleared, or otherwise altered and include roadways, existing buildings, and other structures. Disturbed lands may include ornamental plantings for landscaping, escaped exotics, or ruderal vegetation dominated by non-native, weedy species.



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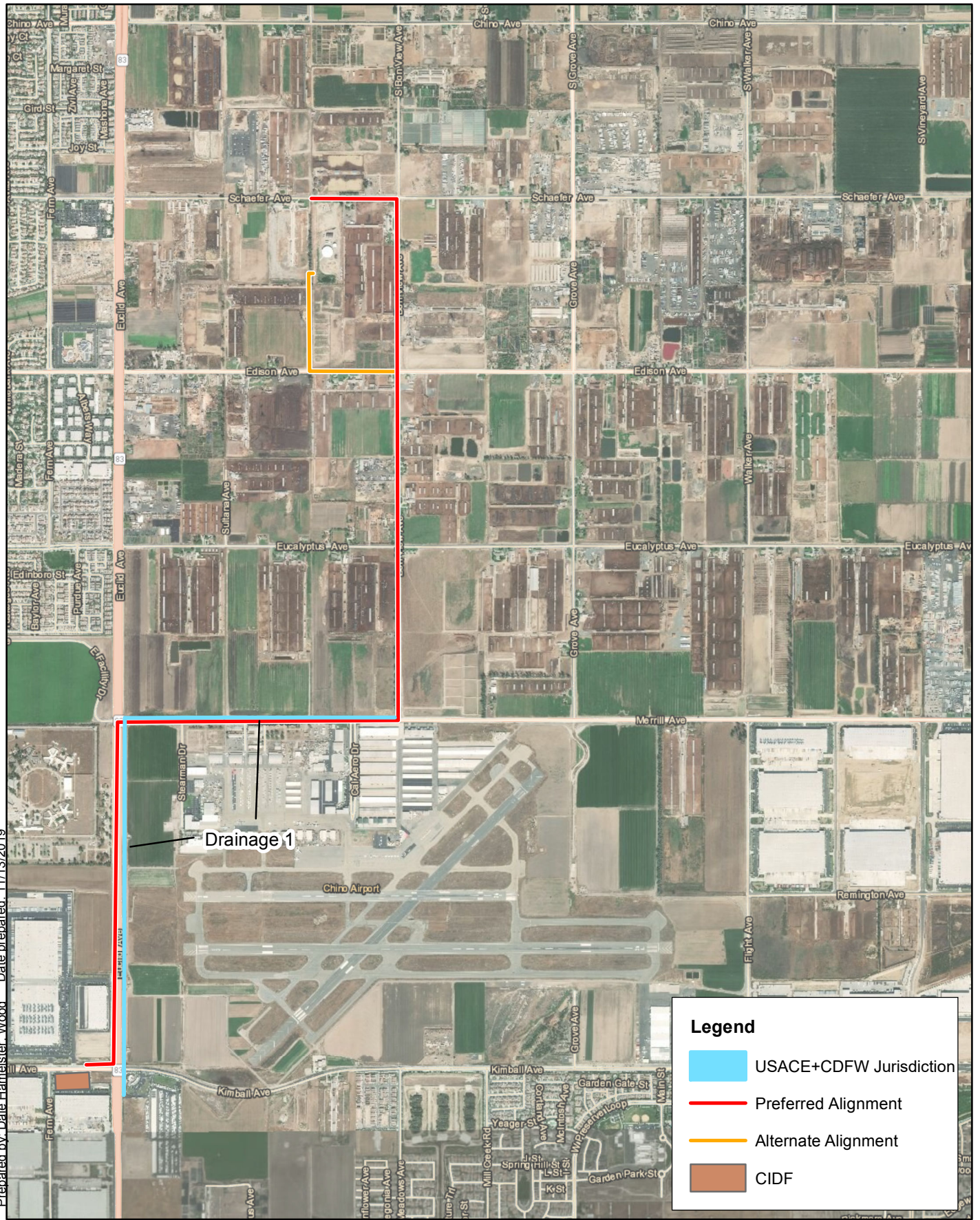
Soil Map

Eastside Water Treatment Facility and Brineline Project

FIGURE

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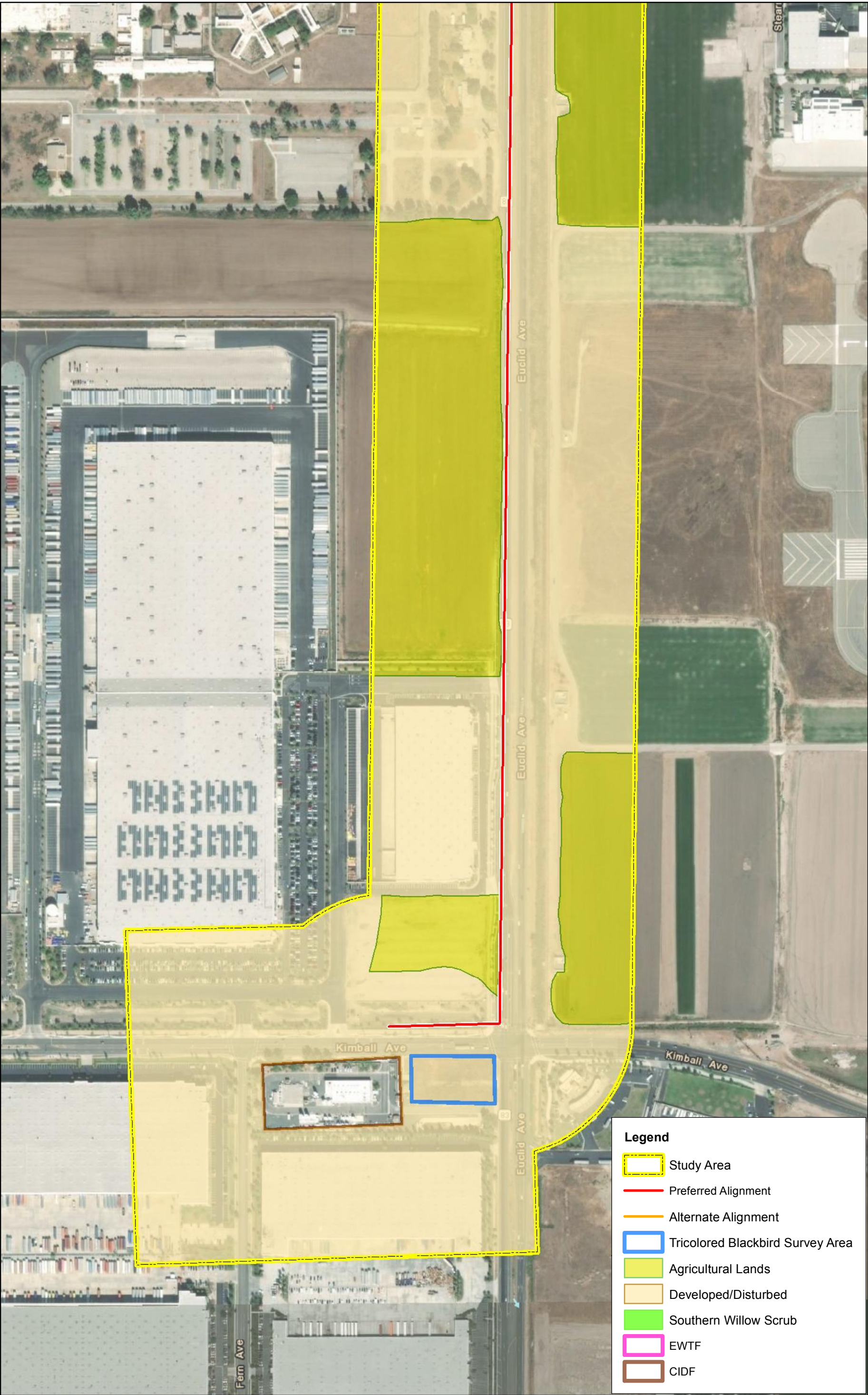


Jurisdictional Delineation Map
Eastside Water Treatment Facility and Brineline Project

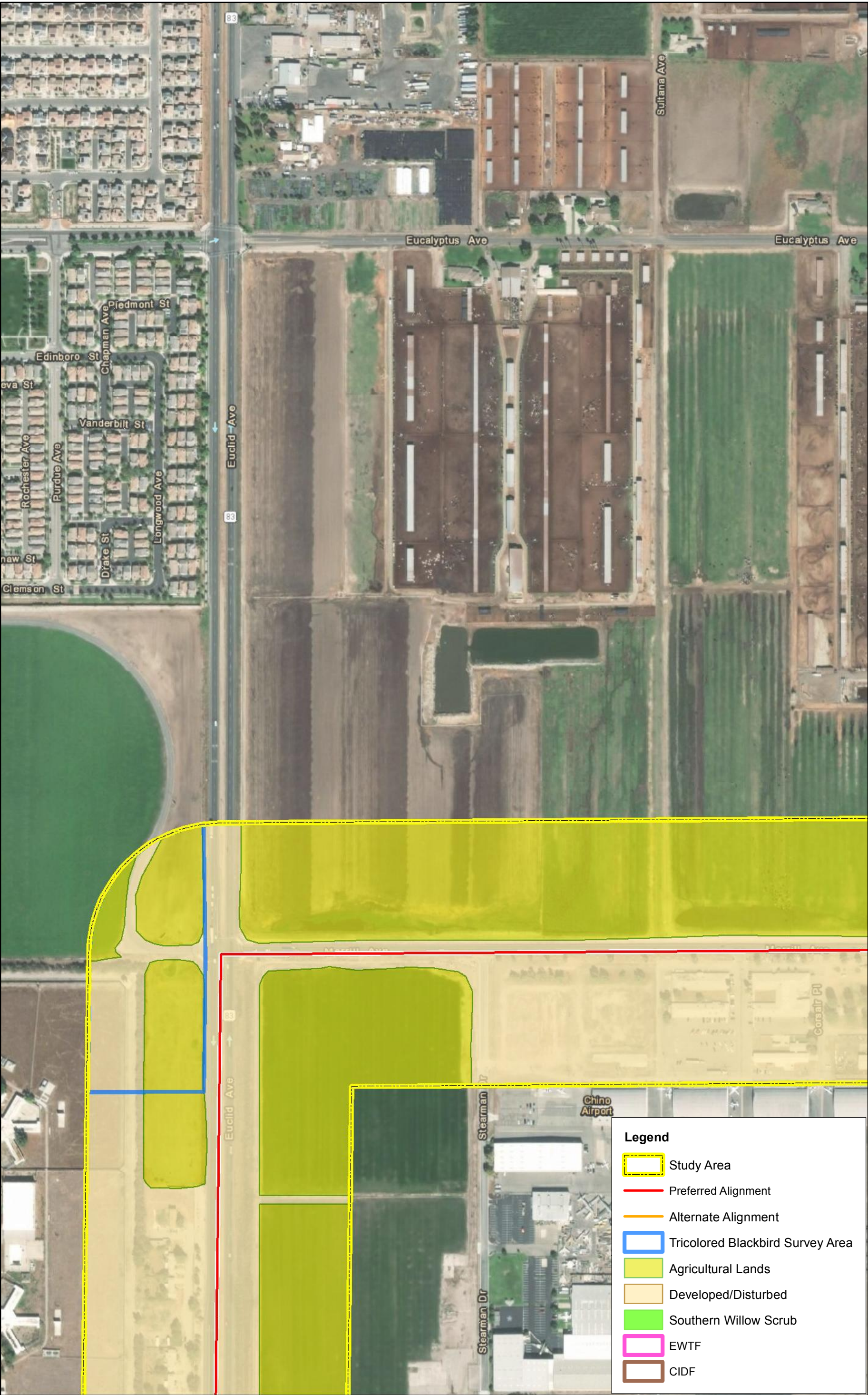
FIGURE

4

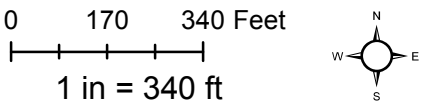
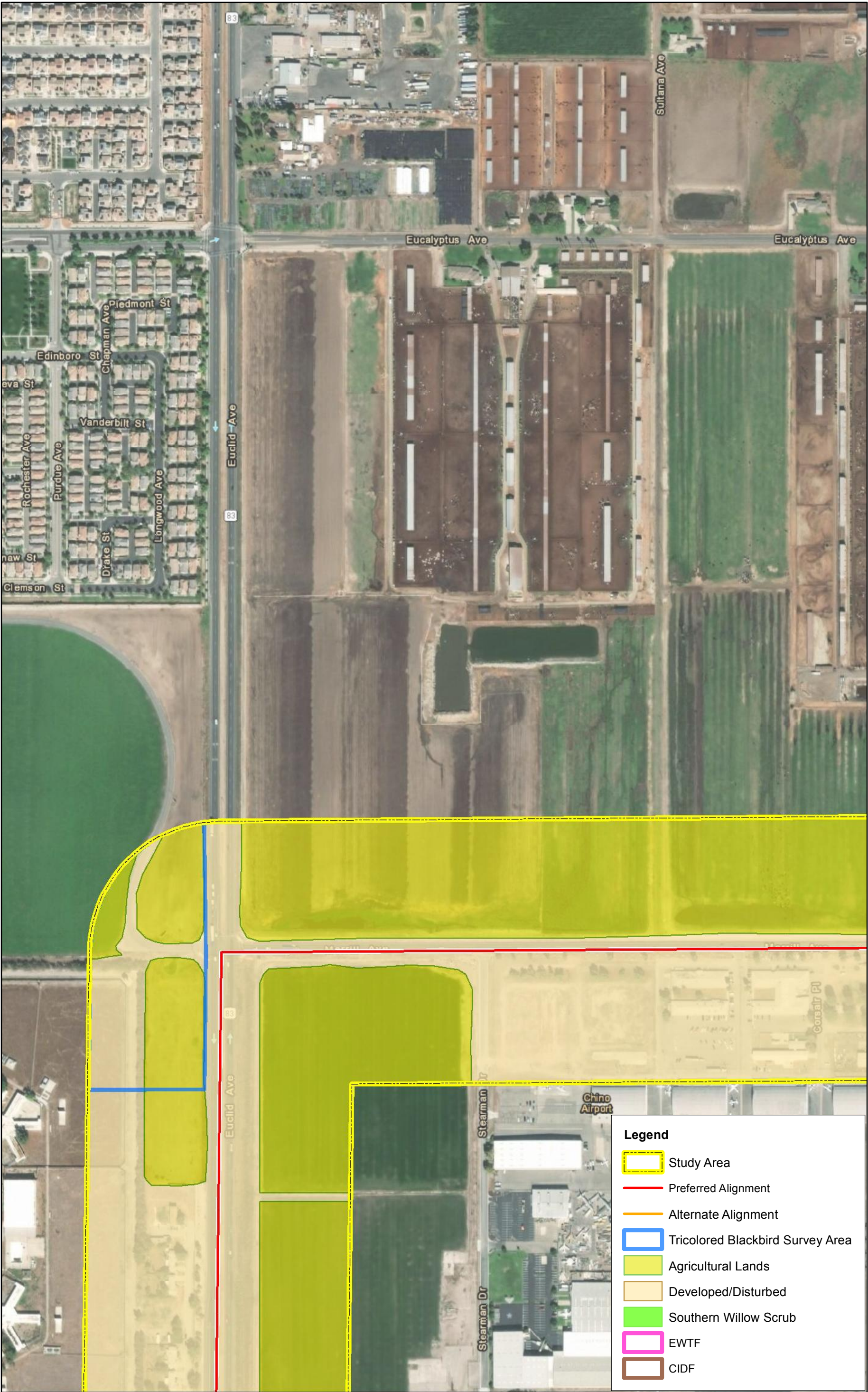
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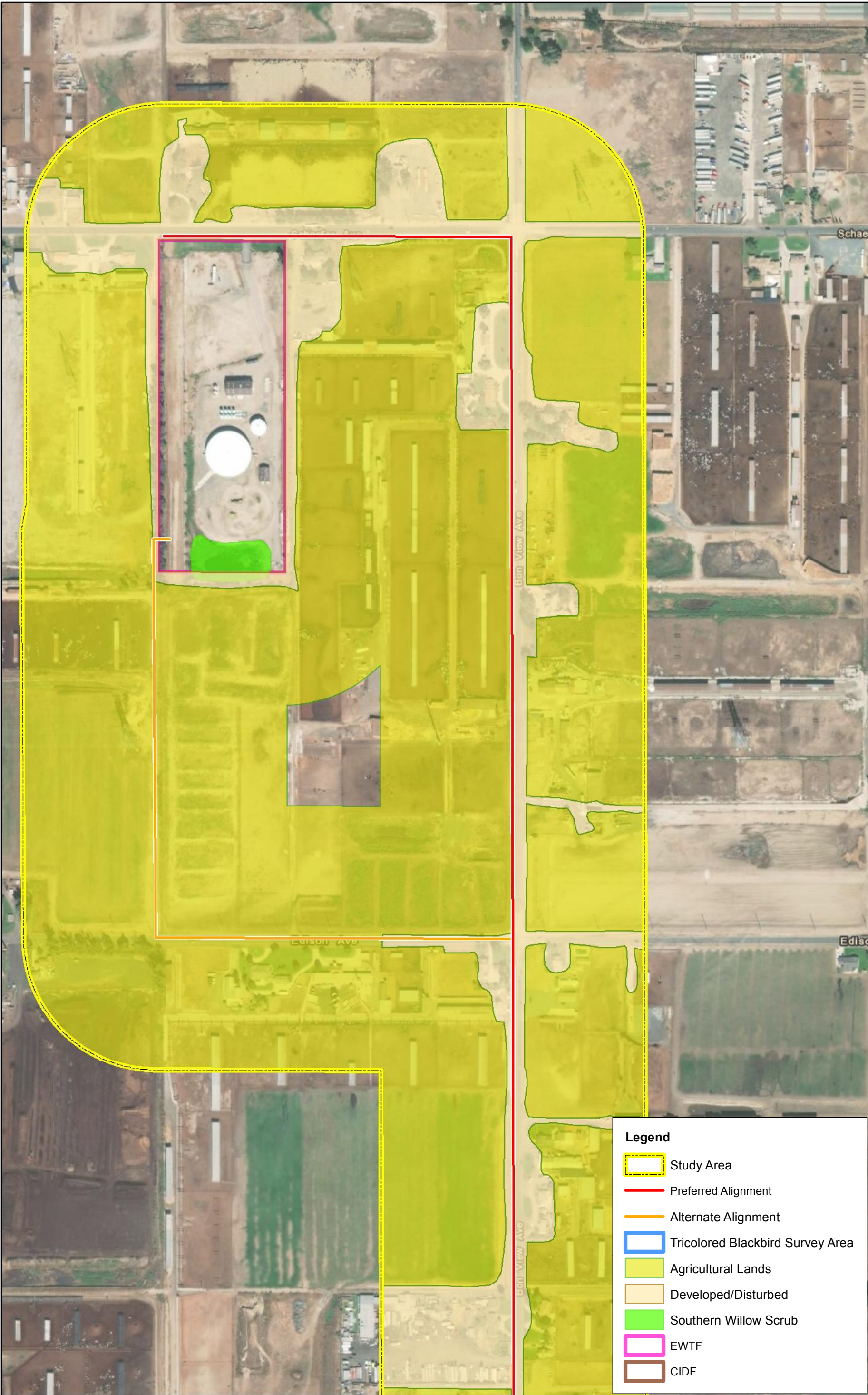
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Vegetation and Tricolored Blackbird Survey Map
 Eastside Water Treatment Facility and Brineline Project

FIGURE
5-2

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5.4.3 Southern Willow Scrub

Within the BSA, but outside any impact areas of the project, this category includes only a stand of willows and a few other riparian associated plant species that have grown around an unmaintained basin within the EWTF. These common species include red willow (*Salix laevegata*), California bulrush (*Schoenoplectus californicus*), and cocklebur (*Xanthium* sp.). Although this is a community that occurs in nature, in this case it is present only because of the constructed basin. The basin and southern willow scrub area are not within area to potentially be impacted by the project, but are included here because they are within 500 feet of the pipeline area and could potentially support sensitive nesting bird species.

5.5 Plants and Wildlife

Species encountered during field visits in the BSA included a mix of native and non-native (introduced) species common to inland southern California and occurring in a wide variety of habitats. A complete list of the flora and fauna observed during the field visits is included in Appendix A.

Plant species observed in the BSA were dominated by non-native weedy species. These included, but were not limited to: London rocket (*Sisymbrium irio*), Russian thistle (*Salsola tragus*), redstem filaree (*Erodium cicutarium*), ripgut grass (*Bromus diandrus*). A few natives were present, including horseweed (*Erigeron canadensis*), toad rush (*Juncus bufonius*), and red willow.

Representative vertebrate species observed in the BSA included, but were not limited to: western fence lizard (*Sceloporus occidentalis*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), Eurasian collared-dove (*Streptopelia decaocto*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), red-winged blackbird (*Agelaius phoeniceus*), Audubon's cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Otospermophilus beecheyi*).

5.6 Special Status Biological Resources

Plant or animal taxa may be designated as having "special status" by the various regulatory agencies (i.e., CDFW) and/or other conservation organizations (i.e., CNPS) due to declining populations, vulnerability to habitat change or loss, or because of restricted/limited distributions. Some species have been listed as "threatened" or "endangered" and/or a candidate for listing by the USFWS and/or the CDFW, and are thus protected by the federal and state Endangered Species Acts respectively. In addition to plants and animals, some vegetation communities have also received special status designation by the CNPS due to incremental loss and fragmentation resulting from development. Impacts to any special status biological resources can be considered significant under CEQA.

The literature review of the CNDDDB, CNPS Inventory, and other biological reports identified a total of 47 special status biological resources known from the vicinity of the project site. These include 22 plants, four vegetation communities, one fish, two reptiles, 16 birds, and two mammals. See Tables 1 through 3 for a complete list of these sensitive biological resources, their conservation status, habitat associations and their occurrence potential.

5.6.1 Focused Surveys

Focused surveys were conducted for three potentially occurring special status bird species: tricolored blackbird (not detected, see Appendix C and Figure 5-1); burrowing owl (detected, see Appendix D); and least Bell's vireo (not detected, see Appendix E).

5.6.2 Special Status Plant Species

Of the 22 special status plant species known from the general project area, all but two, the San Bernardino aster (*Symphyotrichum defoliatum*) and Southern California black walnut (*Juglans californica*) are assumed to be absent due to lack of suitable habitat. Neither is state or federally listed as threatened or endangered. The status of each species is in Table 1 below.

Table 1. Special Status Plant Species Potential for Occurrence

Species	Status (F=Federal, C=California)	Habitat	Flowering Period	BSA Occurrence Probability
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand- verbena	F: BLM, FS C: S2 CNPS: 1B.1	In sandy areas in chaparral, coastal dunes and desert dunes; 75 - 1,600 meters (elevation).	(January) March - September	Absent No suitable habitat.
<i>Atriplex coulteri</i> Coulter's saltbush	F: ND C: S1S2 CNPS: 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Ocean bluffs, ridgetops, as well as alkaline low places. Alkaline or clay soils; 3-460 meters.	March - October	Absent No suitable habitat.
<i>Berberis nevini</i> Nevin's barberry	F: END S: END , S1 CNPS: 1B.1	On steep, north facing slopes or in low grade sandy washes in chaparral, cismontane woodland, coastal scrub, and riparian scrub; 70-1575 meters.	(February) March – June	Absent No suitable habitat.
<i>Calochortus catalinae</i> Catalina mariposa lily	F: ND C: S3S4 CNPS: 4.2	Chaparral, cismontane woodland, coastal scrub, and valley & foothill grassland; 15 - 700 meters	(February) March – June	Absent No suitable habitat.
<i>Calochortus plummerae</i> Plummer's mariposa lily	F: ND C: S4 CNPS: 4.2	Cismontane woodlands, chaparral, coastal scrub, grasslands, lower montane coniferous forest; 100 - 1,700 meters.	May - July	Absent No suitable habitat.
<i>Calochortus weedii</i> var. <i>intermedius</i> Intermediate mariposa lily	F: USFS C: S2 CNPS: 1B.2	Coastal scrub, chaparral, valley and foothill grassland. Dry, rocky calcareous slopes and rock outcrops; 60-1575 meters.	May - July	Absent No suitable habitat.
<i>Calystegia felix</i> Lucky morning-glory	F: ND C: S1 CNPS: 1B.1	Meadows and seeps, riparian scrub. Sometimes alkaline, alluvial; 9-215 meters.	March - September	Absent No suitable habitat.
<i>Centromadia pungens</i> ssp. <i>laevis</i> smooth tarplant	F: ND C: S2 CNPS: 1B.1	Annual herb found in alkaline areas within chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland; 0-640 meters.	April - November	Absent No suitable habitat.
<i>Cladium californicum</i> California saw-grass	F: FS C: S2 CNPS: 2B.2	Meadows and seeps, marshes and swamps (alkaline or freshwater). Freshwater or alkaline moist habitats; 20-2135 meters	June - September	Absent No suitable habitat.
<i>Deinandra paniculata</i> paniculate tarplant	F: ND C: S4 CNPS: 4.2	Coastal scrub, valley and foothill grassland, vernal pools; 25 - 940 meters.	(March) April - November	Absent No suitable habitat.

Species	Status (F=Federal, C=California)	Habitat	Flowering Period	BSA Occurrence Probability
<i>Dodecahema leptoceras</i> slender-horned spineflower	F: END S: END , S1 CNPS: 1B.1	Sandy soils in association with mature alluvial scrub or in the Vail Lake area gravel soils of Temecula arkose deposits in association with open chamise chaparral. The ideal habitat appears to be terraces and benches that receive over-bank deposits every 50-100 years; 200 - 760 meters.	April – June	Absent No suitable habitat.
<i>Dudleya multicaulis</i> many-stemmed dudleya	F: BLM, FS C: END , S2 CNPS: 1B.2	Chaparral, coastal scrub, valley and foothill grassland. In heavy, often clayey soils or grassy slopes; 1-910 meters.	April - July	Absent No suitable habitat.
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River woollystar	F: END S: END , S1 CNPS: 1B.1	Sandy soils of floodplains and terraced fluvial deposits of the Santa Ana River and larger tributaries; 91 - 625 meters.	June – September	Absent No suitable habitat.
<i>Horkelia cuneata</i> var. <i>puberula</i> mesa horkelia	F: FS C: S1 CNPS: 1B.1	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub; 70 - 825 meters.	February – September	Absent No suitable habitat.
<i>Juglans californica</i> Southern California black walnut	F: ND C: S3 CNPS: 4.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland; 50 - 900 meters.	March - August	Low No natural habitat. If present, would have been planted or preserved as a farm or residential shade tree.
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper- grass	F: ND C: S3 CNPS: 4.3	Dry soils in coastal sage scrub and chaparral; 1-885 meters.	January - July	Absent No suitable habitat.
<i>Muhlenbergia californica</i> California muhly	F: ND C: S4 CNPS: 4.3	Coastal scrub, chaparral, lower montane coniferous, forest, meadows and seeps. Usually found near streams or seeps; 100-2000 meters.	June - September	Absent No suitable habitat.
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	F: ND C: S2 CNPS: 1B.1	Coastal scrub, valley and foothill grassland, vernal pools, meadows and seeps. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites; 3-1235 meters.	April - July	Absent No suitable habitat.
<i>Phacelia stellaris</i> Brand's star phacelia	F: ND C: S1 CNPS: 1B.1	Coastal scrub, coastal dunes. Open areas; 1-400 meters.	March – June	Absent No suitable habitat.
<i>Pseudognaphalium leucocephalum</i> white rabbit-tobacco	F: ND C: S2 CNPS: 2B.2	Riparian woodland, cismontane woodland, coastal scrub, chaparral. Sandy, gravelly sites; 0-2100 meters.	July - December	Absent No suitable habitat.

Species	Status (F=Federal, C=California)	Habitat	Flowering Period	BSA Occurrence Probability
<i>Sidalcea neomexicana</i> salt spring checkerbloom	F: FS S: S2 CNPS: 2B.2	Alkaline springs and marshes; 15 - 1,530 meters.	March – June	Absent No suitable habitat.
<i>Symphyotrichum defoliatum</i> San Bernardino aster	F: BLM, FS C: S2 CNPS: 1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas; 2 - 2,045 meters.	July - November	Low Very small possibility that this species could occur in ditches, but record is from 1918 in an area now developed.

KEY TO TABLE 1

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High: Observed in similar habitat in region by qualified biologists, or habitat on the site is a type often utilized by the species and the site is within the known range of the species.

Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.

Low: Site is within the known range of the species but habitat on the site is rarely occupied by the species.

Absent: A focused study failed to detect the species, or, no suitable habitat is present.

Unknown: Distribution and habitat use has not been clearly determined.

Federal designations: (F = federal Endangered Species Act or federal agency designations)

END: Federally listed, Endangered

THR: Federally listed, Threatened

CAN: Candidate for Federal listing

BLM = Bureau of Land Management Sensitive

FS: U.S. Forest Service (USFS) sensitive

ND: No designation

State designations: (C = California Endangered Species Act or CDFG designations)

END: State listed, Endangered

THR: State listed, Threatened

CAN: Candidate for State listing

RARE: State listed, Rare

FP: Fully Protected Species

SSC: Species of Special Concern

WL: Watch List Species

ND: No designation

CDFW state rankings are a reflection of the overall condition of an element throughout its California range. The number after the decimal point represents a threat designation attached to the rank:

S1 = Critically Imperiled. Less than (<) 6 Element Occurrences (EOs) OR < 1,000 individuals OR < 2,000 acres

S1.1 = very threatened

S1.2 = threatened

S1.3 = no current threats known

S2 = Imperiled. 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres

S2.1 = very threatened

S2.2 = threatened

S2.3 = no current threats known

S3 = Vulnerable. 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres

S3.1 = very threatened

S3.2 = threatened

S3.3 = no current threats known

S4 = Apparently Secure. Uncommon but not rare in the state; some cause for long-term concern.
 S5 = Secure. Common, widespread, and abundant in the state.
 SH = All known California sites are historical, not extant

California Native Plant Society (CNPS) designations (Rare Plant Ranks):

Primary Categories (Lists)

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

Subdivisions within Categories (threat ranks)

- 0.1: Seriously threatened in California
- 0.2: Moderately threatened in California
- 0.3: Not very threatened in California

According to the CDFW (Special Plants): "all California Rare Plant Rank 1 and 2 and some Rank 3 and 4 plants may fall under Section 15380 of CEQA."

5.6.3 Special Status Vegetation Communities

None of the four special status vegetation communities known from the general project area are present. Vegetation communities are not state or federally listed as threatened or endangered.

Table 2. Special Status Vegetation Communities Potential for Occurrence

Community	Status (F=Federal, C=California)	Habitat	BSA Occurrence Probability
California Walnut Woodland	F: ND C: S2.1	California walnut woodland may be monospecific or mixed. Coast live oak (<i>Quercus agrifolia</i>) frequently codominates. Stands sometimes occur in chaparral and occasionally in coastal sage scrub.	Absent
Southern California Arroyo Chub / Santa Ana Sucker Stream	F: ND C: ND	Waterways known to support or to have previously supported one or both of these fish species.	Absent
Southern Cottonwood Willow Riparian Forest	F: ND C: S3.2	Riparian forest community dominated by Fremont cottonwood and any of several species of willow trees that are generally greater than 20 feet high.	Absent
Southern Sycamore Alder Riparian Woodland	F: ND C: S4	A tall, open, woodland dominated by western sycamore and often white alder (<i>Alnus rhombifolia</i>).	Absent

KEY TO TABLE 2

Definitions of occurrence probability:

- Occurs:** Observed on the site by Amec Foster Wheeler biologists, or recorded on-site by other qualified biologists.
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Moderate: Reported sightings in surrounding region, or site is within the known range of the species and habitat on the site is a type occasionally used by the species.
Low: Site is within the known range of the species but habitat on the site is rarely occupied by the species.

Absent: A focused study failed to detect the species, or, no suitable habitat is present.

Unknown: Distribution and habitat use has not been clearly determined.

Federal designations: (F = federal Endangered Species Act or federal agency designations)

ND: No designation

State designations: (C = California Endangered Species Act or CDFG designations)

CDFW state rankings are a reflection of the overall condition of an element throughout its California range. The number after the decimal point represents a threat designation attached to the rank:

S1 = Critically Imperiled. Less than (<) 6 Element Occurrences (EOs) OR < 1,000 individuals OR < 2,000 acres

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S1.2 = threatened

S1.3 = no current threats known

S2 = Imperiled. 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres

S2.1 = very threatened

S2.2 = threatened

S2.3 = no current threats known

S3 = Vulnerable. 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres

S3.1 = very threatened

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S5 = Secure. Common, widespread, and abundant in the state.

SH = All known California sites are historical, not extant

5.6.4 Special Status Animals

Fish – No waterways capable of supporting the federally listed as threatened Santa Ana sucker (*Catostomus santaanae*) are present in the project area. It is the only fish species identified by the literature search.

Reptiles – Only two special status reptile species, (Belding's) orange-throated whiptail (*Aspidoscelis hyperythra*), and coast (San Diego) horned lizard (*Phrynosoma blainvillii*) are known from the BSA, and no habitat is present for them. Neither is state or federally listed as threatened or endangered.

Birds – Sixteen special status bird species were identified to be of potential occurrence in the project area. Five of those have no suitable habitat, and are not expected to occur, see Table 2. Of the remaining 11 species, four would occur only in winter or as foragers, including the white-faced ibis (*Plegadis chihi*) which was present foraging in the BSA during the habitat assessment. In the BSA, white-faced ibises move around to various ephemeral ponds and flooded fields to forage. The other three birds expected only in winter or as foragers are long-eared owl (*Asio otus*), Swainson's hawk (*Buteo swainsoni*), and merlin (*Falco columbarius*). The state listed as threatened Swainson's hawk occurs only as a migrant, and the unlisted merlin and long-eared owl would be of potential only in winter. Burrowing owl is present in the BSA, detected by the focused survey for that species. Focused surveys for the least Bell's vireo and tricolored blackbird did not detect those species. Yellow warbler (*Setophaga petechia*), Peregrine falcon (*Falco peregrinus*), Cooper's hawk (*Accipiter cooperi*), and willow flycatcher (*Empidonax traillii*) were all incidentally detected in the EWTF area during focused surveys for the least Bell's vireo. Peregrine falcon forages in the BSA, but no nesting habitat is present. Willow flycatcher migrates through the BSA, but no nesting habitat is present. Yellow warbler and Cooper's hawk forage and potentially nest in the BSA. California horned lark (*Eremophila*

alpestris actia) and loggerhead shrike (*Lanius ludovicianus*) potentially occur and nest on site. The tricolored blackbird was state listed as threatened in March of this year and the least Bell's vireo is state and federally listed as endangered. The other five potentially occurring special status species are unlisted, but burrowing owls (*Athene cunicularia*) are treated differently than most unlisted birds because they are uniquely vulnerable to ground disturbance. This is because they both roost and nest underground. Virtually all native bird species are protected by the federal MBTA and by the state fish and game code.

Mammals – Both of the special status mammal species known to have occurred in the BSA, are bats, and only one, the western yellow bat (*Lasiurus xanthinus*) is of potential occurrence. It is not state or federally listed as threatened or endangered.

Table 3. Special Status Animals

Species	Protective Status (F=Federal; C=California)	Habitat	BSA Occurrence Probability
Fish			
<i>Catostomus santaanae</i> Santa Ana sucker	F: THR C: S1	Endemic to Los Angeles basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, & algae.	Absent No suitable habitat.
Reptiles			
<i>Aspidoscelis hyperythra</i> (Belding's) orange-throated whiptail	F: FS C: WL, S2S3	Prefers chaparral, coastal sage scrub, juniper woodland, and oak woodland.	Absent No suitable habitat.
<i>Phrynosoma blainvillii</i> coast (San Diego) horned lizard	F: BLM C: SSC, S3S4	Occurs in many scrub and woodland habitats, grasslands; loose soils. Prefers open country, especially sandy areas, washes, and floodplains. Requires open areas for sunning, bushes for cover, ants.	Absent No suitable habitat.
Birds			
<i>Accipiter cooperi</i> Cooper's hawk	F: MBTA C: WL, S4, FGC	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks, but will utilize residential/farm trees as well	Occurs: foraging Low: nesting, potential habitat present
<i>Agelaius tricolor</i> tricolored blackbird	F: BCC, BLM, MBTA C: THR , SSC, S1S2, FGC	Breeds near fresh water, in emergent wetland with tall, dense cattails or tules, also in thickets of shrubs or tall herbs, including wheat and other crops. Feeds in grassland and cropland habitats.	Low Not found by focused survey, but breeding habitat for this nomadic species is dynamic, and foraging habitat is present.
<i>Aquila chrysaetos</i> golden eagle	F: BEPA, BCC, BLM, MBTA C: FP, WL, S3, FGC	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Absent No suitable habitat.

Species	Protective Status (F=Federal; C=California)	Habitat	BSA Occurrence Probability
<i>Asio otus</i> long-eared owl	F: MBTA C: SSC, S3?, FGC	Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	Absent Nesting, no habitat. Low Winter roosts.
<i>Athene cunicularia</i> burrowing owl	F: BCC, BLM, MBTA C: SSC, S3, FGC	Occupies ground squirrel burrows in open, dry grasslands, agricultural, railroad rights-of-way, and margins of highways, golf courses, and airports. Often utilizes man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, or wood debris piles. Nests in burrows, drainpipes, and piles of debris in grasslands, scrub habitats, and agricultural areas.	Occurs Found by focused surveys.
<i>Buteo swainsoni</i> Swainson's hawk	F: BCC, BLM, MBTA C: THR , S3, FGC	Grassland and agricultural areas; large trees for nesting. In California nesting is primarily restricted to Central Valley and Modoc Plateau.	Nesting: Absent Not known to nest in BSA region. Foraging: Low In migration.
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	F: THR , BCC, BLM, FS, MBTA C: END , S1, FGC	Breeds and nests in extensive stands of dense cottonwood/willow riparian forest along broad, lower flood bottoms of larger river systems at scattered locales in western North America; winters in South America.	Absent No suitable habitat.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	F: END , MBTA C: END (all subspecies), S1, FGC	Breeds in riparian woodlands.	Absent: nesting, no suitable habitat Occurs: migration, probably not <i>E. t. extimus</i>
<i>Eremophila alpestris actia</i> California horned lark	F: MBTA C: WL, S4, FGC	Open grasslands and fields, agricultural area, open montane grasslands with very short or no vegetation, including bare agricultural fields. During the breeding season, this species is found in short grassland, short-stature sage shrubland, and desert habitat.	Moderate Where open fields are present in BSA.
<i>Falco columbarius</i> merlin	F: MBTA C: WL, S3S4, FGC	Open country; breeds in forested openings, edges, and along rivers across northern North America. Rare fall migrant and winter visitor to southwestern California; frequenting open forests, grasslands, and especially coastal areas with flocks of small songbirds or shorebirds.	Nesting: Absent: BSA not in breeding range. Foraging: Low In winter and migration.
<i>Falco peregrinus</i> peregrine falcon	F: MBTA, BCC C: FP	Frequents bodies of water in open areas with cliffs and canyons nearby for cover and nesting.	Nesting: Absent, no suitable habitat Foraging: Occurs
<i>Icteria virens</i> yellow-breasted chat	F: MBTA C: SSC, S3, FGC	Nests in dense riparian thickets and brushy tangles in the lower portions of foothill canyons and in the lowlands.	Absent No suitable habitat.
<i>Lanius ludovicianus</i> loggerhead shrike	F: BCC, MBTA C: SSC, S4, FGC	Found in open habitats with widely spaced vegetation.	Low Suitable potential habitat in BSA.

Species	Protective Status (F=Federal; C=California)	Habitat	BSA Occurrence Probability
<i>Plegadis chihi</i> white-faced ibis	F: MBTA C: WL, S3S4, FGC	Shallow fresh-water marsh with dense tule thickets for nesting. Interspersed with areas of shallow water for foraging.	Nesting: Absent No suitable habitat in BSA. Foraging: Occurs Present during habitat assessment.
<i>Poliophtila californica californica</i> coastal California gnatcatcher	F: THR , MBTA C: SSC, S2, FGC	Inhabits sage scrub in low-lying foothills and valleys, and sparse chaparral habitats.	Absent No suitable habitat.
<i>Setophaga petechia</i> yellow warbler	F: BCC, MBTA C: SSC, S3S4, FG	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, & alders	Occurs: foraging/ migration Low: nesting, small patch of marginal habitat in the EWTF.
<i>Vireo bellii pusillus</i> least Bell's vireo	F: END , MBTA C: END , S2, FGC	Inhabits riparian forests and willow thickets. Nests from central California to northern Baja California and winters in southern Baja California.	Absent Not detected by focused survey.
Mammals			
<i>Antrozous pallidus</i> pallid bat	F: BLM, FS C: SSC, S3 WBWG: H	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Absent No suitable habitat.
<i>Lasiurus xanthinus</i> western yellow bat	F: ND C: SSC, S3 WBWG: H	Occurs in palm oases and in residential areas with untrimmed palm trees. Day roosts in trees only, particularly under palm aprons; especially the dead fronds of palm trees. Forages over water and among trees.	Low Suitable palms & trees present in the BSA.

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Unknown: Distribution and habitat use has not been clearly determined.

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END: Federally listed, Endangered

THR: Federally listed, Threatened

CAN: Candidate for Federal listing

MBTA: Migratory Bird Treaty Act

BEPA: Bald Eagle Protection Act (also protects Golden Eagles)

BCC: Birds of Conservation Concern

BLM = Bureau of Land Management Sensitive

FS: USFS sensitive

ND: No designation

State designations: (C = California Endangered Species Act or CDFG designations)

END: State listed, Endangered

THR: State listed, Threatened

CAN: Candidate for State listing

RARE: State listed, Rare

FP: Fully Protected Species

SSC: Species of Special Concern

WL: Watch List Species

FGC: Bird species protected by Fish and Game Code

ND: No designation

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S5 = Secure. Common, widespread, and abundant in the state.

SH = All known California sites are historical, not extant

Western Bat Working Group (WBWG) designations:

H = High: Species which are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats.

M: = Medium: Species which warrant a medium level of concern and need closer evaluation, more research, and conservation actions of both the species and possible threats. A lack of meaningful information is a major obstacle in adequately assessing these species' status and should be considered a threat.

L: = Low: Species for which most of the existing data support stable populations, and for which the potential for major changes in status in the near future is considered unlikely. There may be localized concerns, but the overall status of the species is believed to be secure. Conservation actions would still apply for these bats, but limited resources are best used on High and Medium status species.

P: = Periphery: This designation indicates a species on the edge of its range, for which no other designation has been determined.

5.7 Wildlife Corridors

The BSA was assessed to determine if a wildlife linkage occurs on or within a portion of the project site. Because the BSA is completely altered by development and agriculture, it does not act as a corridor for terrestrial animals. To a limited degree, it acts as a corridor (flyway) for birds, especially those associated with water, which use agricultural ponds and marshes for foraging, etc.

6.0 DISCUSSION

The majority of the project site is located within disturbed areas associated with existing roads, road shoulders, and railroad right-of-ways. Keeping direct impacts confined to such areas will minimize or eliminate direct impacts to protected biological resources. Areas where direct impacts are possible due to the presence of relatively undisturbed potential habitat for those biological elements include:

- The alternative from Edison Avenue north to the EWTF,
- Undeveloped/unpaved areas within the EWTF, especially the basin at the south end.
- Any areas where pipeline installation work might encroach on the walls of ditches and berms, which could potentially harbor burrowing owls and/or be a jurisdictional water.

Recommendations for minimization of direct impacts, if any, are in Section 7.0 below. Indirect impacts are also a potential issue, primarily for birds. The MBTA and California Fish and Game Code protect virtually all native birds, both common and special status species. Although nesting birds and other wildlife could occur in close proximity to the project over a wide area, the majority of the project alignment is along busy thoroughfares and an airport. Any wildlife present will already be accustomed to a certain level of noise and vibration.

7.0 RECOMMENDATIONS

Appropriately-timed preconstruction surveys by a qualified biologist will always precede direct and indirect impacts in areas where potential special status biological resources or nesting bird habitat is present. Depending on the habitat, these surveys will vary in timing, but in no case would they be done more than 30-days prior to vegetation removal or ground disturbance. In some cases a qualified biological monitor may be needed during project work activities. These issues are described in more detail below.

A worker environmental awareness program (WEAP) will be presented prior to any work to outline issues and mitigation measures. All construction personnel assigned to the project must go through the WEAP training prior to starting any work within the project site. Other standard best management practices (BMP) should be implemented to avoid impacts. These would include trash management, project speed limits, etc.

We recommend the following specific measures to reduce or eliminate potential impacts to listed and other special status species. The linear nature of most of the project, the regular presence of disturbance from aircraft and vehicles over most of the project, and the fact that most project direct impacts will be in already disturbed areas was taken into consideration when making these recommendations.

7.1 Wetlands and Jurisdictional Drainages

Potentially jurisdictional waters are present in the BSA. It is our understanding that these waters will be avoided. If they are not 100% avoided, permitting with the CDFW and/or USACE may be needed.

7.2 Special Status Plant Species

Extremely marginal habitat for the unlisted San Bernardino aster is present in the ditches identified as jurisdictional waters in the BSA. Impacts to ditches are not anticipated, however, and said ditches are regularly maintained and cleared of vegetation by other agencies. Further, this species is not known to have been detected in the project area for over 100 years. Project impacts to this species, if any, would be insignificant. The unlisted Southern California black walnut, if present, would be in the BSA, but not in the path of the project. If it is present at all, it would be within private properties preserved or planted as a shade tree. No impacts to this species are anticipated. We do not recommend any action for plant species other than a preconstruction survey of any potential habitat that may be impacted.

7.3 Special Status Birds

With the exception of the burrowing owl, unlisted special status bird species will be adequately protected by the nesting bird recommendations in Section 7.4. Burrowing owls are present in the BSA, so consultation with CDFW will be required to determine if a Habitat Loss Mitigation and Relocation Program is warranted. Based on the location of the owls, CDFW may require a number of mitigation options that range from passive relocation to habitat replacement. A preconstruction burrowing owl survey is also required prior to any vegetation removal or soil disturbance where suitable habitat is present within the BSA (CDFG 2012).

Preconstruction surveys for burrowing owls are called “take avoidance surveys” by CDFG (2012). The initial take avoidance survey should be completed no less than 14 days prior to initiating ground disturbance activities. Implementation of avoidance and minimization measures would be triggered by positive owl presence on the site where project activities will occur. The development of avoidance and minimization approaches would be informed by monitoring the burrowing owls. Burrowing owls may re-colonize a site after only a few days. Time lapses between project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance.

Focused surveys were completed for the state and federally listed as endangered Least Bell’s vireo with no detections. Regardless of the findings of the focused survey, if habitat remains within the EWTF basin at the time construction commences, pre-construction surveys are recommended during the nesting season (approximately 15 March to 15 August) for portions of the project site that are within 500-feet of that habitat. If any least Bell’s vireo or their nests are observed during the pre-construction survey, or if they are found during construction, a biological monitor will be required during all vegetation removal and ground disturbance activities within 500 feet of any riparian habitat until the listed species has left the area. Construction activities may be postponed to avoid indirect impacts to these species. With agency concurrence, the use of noise attenuation barriers could reduce the 500-foot buffer that would be expected between work and the active nest of any listed species. If regulatory permits are required from the USACE, consultation with USFWS could be required under Section 7 of the Clean Water Act.

Focused surveys for the state listed as threatened tricolored blackbird have been completed with no detections. Nesting habitat (tall annual vegetation or crops) for this nomadic species is dynamic, however, and can grow, die back, and grow again annually in various locations depending on current land management. The CDFW has advised the following actions for this state listed as threatened bird species:

- preconstruction surveys should be conducted to evaluate the potential presence of TRBL breeding colonies during the breeding season (March 1 - July 31) in suitable nesting habitat within 500 feet of the project footprint. We recommend that this be done no more than one week before project disturbances.
- If project is initiated during the breeding season, conduct at least two surveys within 15 days of the project initiation, one of which must occur within 5 days prior to project initiation.
- for projects occurring during the tricolored blackbird breeding season, surveys shall be conducted monthly during the breeding season (March 1 - July 31)
- If nesting birds are detected, the CDFW must be contacted for advice on avoidance measures that should be implemented. Such measures would be chosen at the discretion of the CDFW, but might include “no work” buffers or noise attenuation barriers.

7.4 Nesting Birds

Direct and indirect impacts to nesting birds can be minimized or eliminated by conducting work outside of the local breeding season. Within the project area, breeding activity is expected to occur between 1 February and 31 August. Work from about 1 September through 31 January would therefore be expected to avoid nesting activity. If work must be done during the breeding season, potential nesting areas should be examined by a qualified biologist in the week prior to disturbance, especially where there could be any direct impacts. Most of the project route is adjacent to agricultural fields and/or planted trees which may harbor nesting birds. While there is no established protocol for nest avoidance, when consulted, the CDFW generally recommends avoidance buffers of about 500 feet for raptors and threatened/endangered species and 100 – 300 feet for other birds. If active nests are found, they should be avoided until young have fledged. This distance for avoidance buffers is directly related to the disturbance tolerance of each individual species. Listed species and/or species such as raptors with a very low tolerance for disturbance will have a much larger avoidance buffer. Species with a high disturbance tolerance will have a much shorter avoidance buffer. The use of noise attenuation barriers when adjacent to nesting habitat or known nests may allow such buffers to be reduced or eliminated.

7.5 Special Status Bat

There is a low possibility that the unlisted special status western yellow bat could occur onsite. They are commonly found in the southwestern United States roosting in the skirt of dead fronds in both native and non-native palm trees, and have also been documented roosting in cottonwood trees (*Populus* spp.). Some individuals migrate, but others are present year-round (Western Bat Working Group 2017). A few palms suitable for occupation by this species are present in the BSA. If any trees, especially palms, must be disturbed or removed, a qualified biologist should conduct a pre-construction survey for bat roosts at most one week prior to project disturbance. If present, appropriate mitigation measures should be implemented in consultation with wildlife agencies, which would potentially include the use of noise attenuation barriers.

7.5.1 Survey Protocols for Special Status Plants and Animals

Protocol surveys performed included burrowing owl, least Bell's vireo, and tricolored blackbird. The most recent approved survey protocols were used to conduct focused surveys.

7.6 Wildlife Corridors

No terrestrial corridor exists in the project BSA. Since the project consists of improvements to existing facilities and installation of an underground pipeline, the finished project will not block any "corridors" (flyways) for birds or bats that may utilize the area.

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APPENDIX A

PLANT AND VERTEBRATE SPECIES LISTS

PLANT SPECIES LIST

This list reports only plant species observed in the BSA during Woodsite visits for this project. Other species may have been overlooked or undetectable due to their seasonal growth patterns. Nomenclature and taxonomy for fauna observed on site follows the Jepson eFlora (2019). If no common name is listed in Jepson, the United States Department of Agriculture PLANTS database (2019) is followed.

SYMBOLS AND ABBREVIATIONS:

- * Non-native species
- ** **Sensitive species** (State or federally listed as endangered, threatened, or candidate; state species of special concern/watchlist/tracked; Bureau of Land Management and/or USFS sensitive)
- sp. Identified only to genus; species unknown (plural = spp.)

PLANTS OBSERVED	
ADOXACEAE	
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry
ARECAEAE	
<i>Washingtonia</i> sp.*	fan palm
ASTERACEAE	
<i>Achillea millefolium</i>	common yarrow
<i>Cotula australis</i> *	Australian cotula
<i>Erigeron bonariensis</i> *	flax-leaved horseweed
<i>Erigeron canadensis</i>	horseweed
<i>Lactuca serriola</i> *	prickly lettuce
<i>Pseudognaphalium luteoalbum</i> *	Jersey cudweed
<i>Sonchus asper</i> ssp. <i>asper</i> *	prickly sow thistle
<i>Taraxacum officinale</i> *	common dandelion
<i>Verbesina encelioides</i> ssp. <i>exauriculata</i> *	golden crownbeard
<i>Xanthium strumarium</i>	cocklebur
BORAGINACEAE	
<i>Amsinckia</i> cf. <i>menziesii</i>	small flowered fiddleneck
BRASSICACEAE	
<i>Capsella bursa-pastoris</i> *	shepherd's purse
<i>Carrichtera annua</i> *	Wards weed
<i>Hirschfeldia incana</i> *	shortpod mustard
<i>Raphanus sativus</i> *	radish
<i>Sisymbrium irio</i> *	London rocket

CHENOPODIACEAE	
<i>Chenopodium</i> cf. <i>album</i> *	lamb's quarters
<i>Kochia</i> (<i>Bassia</i>) <i>scoparia</i> *	burningbush
<i>Salsola</i> <i>tragus</i> *	Russian thistle
CYPERACEAE	
<i>Schoenoplectus californicus</i>	southern bulrush
EUPHORBIACEAE	
<i>Ricinus communis</i> *	castorbean
FABACEAE	
<i>Medicago lupulina</i> *	black medick
<i>Parkinsonia aculeata</i> *	<i>Mexican palo verde</i>
<i>Trifolium repens</i> *	white clover
GERANIACEAE	
<i>Erodium cicutarium</i> *	redstem filaree
JUNCACEAE	
<i>Juncus bufonius</i>	toad rush
MALVACEAE	
<i>Malva parviflora</i> *	cheeseweed
MYRSINACEAE	
<i>Lysimachia arvensis</i> *	scarlet pimpernel
MYRTACEAE	
<i>Eucalyptus camaldulensis</i> *	Red River gum
PLANTAGINACEAE	
<i>Plantago major</i> *	common plantain
POACEAE	
<i>Bromus catharticus</i> *	rescuegrass
<i>Bromus diandrus</i> *	ripgut grass
<i>Cynodon dactylon</i> *	Bermuda grass
<i>Hordeum murinum</i> ssp. <i>leporinum</i> *	hare barley
<i>Phalaris aquatica</i> *	Harding grass
<i>Poa annua</i> *	annual blue grass
<i>Schismus barbatus</i> *	common Mediterranean grass
POLYGONACEAE	
<i>Persicaria</i> cf. <i>lapathifolia</i>	willow weed
<i>Polygonum aviculare</i> *	knotweed
<i>Rumex crispus</i> *	curly dock
PORTULACACEAE	
<i>Portulaca oleracea</i> *	purslane
SALICACEAE	
<i>Salix laevigata</i>	red willow

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SIMAROUBACEAE	
<i>Ailanthus altissima</i> *	tree of heaven
URTICACEAE	
<i>Urtica urens</i> *	dwarf nettle

VERTEBRATE ANIMALS LIST

This list reports only vertebrate animal species observed during site visits for this project. Other species may have been overlooked or undetectable due to their activity patterns. Nomenclature and taxonomy for fauna observed on site follows the California Bird Records Committee Official California Checklist (2019) for birds and CDFW (2016) for herpetofauna and mammals.

SYMBOLS AND ABBREVIATIONS:

- * Non-native species
 - ** Sensitive species (State or federally listed as endangered, threatened, or candidate; state species of special concern/watchlist/tracked; USFWS bird of conservation concern; Bureau of Land Management and/or USFS sensitive)
 - sp. Identified only to genus; species unknown (plural = spp.)
-

REPTILES

Phrynosomatidae

Sceloporus occidentalis

Spiny Lizards

western fence lizard

BIRDS

Anatidae

Branta canadensis

Spatula cyanoptera

Anas americana

Anas platyrhynchos

Ducks, Geese, and Swans

Canada goose

cinnamon teal

American wigeon

mallard

Columbidae

*Columba livia**

*Streptopelia decaocto**

Zenaidura macroura

Pigeons and Doves

rock pigeon

Eurasian collared-dove

mourning dove

Apodidae

Aeronautes saxatalis

Swifts

white-throated swift

Trochilidae

Calypte anna

Selasphorus sasin

Hummingbirds

Anna's hummingbird

Allen's hummingbird

Rallidae

Fulica americana

Rails, Gallinules, and Coots

American coot

Recurvirostridae

Himantopus mexicanus

Stilts and Avocets

black-necked stilt

Charadriidae

Charadrius vociferus

Lapwings and Plovers

killdeer

Scolopacidae

Numenius americanus

Sandpipers, Phalaropes, and Allies

long-billed curlew

Laridae

Larus californicus

Ardeidae

Ardea herodias

Ardea alba

Bubulcus ibis

Threskiornithidae

*Plegadis chihi***

Cathartidae

Cathartes aura

Accipitridae

*Accipiter cooperii***

Buteo jamaicensis

Strigidae

*Athene cunicularia***

Falconidae

Falco sparverius

*Falco peregrinus***

Tyrannidae

Myiarchus cinerascens

Tyrannus vociferus

Tyrannus verticalis

*Empidonax traillii***

Sayornis nigricans

Sayornis saya

Corvidae

Corvus brachyrhynchos

Corvus corax

Hirundinidae

Hirundo rustica

Aegithalidae

Psaltiriparus minimus

Troglodytidae

Troglodytes aedon

Thryomanes bewickii

Turdidae

Catharus ustulatus

Mimidae

Mimus polyglottos

Gulls, Terns, and Skimmers

California gull

Hérons and Egrets

great blue heron

great egret

cattle egret

Ibises and Spoonbills

white-faced ibis

New World Vultures

turkey vulture

Hawks and Relatives

Cooper's hawk

red-tailed hawk

Typical Owls

burrowing owl

Caracaras and Falcons

American kestrel

peregrine falcon

Tyrant Flycatchers

ash-throated flycatcher

Cassin's kingbird

western kingbird

willow flycatcher

black phoebe

Say's phoebe

Jays, Crows, Ravens, Magpies

American crow

common raven

Swallows

barn swallow

Long-tailed Tits and Bushtits

bushtit

Wrens

house wren

Bewick's wren

Thrushes

Swainson's thrush

Mockingbirds, Thrashers, and Allies

northern mockingbird

Sturnidae

*Sturnus vulgaris**

Passeridae

*Passer domesticus**

Fringillidae

Haemorhous mexicanus

Spinus psaltria

Passerelliidae

Passerculus sandwichensis

Melospiza melodia

Zonotrichia leucophrys

Icteridae

Sturnella neglecta

Agelaius phoeniceus

Molothrus ater

Euphagus cyanocephalus

Quiscalus mexicanus

Parulidae

*Setophaga petechia***

Setophaga coronata

Cardellina pusilla

Cardinalidae

Passerina caerulea

MAMMALS

Leporidae

Sylvilagus audubonii

Geomyidae

Thomomys bottae

Sciuridae

Otospermophilus beecheyi

Canidae

Canis latrans

Starlings

European starling

Old World Sparrows

house sparrow

Finches

house finch

lesser goldfinch

Towhees, New World Sparrows

savannah sparrow

song sparrow

white-crowned sparrow

Blackbirds, Meadowlarks, Orioles

western meadowlark

red-winged blackbird

brown-headed cowbird

Brewer's blackbird

great-tailed grackle

Wood-Warblers

yellow warbler

yellow-rumped warbler

Wilson's warbler

Cardinals and Allies

blue grosbeak

Rabbits and Hares

Audubon's (desert) cottontail

Pocket Gophers

Botta's pocket gopher

Squirrels

California ground squirrel

Foxes, Wolves and Relatives

coyote

APPENDIX B

SITE PHOTOGRAPHS



Photo 1. Exterior of the developed CIDF on the south side of Kimball Avenue west of Euclid Avenue. Note that the cover photo of this report shows the EWTF site.



Photo 2. Potential tricolored blackbird breeding habitat in the BSA.



Photo 3. Marginal least Bell's vireo habitat and potential jurisdictional waters in the southern EWTF.



Photo 4. Potential burrowing owl burrow in the BSA near the intersection of Bon View and Edison Avenues.



Photo 5. Two burrowing owls on a berm near the intersection of Edison and Bon View Avenues.



Photo 6. Looking north from Edison Avenue at the "Campus Avenue" alternative.



Photo 7. Typical BSA view of dairy cattle and farm pond, here near the intersection of Bon View and Edison Avenues.



Photo 8. Looking east from Euclid Avenue at aircraft and agriculture on the Chino Airport.



Photo 9. Looking west at a potentially jurisdictional drainage along the north edge of Merrill Avenue.

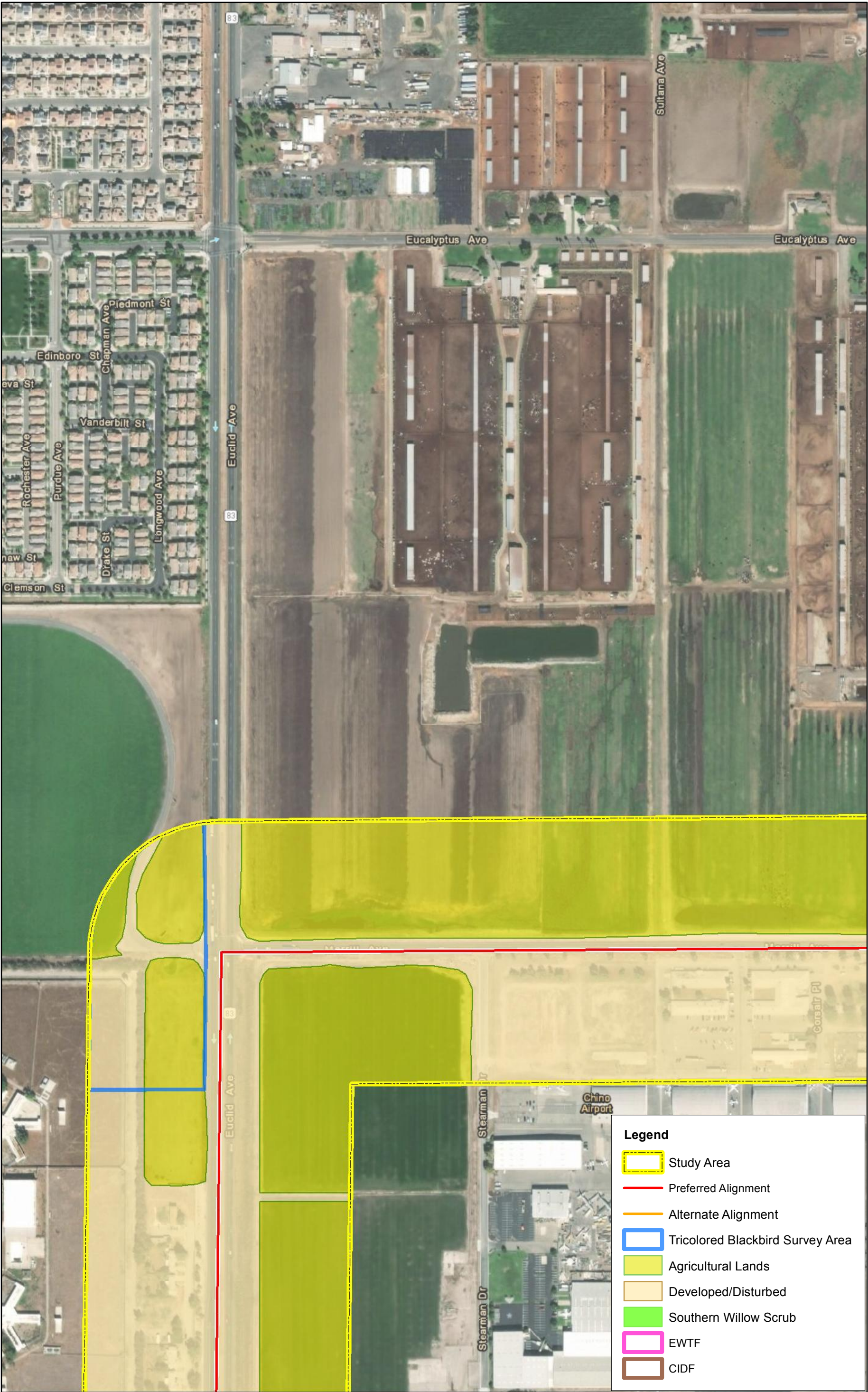


Photo 10. Looking north from near the intersection of Euclid and Merrill Avenues. Agriculture, prison entrance, and encroaching residential development.

APPENDIX C

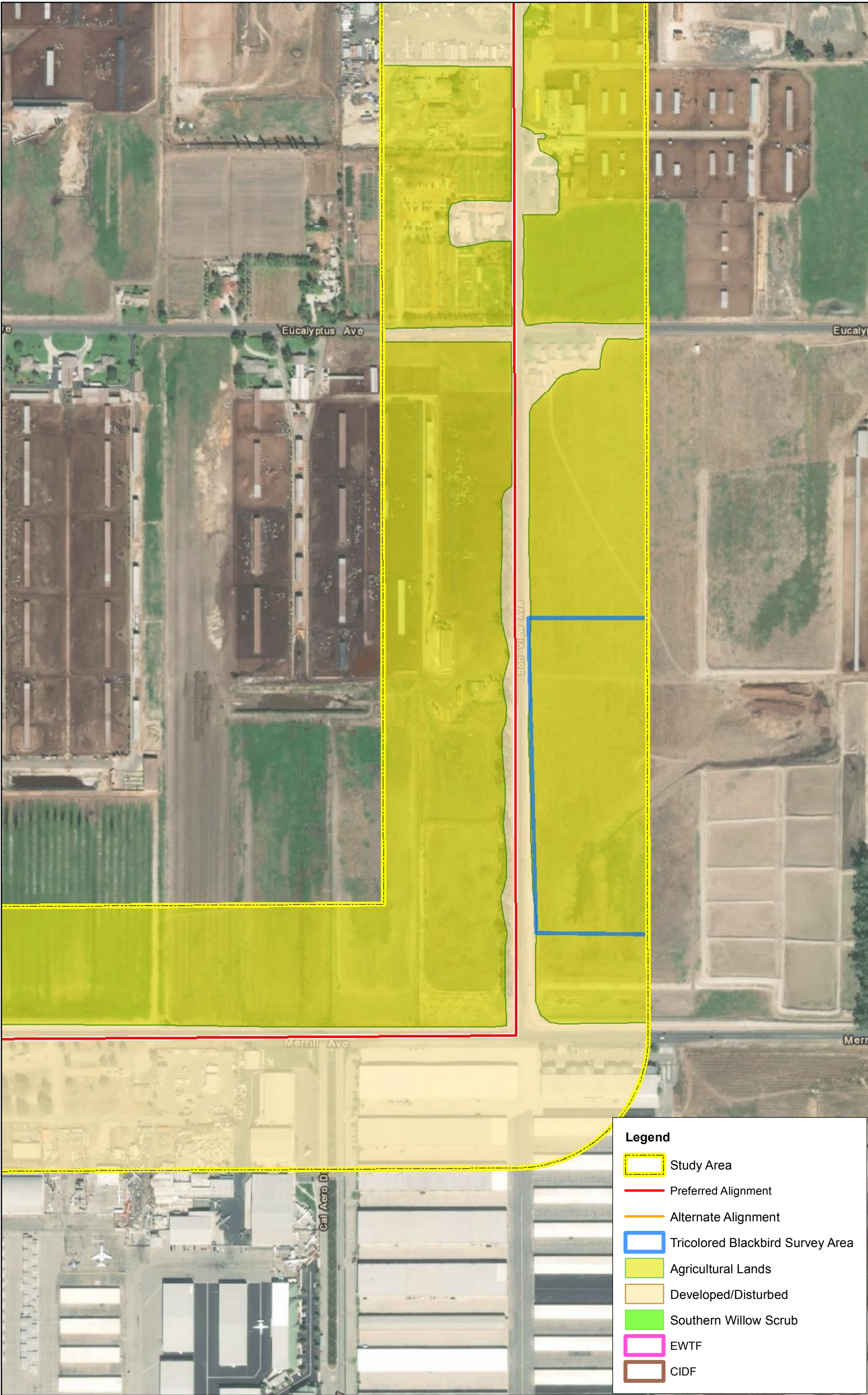
TRICOLORED BLACKBIRD FOCUSED SURVEY FORMS





Vegetation and Tricolored Blackbird Survey Map
Eastside Water Treatment Facility and Brineline Project

FIGURE
5-2



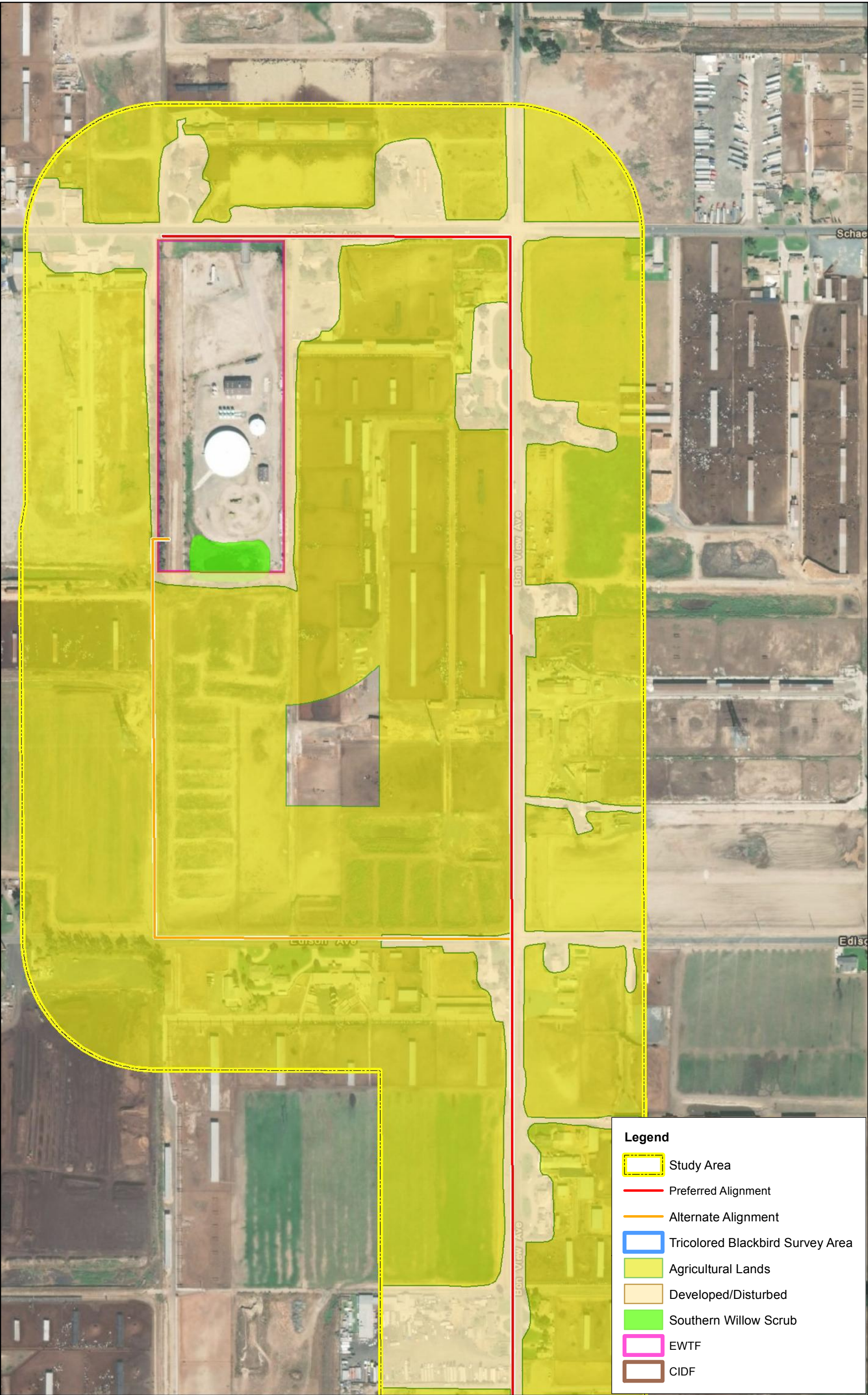
- Legend**
- Study Area
 - Preferred Alignment
 - Alternate Alignment
 - Tricolored Blackbird Survey Area
 - Agricultural Lands
 - Developed/Disturbed
 - Southern Willow Scrub
 - EWTF
 - CIDF

0 170 340 Feet
1 in = 340 ft



Vegetation and Tricolored Blackbird Survey Map
Eastside Water Treatment Facility and Brineline Project

FIGURE
5-3



APPENDIX D

BURROWING OWL FOCUSED SURVEY REPORT

**Draft FOCUSED SURVEY FOR THE BURROWING OWL
EASTSIDE WATER TREATMENT FACILITY AND BRINELINE PROJECT
CITIES OF CHINO AND ONTARIO IN SAN BERNARDINO COUNTY, CALIFORNIA**



18 July 2019

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1.0 INTRODUCTION

At the request of Albert A. Webb Associates (Webb), Wood Environment & Infrastructure Solutions, Inc. (Wood) conducted a focused survey for the burrowing owl (*Athene cunicularia*). The survey was conducted in support of the proposed Eastside Water Treatment Facility and Brineline Project (project) and its alternative. The biological study area (BSA) for this survey included the project site plus a 500 foot buffer around it and included portions of the Cities of Chino and Ontario in San Bernardino County, California (see Figure 1).

2.0 PROJECT BACKGROUND/SITE DESCRIPTION

The proposed project includes a four-mile dual six-inch brine pipeline between the Chino I Desalter Facility (CIDF) and the Eastside Water Treatment Facility (EWTF). The pipeline would generally follow existing roads and previously disturbed areas, utilizing a route that would follow Kimball Avenue east from the CIDF, Euclid Avenue north, Merrill Avenue east, Bon View Avenue north, and Schaefer Avenue west to the EWTF. An alternative would have one of the dual pipelines leave Bon View at Edison Avenue, heading west, then north to the EWTF on conceptual Campus Avenue, an undeveloped street. The project also includes upgrades to the CIDF, which is on the south side of Kimball Avenue, west of Euclid Avenue in Chino. The EWTF is on the south side of Schaefer Avenue, west of Bon View Avenue in Ontario. See Figure 1.

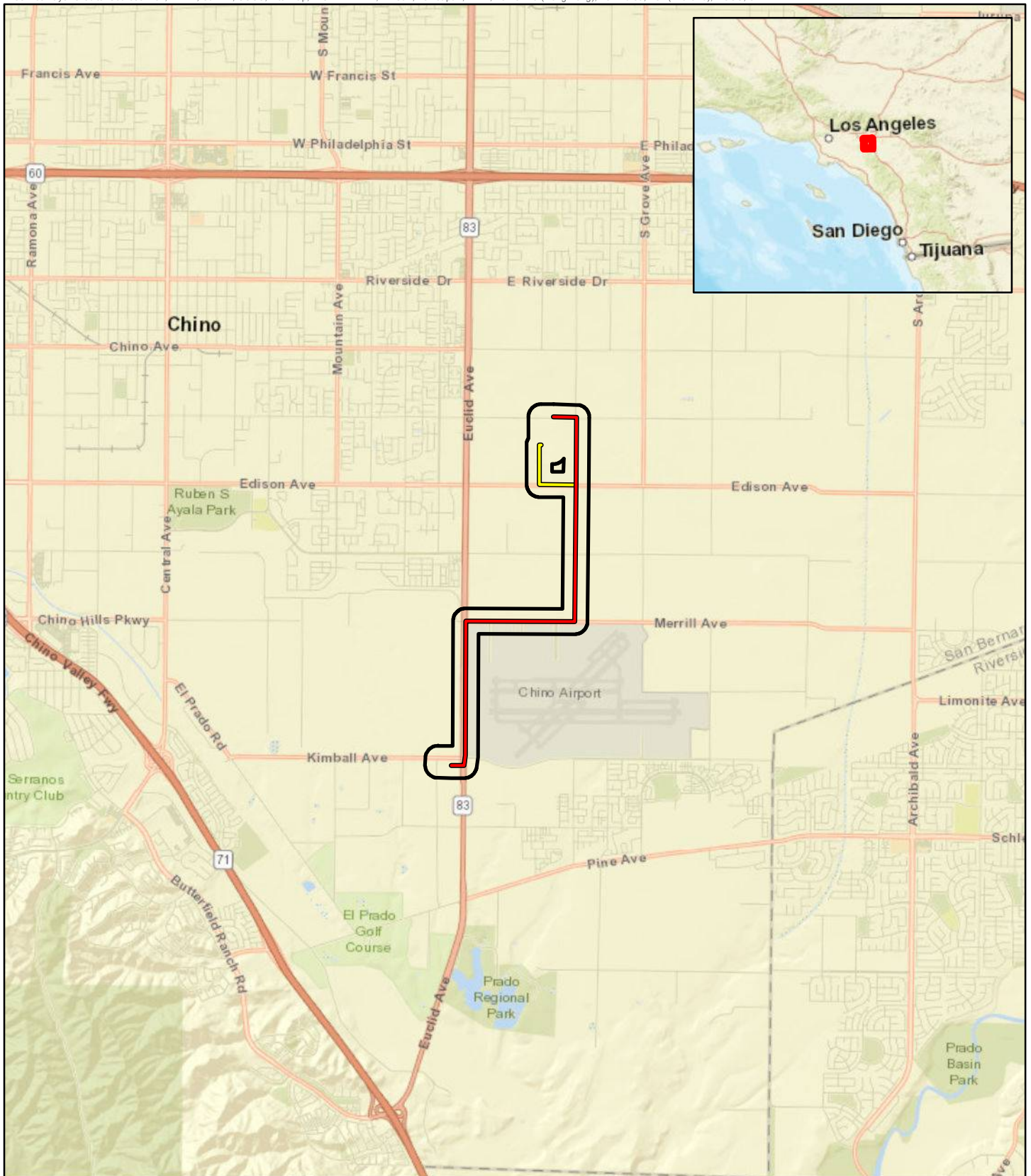
Project elevations range from approximately 590 feet (180 meters) at the CIDF to 755 feet (230 meters) at the EWTF. Despite the elevational change, the slope is gentle with the project area appearing flat. The alignment passes through a wide variety of conditions, from undeveloped to agriculture and vacant lots and from residential to commercial and industrial areas, but is dominated by dairy farms.

3.0 BURROWING OWL SURVEY

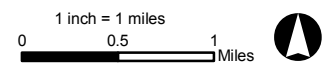
3.1 Burrowing Owl Background

The burrowing owl is a small, tan, short-tailed, ground-dwelling owl that occupies underground burrows. A member of the Strigidae (typical owls family), this species is associated with grasslands and other arid open terrain, throughout much of the western United States. Burrowing owls are opportunistic in their selection of burrows, typically utilizing the burrows of small mammals (e.g., ground squirrels, kit fox (*Vulpes macrotis*), but also use desert tortoise burrows, drain pipes, culverts, and other suitable natural or manmade cavities at or below ground level. In California, the species often occurs in association with colonies of the California ground squirrel (*Spermophilus beecheyi*), where it makes use of the squirrel's burrows. The entrance of the burrow is often adorned with animal dung, feathers, debris, and other small objects. The species is active both day and night, and may be seen perching conspicuously on fence posts or standing at the entrance of their burrows. Due to the characteristic fossorial habits of burrowing owls, nest burrows are a critical component of their habitat.

In southern California, burrowing owls are not only found in undisturbed natural areas, but also fallow agricultural fields, margins of active agricultural areas, livestock farms, airports, and vacant lots. In spite of their apparent tolerance to human activities, burrowing owl populations in California are clearly declining and, if declines continue, the species may qualify for listing under the state and/or federal Endangered Species Acts (California Department of Fish and Game [CDFG] 1995). The declines in Burrowing Owl populations are attributed to loss and degradation of habitat, to ongoing residential and commercial development, and to rodent control programs. The burrowing owl is currently designated a California Species of Concern (CSC) by the CDFG (note that the CDFG changed their name in 2013 to the California Department of Fish and Wildlife [CDFW]), managed as a Bird of Conservation Concern by the U.S. Fish and Wildlife Service (USFWS), is considered "sensitive" by the U. S. Bureau of Land



Path: Q:\3554_NaturalResources\Chino_BrilineLine_1955400763\MXD\ReportFigures\BUOW_ReportFig1_Vicinity_Regional.mxd, chris.nixon 7/8/2019



wood.

- Alternative Alignment
- Preferred Alignment
- Burrowing Owl Survey Area

FIGURE 1

Project Vicinity and Regional Location
Eastside Water Treatment
Facility and Brinline Project
San Bernardino County, CA

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Management (BLM), and protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800.

The California Burrowing Owl Consortium (CBOC) developed the Burrowing Owl Survey Protocol and Mitigation Guidelines to meet the need of uniform standards when surveying burrowing owl populations and evaluating impacts from development projects (CBOC 1993). In 1995 the CDFG issued the Staff Report on Burrowing Owl Mitigation to all of its regional managers to ensure consistency in standards, policies, and regulatory mandates relating to the burrowing owl (CDFG 1995). Due to the continued decline of burrowing owl populations statewide and as an attempt to reverse this trend, the CDFG issued more effective, viable, coordinated and concerted approach to burrowing owl conservation actions with the release of an updated Staff Report on Burrowing Owl Mitigation (CDFG 2012).

3.2 Burrowing Owl Survey Methods

Habitat was assessed for the burrowing owl by Wood senior biologist John F. Green on 29 March 2019. The habitat assessment included visually inspecting and mapping all areas of the site and adjacent areas (a 500 foot buffer around the site) for components of burrowing owl habitat (i.e., sparsely vegetated areas). Habitat was present, so the burrow survey and the first of four focused surveys was conducted on 11 April 2019 by Wood biologists Dale Hameister and Carla Sanchez. That survey visit and the subsequent surveys were conducted between morning civil twilight sunrise and 10:00 AM (Pacific Standard Time [PST]). Focused survey visit two was conducted by Hameister, and surveys three and four were conducted by Green. Access was granted to the alternative route in July, and it was surveyed on foot a single time by Green on 15 July, the last day of the protocol breeding season survey period.

Straight line transects spaced no more than 20 meters apart (ten meters apart on the project site) were walked throughout all suitable areas of the site and buffer area in order to identify occupiable habitat. Where access to the buffers was not possible, binoculars were used to scan for owls and habitat. Burrows suitable for burrowing owl occupation were recorded with a Global Positioning System (GPS), and closely monitored and inspected during each subsequent visit for evidence of burrowing owl use (i.e., whitewash, pellets, feathers and other adornments). Binoculars were used to identify birds and to survey perches and potential burrows prior to closer approach. A handheld anemometer was used to record temperatures and wind speeds. Survey dates, times, and weather conditions are presented in Table 1 below.

Table 1. Burrowing Owl Survey Data

Date	Time (PST)	Sky (% cloud cover)	Temperature (°F)	Wind (mph)
[^] 29 March 2019	0825-1205	35	69	2-10
11 April 2019	0430-0920	0-70	45-67	0-3
3 May 2019	0446-0650	100-70	62-68	0-3
24 May 2019	0605-0910	Clear-5	53-64	0-2
24 June 2019	0710-0845	100	65-67	0-2
[*] 15 July 2019	1645-1755	Clear	92-90	1-7

[^] Habitat assessment

^{*} Survey of alternative only

PST = Pacific Standard Time

F = Fahrenheit

mph = miles per hour

3.3 Burrowing Owl Survey Results

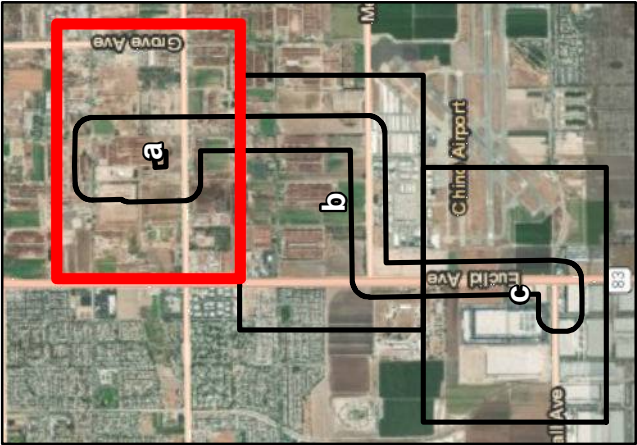
The burrow survey/first focused survey detected numerous burrows that were potentially suitable for burrowing owl occupation (see Figure 2). The third focused survey detected at least four burrowing owls at one of those sites, on the east side of Bon View Avenue, north of Edison Avenue (see Figure 2). During the final survey, at least three of those owls continued. The survey of the alternative route discovered two additional burrowing owls despite damage to the habitat by road and berm grading early on the same day. No burrowing owls or their sign were detected at any other location.

3.4 Discussion of Burrowing Owl Survey Results

The results of the breeding season focused survey indicate that the burrowing owl currently occupies at least one area adjacent to the project route where owls could be disturbed by project activities. The project area also contains widespread suitable habitat for burrowing owls which is currently unoccupied. The potential remains for the species to occur on or adjacent to the site in additional locations in the future. In accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012), a “take avoidance survey” for the burrowing owl should be conducted no less than 14 days prior to the initiation of ground disturbance activities and a final survey should also be conducted within 24 hours prior to ground disturbance. If no burrowing owls are detected during the take avoidance surveys, implementation of ground disturbance activities could proceed without further consideration of this species. If burrowing owls are detected during the take avoidance survey, avoidance and minimization measures would then be required, under the guidance of the CDFW.

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- Wood. 2019b. Eastside Water Treatment Facility and Brineline Project, draft Delineation of Jurisdictional Waters. Report prepared for Webb.



- BUOW Observation
- Potential BUOW Burrow(s)
- Alternative Alignment
- Preferred Alignment
- BUOW Suitable Habitat
- BUOW Survey Area

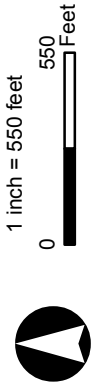


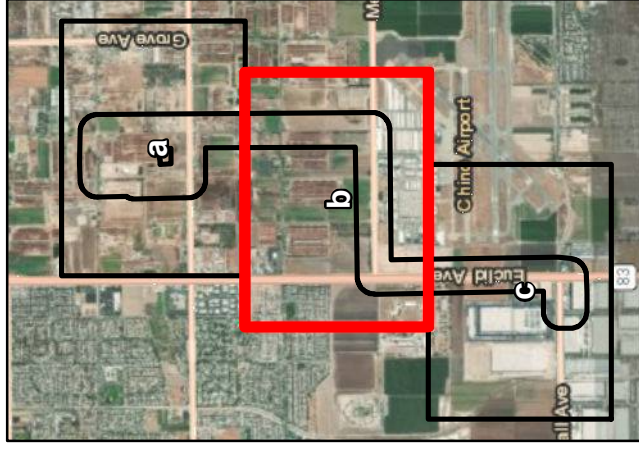
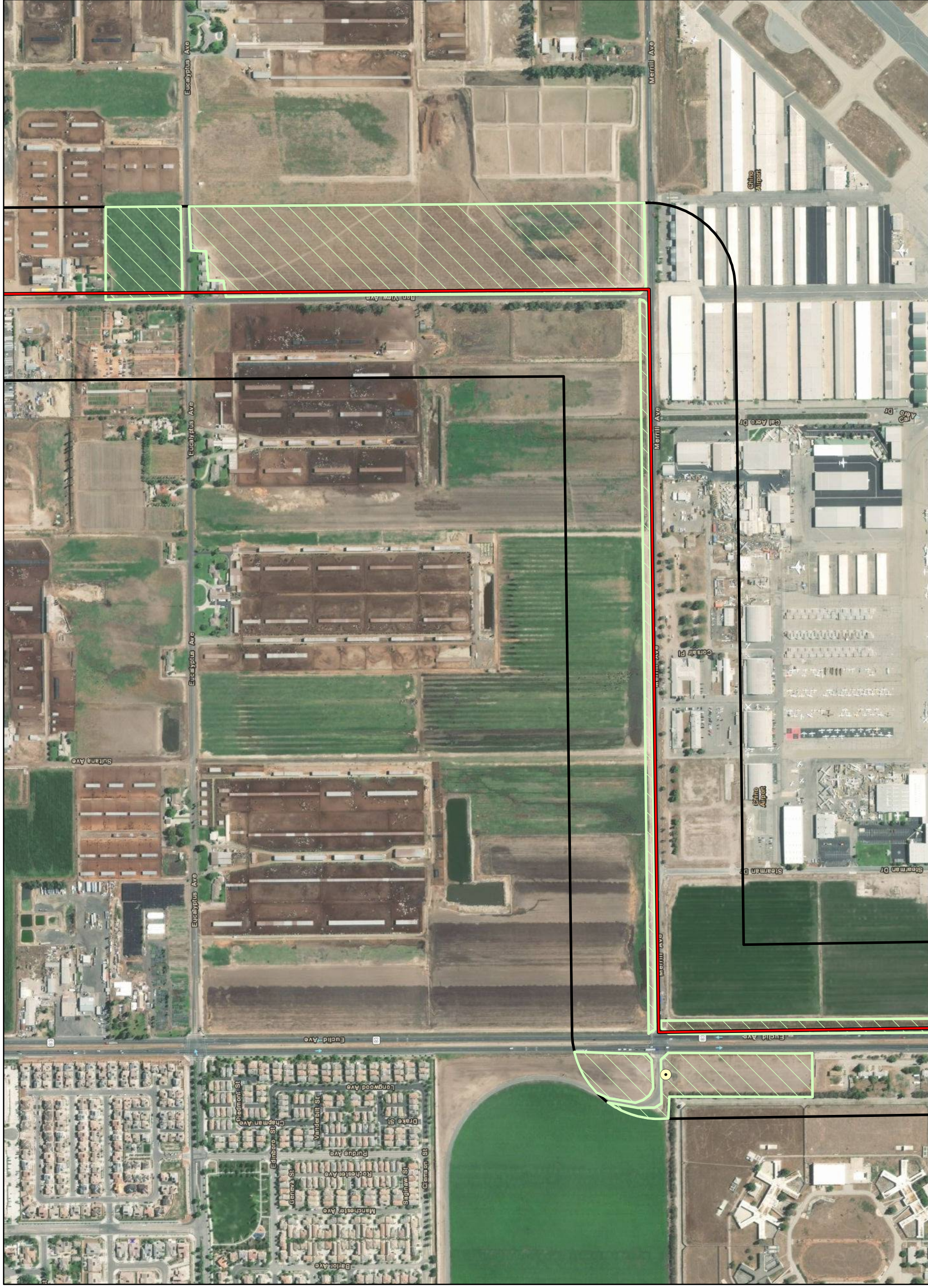
FIGURE 2a





Burrowing Owl (BUOW)
Survey Results
Eastside Water Treatment Facility
and Brineline Project
San Bernardino County, CA



Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
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DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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-  Potential BUOW Burrow(s)
-  Preferred Alignment
-  BUOW Suitable Habitat
-  BUOW Survey Area

1 inch = 550 feet



A vertical scale bar labeled "Feet" with markings at 0 and 550. The bar is black with a white rectangular section in the middle. The number "0" is at the bottom and "550" is at the top.

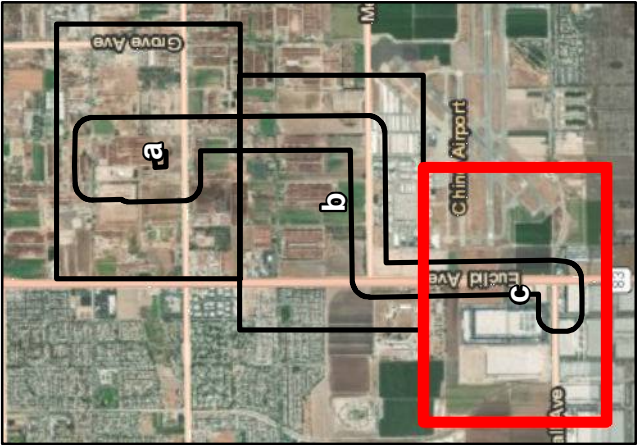
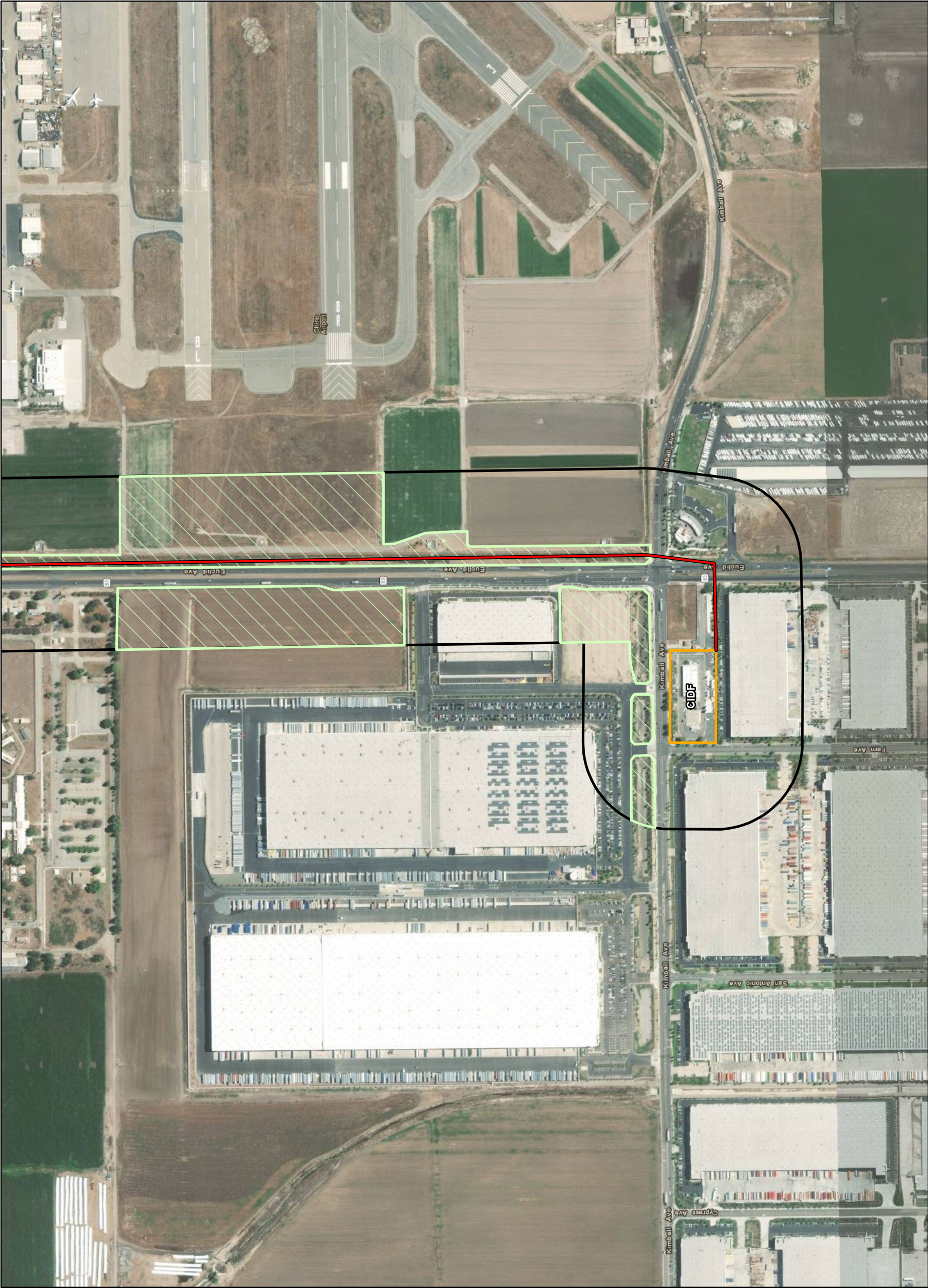
FIGURE 2b

**Burrowing Owl (BUOW)
Survey Results
Eastside Water Treatment Facility
and Brineline Project
San Bernardino County, CA**

wood.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
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- Preferred Alignment
- BUOW Suitable Habitat
- BUOW Survey Area



1 inch = 550 feet



FIGURE 2c

Burrowing Owl (BUOW)
Survey Results
Eastside Water Treatment Facility
and Brineline Project
San Bernardino County, CA



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus
DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Appendix A Site Photographs



Photo 1. California ground squirrel burrows suitable for burrowing owl occupation, here in the vicinity of Merrill and Euclid Avenues. Report cover photo shows a burrowing owl within the project BSA along Bon View Avenue north of Edison Avenue.



Photo 2. Open habitat suitable for burrowing owls, here south of the EWTF and east of the alternative route. Burrowing owls were found in the background area of this photo.

Appendix B Vertebrate Wildlife

VERTEBRATE ANIMALS LIST

This list reports only vertebrate animal species observed during site visits for this project. Other species may have been overlooked or undetectable due to their activity patterns. Nomenclature and taxonomy for fauna observed on site follows the California Bird Records Committee Official California Checklist (2019) for birds and CDFW (2016) for herpetofauna and mammals.

SYMBOLS AND ABBREVIATIONS:

- * Non-native species
- ** Sensitive species (State or federally listed as endangered, threatened, or candidate; state species of special concern/watchlist/tracked; USFWS bird of conservation concern; Bureau of Land Management and/or USFS sensitive)
- sp. Identified only to genus; species unknown (plural = spp.)

REPTILES

Phrynosomatidae

Sceloporus occidentalis

Spiny Lizards

western fence lizard

BIRDS

Anatidae

Branta canadensis

Spatula cyanoptera

Anas americana

Anas platyrhynchos

Ducks, Geese, and Swans

Canada goose

cinnamon teal

American wigeon

mallard

Columbidae

*Columba livia**

*Streptopelia decaocto**

Zenaida macroura

Pigeons and Doves

rock pigeon

Eurasian collared-dove

mourning dove

Apodidae

Aeronautes saxatalis

Swifts

white-throated swift

Trochilidae

Calypte anna

Selasphorus sasin

Hummingbirds

Anna's hummingbird

Allen's hummingbird

Rallidae

Fulica americana

Rails, Gallinules, and Coots

American coot

Recurvirostridae

Himantopus mexicanus

Stilts and Avocets

black-necked stilt

Charadriidae

Charadrius vociferus

Lapwings and Plovers

killdeer

Scolopacidae

Numenius americanus

Sandpipers, Phalaropes, and Allies

long-billed curlew

Laridae

Larus californicus

Gulls, Terns, and Skimmers

California gull

Ardeidae

Ardea herodias
Ardea alba
Bubulcus ibis

Threskiornithidae

*Plegadis chihi***

Cathartidae

Cathartes aura

Accipitridae

*Accipiter cooperii***
Buteo jamaicensis

Strigidae

*Athene cunicularia***

Falconidae

Falco sparverius
*Falco peregrinus***

Tyrannidae

Myiarchus cinerascens
Tyrannus vociferus
Tyrannus verticalis
*Empidonax traillii***
Sayornis nigricans
Sayornis saya

Corvidae

Corvus brachyrhynchos
Corvus corax

Hirundinidae

Hirundo rustica

Aegithalidae

Psaltirparus minimus

Troglodytidae

Troglodytes aedon
Thryomanes bewickii

Turdidae

Catharus ustulatus

Mimidae

Mimus polyglottos

Sturnidae

*Sturnus vulgaris**

Passeridae

*Passer domesticus**

Fringillidae

Haemorhous mexicanus
Spinus psaltria

Hérons and Egrets

great blue heron
great egret
cattle egret

Ibises and Spoonbills

white-faced ibis

New World Vultures

turkey vulture

Hawks and Relatives

Cooper's hawk
red-tailed hawk

Typical Owls

burrowing owl

Caracaras and Falcons

American kestrel
peregrine falcon

Tyrant Flycatchers

ash-throated flycatcher
Cassin's kingbird
western kingbird
willow flycatcher
black phoebe
Say's phoebe

Jays, Crows, Ravens, Magpies

American crow
common raven

Swallows

barn swallow

Long-tailed Tits and Bushtits

bushtit

Wrens

house wren
Bewick's wren

Thrushes

Swainson's thrush

Mockingbirds, Thrashers, and Allies

northern mockingbird

Starlings

European starling

Old World Sparrows

house sparrow

Finches

house finch
lesser goldfinch

Passerelliidae

Passerculus sandwichensis
Melospiza melodia
Zonotrichia leucophrys

Icteridae

Sturnella neglecta
Agelaius phoeniceus
Molothrus ater
Euphagus cyanocephalus
Quiscalus mexicanus

Parulidae

*Setophaga petechia***
Setophaga coronata
Cardellina pusilla

MAMMALS

Leporidae

Sylvilagus audubonii

Geomyidae

Thomomys bottae

Sciuridae

Otospermophilus beecheyi

Canidae

Canis latrans

Towhees, New World Sparrows

savannah sparrow
song sparrow
white-crowned sparrow

Blackbirds, Meadowlarks, Orioles

western meadowlark
red-winged blackbird
brown-headed cowbird
Brewer's blackbird
great-tailed grackle

Wood-Warblers

yellow warbler
yellow-rumped warbler
Wilson's warbler

Rabbits and Hares

Audubon's (desert) cottontail

Pocket Gophers

Botta's pocket gopher

Squirrels

California ground squirrel

Foxes, Wolves and Relatives

coyote

APPENDIX E

LEAST BELL'S VIREO FOCUSED SURVEY REPORT

**Draft FOCUSED SURVEY FOR THE LEAST BELL'S VIREO
EASTSIDE WATER TREATMENT FACILITY AND BRINELINE PROJECT
CITY OF ONTARIO IN SAN BERNARDINO COUNTY, CALIFORNIA**



29 July 2019

Submitted to:

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Wood Job # 1955400763

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5.0 METHODS	7
6.0 RESULTS	7
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APPENDIX

APPENDIX	VERTEBRATE SPECIES LIST
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1.0 INTRODUCTION

At the request of Albert A. Webb Associates (Webb), Wood Environment & Infrastructure Solutions, Inc. (Wood) conducted a focused survey for the least Bell's vireo (*Vireo bellii pusillus*, "LBVI"). The survey was conducted in support of the proposed Eastside Water Treatment Facility and Brineline Project (project) and its alternative. The biological study area (BSA) includes the project site plus a 500 foot buffer around it and is within portions of the Cities of Chino and Ontario in San Bernardino County, California (see Figure 1). Potential LBVI habitat, however, is present only within the Eastside Water Treatment Facility (EWTF) in the City of Ontario (see Figure 2).

2.0 PROJECT BACKGROUND/SITE DESCRIPTION

The proposed project includes a four-mile dual six-inch brine pipeline between the EWTF and the Chino I Desalter Facility (CIDF). The pipeline would generally follow existing roads and previously disturbed areas, utilizing a route that would follow Kimball Avenue east from the CIDF, Euclid Avenue north, Merrill Avenue east, Bon View Avenue north, and Schaefer Avenue west to the EWTF. An alternative would have one of the dual pipelines leave Bon View at Edison Avenue, heading west, then north to the EWTF on conceptual Campus Avenue, an undeveloped street. The project also includes upgrades to the CIDF, which is on the south side of Kimball Avenue, west of Euclid Avenue in Chino. The EWTF is on the south side of Schaefer Avenue, west of Bon View Avenue in Ontario.

Project elevations range from approximately 590 feet (180 meters) at the CIDF to 755 feet (230 meters) at the EWTF. Despite the elevational change, the slope is gentle with the project area appearing flat. The alignment passes through a wide variety of conditions, from undeveloped to agriculture and vacant lots and from residential to commercial and industrial areas, but is dominated by dairy farms.

3.0 BACKGROUND ON THE LEAST BELL'S VIREO

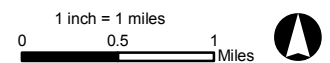
LBVI is a small, migratory, insectivorous bird which occurs in riparian habitats. Although this bird is drab in plumage and can be secretive within its densely vegetated habitat, males are easy to detect on the breeding grounds due to their conspicuous, frequently given, and diagnostic song. Nesting habitat of this species is restricted to willow (*Salix* spp.) and/or mule fat (*Baccharis salicifolia*) dominated riparian scrub along permanent or nearly permanent streams (Grinnell and Miller 1944, Goldwasser 1978, Franzreb 1987, Garrett and Dunn 1981).

LBVI were formerly widespread and common throughout low-lying riparian habitats of central and southern California, but are now restricted to a limited number of locations in southern California. They are still relatively rare in central California. Habitat reduction has contributed to this species' significant population declines. Nest parasitism by brown-headed cowbirds (*Molothrus ater*) has also seriously impacted reproductive success by LBVI, as well as many other species which build cup nests (Goldwasser 1978). The population is recovering as a result of habitat restoration and brown-headed cowbird control efforts. LBVI is listed as Endangered by the California Department of Fish and Wildlife (CDFW) and by the United States Fish and Wildlife Service (USFWS) (USFWS 1986). A final determination of critical habitat was made in 1994 (USFWS 1994a and 1994b). The project is not located within designated critical habitat for the LBVI.

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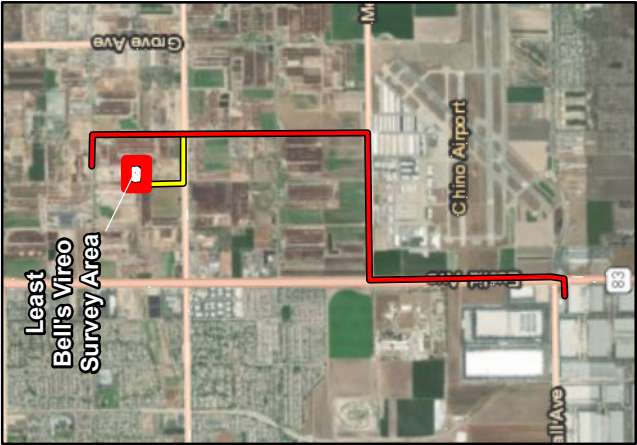


- Alternative Alignment
- Preferred Alignment
- Least Bell's Vireo Survey Area

FIGURE 1

Project Vicinity and Regional Location
Eastside Water Treatment
Facility and Brineline Project
San Bernardino County, CA

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- Alternative Alignment
- Least Bell's Vireo Survey Area
- EWTF



1 inch = 60 feet



FIGURE 2

Least Bell's Vireo
Survey Results
Eastside Water Treatment Facility
and Brineline Project
San Bernardino County, CA



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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4.0 HABITAT DESCRIPTION

Suitable habitat onsite includes only a stand of willows (*Salix* sp.) and a few other riparian associated plant species that have grown around an unmaintained basin within the EWTF. Although this is a plant community that occurs in nature, in this case it is present only because of this constructed basin.

5.0 METHODS

The LBVI survey was conducted in appropriate habitat within the project site in accordance with the survey protocol for that species (USFWS 2001). The habitat was surveyed by a single biologist in a single morning. In accordance with the survey protocol, each area was surveyed eight times. Each survey was at least 10 days apart, as required by the protocol. Surveys were conducted by Wood senior biologist John F. Green. During each survey Green walked slowly through or adjacent to any potential habitat looking and listening for LBVIs. All surveys were conducted between 14 May and 29 July. Weather during all LBVI surveys was favorable for detection of the species. The table below contains survey variables. All vertebrate species detected during Wood's 2019 surveys were recorded in field notes and are listed in Appendix I below.

SURVEY VARIABLES

Date (2019)	Biologist	Time (PDT)	Temperature (°F)	Wind (mph)	Cloud Cover (%)
14 May	Green	0650-0750	64-62	1-3	100
24 May	Green	0705-0755	53-54	0-2	0-5
3 June	Green	0700-0745	59-60	0-4	100
13 June	Green	0705-0740	65	0-3	100
24 June	Green	0710-0740	65-66	0-1	100
8 July	Green	0710-0740	64-65	0-1	100
18 July	Green	0720-0800	66-69	0-2	0
29 July	Green	0705-0740	67-68	0-1	25

Abbreviations: PDT = Pacific Daylight Time, °F = degrees Fahrenheit, mph = miles per hour

6.0 RESULTS

6.1 Least Bell's Vireo Detections

No LBVI were detected. It is Wood's conclusion that no LBVIs were present onsite during the 2019 breeding season.

6.2 General Survey Results

Fifty-five (55) bird species were detected during the 2019 surveys conducted for this project (see appendix). Also included in the appendix are one species of reptile and four species of mammals which were detected during the surveys.

7.0 REFERENCES AND LITERATURE CITED

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Eastside Water Treatment Facility and Brineline Project
Focused Survey for the Least Bell's Vireo
July 2019

APPENDIX
VERTEBRATE SPECIES LIST

VERTEBRATE ANIMALS LIST

This list reports only vertebrate animal species observed during survey visits for this project. Other species may have been overlooked or undetectable due to their activity patterns. Nomenclature and taxonomy for fauna observed on site follows the California Bird Records Committee Official California Checklist (2019) for birds and CDFW (2016) for herpetofauna and mammals.

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 - sp. Identified only to genus; species unknown (plural = spp.)
-

REPTILES

Phrynosomatidae

Sceloporus occidentalis

Spiny Lizards

western fence lizard

BIRDS

Anatidae

Branta canadensis

Spatula cyanoptera

Anas americana

Anas platyrhynchos

Ducks, Geese, and Swans

Canada goose

cinnamon teal

American wigeon

mallard

Columbidae

*Columba livia**

*Streptopelia decaocto**

Zenaida macroura

Pigeons and Doves

rock pigeon

Eurasian collared-dove

mourning dove

Apodidae

Aeronautes saxatalis

Swifts

white-throated swift

Trochilidae

Calypte anna

Selasphorus sasin

Hummingbirds

Anna's hummingbird

Allen's hummingbird

Rallidae

Fulica americana

Rails, Gallinules, and Coots

American coot

Recurvirostridae

Himantopus mexicanus

Stilts and Avocets

black-necked stilt

Charadriidae

Charadrius vociferus

Lapwings and Plovers

killdeer

Scolopacidae

Numenius americanus

Sandpipers, Phalaropes, and Allies

long-billed curlew

Laridae

Larus californicus

Ardeidae

Ardea herodias

Ardea alba

Bubulcus ibis

Threskiornithidae

*Plegadis chihi***

Cathartidae

Cathartes aura

Accipitridae

*Accipiter cooperii***

Buteo jamaicensis

Strigidae

*Athene cunicularia***

Falconidae

Falco sparverius

*Falco peregrinus***

Tyrannidae

Myiarchus cinerascens

Tyrannus vociferus

Tyrannus verticalis

*Empidonax traillii***

Sayornis nigricans

Sayornis saya

Corvidae

Corvus brachyrhynchos

Corvus corax

Hirundinidae

Hirundo rustica

Aegithalidae

Psaltirparus minimus

Troglodytidae

Troglodytes aedon

Thryomanes bewickii

Turdidae

Catharus ustulatus

Mimidae

Mimus polyglottos

Gulls, Terns, and Skimmers

California gull

Hérons and Egrets

great blue heron

great egret

cattle egret

Ibises and Spoonbills

white-faced ibis

New World Vultures

turkey vulture

Hawks and Relatives

Cooper's hawk

red-tailed hawk

Typical Owls

burrowing owl

Caracaras and Falcons

American kestrel

peregrine falcon

Tyrant Flycatchers

ash-throated flycatcher

Cassin's kingbird

western kingbird

willow flycatcher

black phoebe

Say's phoebe

Jays, Crows, Ravens, Magpies

American crow

common raven

Swallows

barn swallow

Long-tailed Tits and Bushtits

bushtit

Wrens

house wren

Bewick's wren

Thrushes

Swainson's thrush

Mockingbirds, Thrashers, and Allies

northern mockingbird

Sturnidae

*Sturnus vulgaris**

Passeridae

*Passer domesticus**

Fringillidae

Haemorhous mexicanus

Spinus psaltria

Passerelliidae

Passerculus sandwichensis

Melospiza melodia

Zonotrichia leucophrys

Icteridae

Sturnella neglecta

Agelaius phoeniceus

Molothrus ater

Euphagus cyanocephalus

Quiscalus mexicanus

Parulidae

*Setophaga petechia***

Setophaga coronata

Cardellina pusilla

Cardinalidae

Passerina caerulea

MAMMALS

Leporidae

Sylvilagus audubonii

Geomyidae

Thomomys bottae

Sciuridae

Otospermophilus beecheyi

Canidae

Canis latrans

Starlings

European starling

Old World Sparrows

house sparrow

Finches

house finch

lesser goldfinch

Towhees, New World Sparrows

savannah sparrow

song sparrow

white-crowned sparrow

Blackbirds, Meadowlarks, Orioles

western meadowlark

red-winged blackbird

brown-headed cowbird

Brewer's blackbird

great-tailed grackle

Wood-Warblers

yellow warbler

yellow-rumped warbler

Wilson's warbler

Cardinals and Allies

blue grosbeak

Rabbits and Hares

Audubon's (desert) cottontail

Pocket Gophers

Botta's pocket gopher

Squirrels

California ground squirrel

Foxes, Wolves and Relatives

coyote

APPENDIX F

JURISDICTIONAL DELINEATION REPORT

**CHINO BRINELINE PROJECT
DELINEATION OF JURISDICTIONAL WATERS**



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22 November 2019

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Acronyms and abbreviations

Wood	Wood Environment and Infrastructure, Inc.
AMSL	above mean sea level
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
EP	edge of pavement
EPA	Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GIS	Geographic Information System
IP	Individual Permit
NEPA	National Environmental Policy Act
NL	not listed
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OBL	obligate
OHWM	ordinary high-water mark
Rapanos	Rapanos v. U.S. and Carabell v. U.S.
RPW	relatively permanent waterway
RWQCB	Regional Water Quality Control Board
SWANCC	Solid Waste Agency of Northern Cook County v. USACE
TNW	traditionally navigable waterway
UPL	upland
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture, Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
WSC	Waters of the State of California
WUS	Waters of the United States

1.0 INTRODUCTION

At the request of Albert A. Webb Associates (Webb), Wood Environment & Infrastructure Solutions, Inc. (Wood) conducted a jurisdictional assessment for the Chino Brineline Project (project) and its alternative. The biological study area (BSA) for this assessment includes the project site plus a 100-foot buffer around it and is generally located in portions of the cities of Chino and Ontario in San Bernardino County, California (see Figure 1).

This report presents regulatory framework, methods, and results of a delineation of jurisdictional waters, wetlands, and associated riparian habitat potentially impacted by the project. The purpose of the delineation is to determine the extent of state and federal jurisdiction within the project area potentially subject to regulation by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Porter Cologne Water Quality Control Act, and California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code.

1.1 Project Description

The proposed project includes an expansion of the treatment capacity of the Eastside Water Treatment Facility (EWTF). Instead of trucking the brine waste, the pipeline will connect directly to the Chino I Desalter Facility (CIDF) on the south side of Kimball Avenue, west of Euclid Avenue in the city of Chino, California. The project terminates at the EWTF on the south side of Schaefer Avenue, west of Bon View Avenue in the city of Ontario. A brine pipeline will be built to connect to the CIDF plant where the brine will connect directly to the Inland Empire Brine Line for treatment in OC and discharge to the ocean. The second part of the project is the four-mile dual six-inch brine pipeline from the EWTF to the CIDF. The pipeline would generally follow existing roads and previously disturbed areas, utilizing a route that would follow Kimball Avenue east from the CIDF, Euclid Avenue north, Merrill Avenue east, Bon View Avenue north, and Schaefer Avenue west to the EWTF. An alternative would have one of the dual pipelines leave Bon View at Edison Avenue, heading west, then north to the EWTF on conceptual Campus Avenue, an undeveloped street.

Project elevations range from approximately 590 feet (180 meters) above mean sea level (amsl) at the CIDF to 755 feet (230 meters) amsl at the EWTF. Despite the elevational change, the slope is gentle with the project area appearing flat. The alignment passes through a wide variety of land uses including agriculture, residential, commercial and industrial. However, the proposed project will primarily be in agricultural areas, such as dairy farms.

1.2 Project Location

The proposed project (Project) is located in portions of the cities of Chino and Ontario in San Bernardino County, California (see Figure 1). The project site is located south of State Route (SR) 60, north of SR-91, and east of SR-71. The project crosses areas mapped on two different United States Geologic Service (USGS) 7.5-minute topographic quadrangle maps (see Figure 2): Prado Dam and Ontario, CA. The geographic coordinates near the middle of the study area are 33.982893° North latitude and -117.650477 ° West longitude.

2.0 REGULATORY FRAMEWORK

2.1 U.S. Army Corps of Engineers

The USACE regulates the discharge of dredged or fill material in waters of the United States (WUS) pursuant to Section 404 of the CWA.

2.1.1 Waters of the U.S.

CWA regulations (33 CFR 328.3(a)) define WUS as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as WUS under the definition;
5. Tributaries of WUS;
6. The territorial seas;
7. Wetlands adjacent to WUS (other than waters that are themselves wetlands).

The USACE delineates non-wetland waters in the Arid West Region by identifying the ordinary high-water mark (OHWM) in ephemeral and intermittent channels (USACE 2008a). The OHWM is defined in 33 CFR 328.3(e) as:

“...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.”

Identification of OHWM involves assessments of stream geomorphology and vegetation response to the dominant stream discharge. Determining whether any non-wetland water is a jurisdictional WUS involves further assessment in accordance with the regulations, case law, and clarifying guidance as discussed below.

2.1.2 Wetlands and Other Special Aquatic Sites

Wetlands are defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

Special aquatic sites are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region. Special aquatic sites include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes. They are defined in 40 CFR 230 Subpart E.

2.1.3 Supreme Court Decisions

2.1.3.1 Solid Waste Agency of Northern Cook County

On January 9, 2001, the Supreme Court of the United States issued a decision on Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers, et al. with respect to whether the USACE could assert jurisdiction over isolated waters. The Solid Waste Agency of North Cook County (SWANCC) ruling stated that the USACE does not have jurisdiction over “non-navigable, isolated, intrastate” waters.

2.1.3.2 Rapanos/Carabell

In the Supreme Court cases of Rapanos v. United States and Carabell v. United States (herein referred to as Rapanos), the court attempted to clarify the extent of USACE jurisdiction under the CWA. The nine Supreme Court justices issued five separate opinions (one plurality opinion, two concurring opinions, and two dissenting opinions) with no single opinion commanding a majority of the Court. In light of the Rapanos decision, the USACE will assert jurisdiction over a traditional navigable waterway (TNW), wetlands adjacent to TNWs, non-navigable tributaries of TNWs that are a relatively permanent waterway (RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months) and wetlands that directly abut such tributaries. The USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a TNW: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not RPWs, and wetlands adjacent to but that do not directly abut a non-navigable RPW.

Flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary indicate whether they significantly affect the chemical, physical and biological integrity of downstream TNWs. Analysis of potentially jurisdictional streams includes consideration of hydrologic and ecologic factors. The consideration of hydrological factors includes volume, duration, and frequency of flow, proximity to traditional navigable waters, size of watershed, average annual rainfall, and average annual winter snow

pack. The consideration of ecological factors also includes the ability for tributaries to carry pollutants and flood waters to a TNW, the ability of a tributary to provide aquatic habitat that supports a TNW, the ability of wetlands to trap and filter pollutants or store flood waters, and maintenance of water quality.

2.1.4 2015 Clean Water Rule

The Obama administration issued the Clean Water Rule in 2015 in order to resolve jurisdictional ambiguity resulting from previous Supreme Court decisions (i.e. SWANNC, Rapanos). On June 22, 2015, the USACE and EPA published the *Clean Water Rule: Definition of "Waters of the United States"; Final Rule* (40 CFR Parts 110, 112, 116, 117, 122, 230, 232, 300, 302, and 401). The Clean Water Rule was put on hold by federal injunction in 2015 but was reinstated in California in August 2018. The Clean Water Rule finds waters to be jurisdictional under the CWA as summarized below:

1. Jurisdictional by Rule: TNWs, Interstate Waters, Territorial Seas, and Impoundments of Jurisdictional Waters.
2. Tributaries: Waters characterized by the presence of physical indicators of flow, including bed and bank and OHWM, that contribute flow directly or indirectly to a waters listed in 1) above.
3. Connected Waters: Adjacent or neighboring waters that have a significant nexus to waters listed in 1) above.
4. Other Waters: waters that, individually or as a group, significantly affect the chemical, physical, or biological integrity of waters listed in 1) above.

The Clean Water Rule was again put on hold by federal injunction in September 2019.

2.2 Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the CWA specifies that certification from the State is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. Through the Porter Cologne Water Quality Control Act, the RWQCB asserts jurisdiction over Waters of the State of California (WSC) which is generally the same as WUS, but may also include isolated waterbodies. The Porter Cologne Act defines WSC as "surface water or ground water, including saline waters, within the boundaries of the state".

2.3 California Department of Fish and Wildlife

The CDFW regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

"An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake (CDFW, 2015)."

Evaluation of CDFW jurisdiction followed guidance in the Fish and Game Code and A Review of Stream Processes and Forms in Dryland Watersheds. In general, under 1602 of the Fish and Game Code, CDFW jurisdiction extends to the maximum extent or expression of a stream on the landscape (CDFW, 2010). It has been the practice of CDFW to define a stream as “a body of water that flows perennially or episodically and that is defined by the area in a channel which water currently flows, or has flowed over a given course during the historic hydrologic course regime, and where the width of its course can reasonably be identified by physical or biological indicators” (Brady and Vyverberg, 2013). Thus, a channel is not defined by a specific flow event, nor by the path of surface water as this path might vary seasonally. Rather, it is CDFW’s practice to define the channel based on the topography or elevations of land that confine the water to a definite course when the waters of a creek rise to their highest point.

3.0 METHODS

Prior to conducting delineation fieldwork, the following literature and materials were reviewed:

-) Aerial photographs of the project site at a scale of 1:1800 to determine the potential locations of jurisdictional waters or wetlands;
-) USGS topographic map to determine the presence of any “blue line” drainages or other mapped water features;
-) USDA soil mapping data; and
-) USFWS NWI map to identify areas mapped as wetland features.

The study area encompasses the development area and adjacent area approximately 100 feet outside of the development area. The survey was conducted by Wood biologist Dale Hameister on March 11, 2019 from 12:30 to 15:35. Surveys consisted of walking the entire survey area and identifying potentially jurisdictional water features. Visual observations of vegetation types and changes in hydrology and culvert locations were used to locate areas for evaluation. Weather conditions during delineation fieldwork were conducive for surveying with temperature of 62 F, cloudy skies, and winds of 2-6 mph.

USACE regulated WUS, including wetlands, and RWQCB WSC were delineated according to the methods outlined in *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE, 2008a). The extent of WUS was determined based on indicators of an OHWM. The OHWM width was measured at points wherever clear changes in width occurred.

Federally regulated wetlands were identified based on the *Wetlands Delineation Manual* (USACE, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008b). Additional data was recorded to determine if an area fulfilled the wetland criteria parameters. Three criteria must be fulfilled in order to classify an area as a wetland under the jurisdiction of the USACE: 1) a predominance of hydrophytic vegetation, 2) the presence of hydric soils, and 3) the presence of wetland hydrology. Details of these criteria are described below:

3.1 Hydrophytic Vegetation.

The hydrophytic vegetation criterion is satisfied at a location if greater than 50% of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (USACE, 2008b). An OBL indicator status refers to plants that almost always occur in wetlands. A FACW indicator status refers to plants that usually occur in wetlands but may occur in non-wetlands. A FAC indicator status refers to plants that occur in wetlands and non-wetlands. Other wetland indicator statuses include facultative upland (FACU) which refers to plants that usually occur in non-wetlands, but may occur in wetlands, upland (UPL) for species that almost never occur in wetlands, and NL for plants that are not listed on the National Wetland Plant List. The wetland indicator status used for this report follows the 2013 National Wetland Plant List (Arid West Region) (Lichvar, 2014).

3.2 Hydric Soils

The hydric soil criterion is satisfied at a location if soils in the area can be inferred or observed to have a high groundwater table, if there is evidence of prolonged soil saturation, or if there are any indicators suggesting a long-term reducing environment in the upper part of the soil profile. Reducing conditions are most easily assessed using soil color. Soil colors were evaluated using the *Munsell Soil Color Charts* (Gretag/Macbeth, 2000). The USDA General Soil Map (Soil Survey Staff, 2019) was consulted to determine the soil associations and soil types mapped as occurring within the study areas.

3.3 Wetland Hydrology

The wetland hydrology criterion is satisfied at a location based upon conclusions inferred from field observations that indicate an area has a high probability of being inundated or saturated (flooded, ponded, or tidally influenced) long enough during the growing season to develop anaerobic conditions in the surface soil environment, especially the root zone (USACE, 1987 and 2008b).

The United States Fish and Wildlife Service (USFWS) is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. The USFWS has developed a series of maps, known as the National Wetlands Inventory (NWI) to show wetlands and deep-water habitat. This geospatial information is used by Federal, State, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither designed nor intended to produce legal or regulatory products; therefore, wetlands identified by the NWI program are not the same as wetlands defined by the USACE.

Vegetation nomenclature follows The Jepson Manual, Vascular Plants of California, 2nd Edition (Baldwin, 2012). When the Jepson Manual does not list a common name, common name nomenclature follows the United States Department of Agriculture, Natural Resources Conservation Service (USDA) Plants Database (USDA, 2019a).

CDFW jurisdiction was delineated by measuring the elevations of land that confine a stream to a definite course when its waters rise to their highest level and to the extent of associated riparian vegetation.

To determine jurisdictional boundaries, the surveyor walked the length of the drainage within the project area and recorded the centerline with a Trimble Juno global positioning system. The width of the drainage was determined by the OHWM and bankfull width measurements at locations where transitions were apparent. Other data recorded included bank height and morphology, substrate type, and all vegetation within the streambed and riparian vegetation adjacent to the streambed. Upon completion of fieldwork, all data collected in the field were incorporated into a Geographic Information System (GIS) along with basemap data. The GIS was then used to quantify the extent of jurisdictional waters.

4.0 ENVIRONMENTAL SETTING

4.1 Existing Conditions

The alignment passes through a wide variety of land uses, from undeveloped to agriculture and vacant lots and from residential to commercial and industrial areas but is dominated by dairy farms.

4.2 Hydrology

The average rainfall for the area is 16.9 inches per year (Western Regional Climate Center, 2019). Weather data was recorded nearby in the city of Ontario.

Rainfall and urban run-off generally flow in a southerly direction and are contained in stormwater channels or other man-made features to contain the flows and reduce erosion (Figure 3). This region generally has a number of agricultural drainage features and irrigation ponds. There are very few natural drainage features remaining in this area. Nearly all hydrology associated with rainfall and urban run-off flow to Prado Basin, which conveys flows downstream to the Santa Ana River (a relatively permanent water (RPW)), which eventually flows to the Pacific Ocean (a traditional navigable water (TNW)).

4.3 Vegetation

Vegetation communities within the drainage feature and in the adjacent areas are dominated by *Bromus (diandrus, hordeaceus) - Brachypodium distachyon* Herbaceous Semi-Natural Alliance (as classified by Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens., 2008. A Manual of California Vegetation, 2nd edition. California Native Plant Society, Sacramento, CA). No hydric vegetation was observed within the drainage features on-site.

4.4 Soils

The survey area contains five different soil mapping units (Figure 4):

-) Chino Silt Loam
-) Grangeville Fine Sandy Loam
-) Hilmar Loamy Fine Sand
-) Merrill Silt Loam
-) Tujunga Loamy Sand, 0 - 5 % Slopes

None of the on-site soil types occur on the National List of Hydric Soils (USDA, 2018b)

4.5 National Wetlands Inventory

The United States Fish and Wildlife Service (USFWS) is the principal Federal agency that provides information to the public on the extent and status of the Nation's wetlands. The USFWS has developed a series of maps, known as the National Wetlands Inventory (NWI) to show wetlands and deep-water habitat. This geospatial information is used by Federal, State, and local agencies, academic institutions, and private industry for management, research, policy development, education, and planning activities. The NWI program was neither

designed nor intended to produce legal or regulatory products; therefore, wetlands identified by the NWI program are not the same as wetlands defined by the USACE.

The NWI Mapper (USFWS, 2019) was accessed online to review mapped wetlands within the project study area (Figure 5). NWI wetlands occur near the study areas and are classified as a riverine, intermittent, streambed, seasonally flooded wetland (R4SBC) and a riverine, intermittent, streambed, intermittently flooded wetland (R4SBJ) as well as Palustrine based on Cowardin Classification (Cowardin et. al. 1979). The Palustrine areas are all temporary ponds associated with adjacent dairy operations. None of the Palustrine features are located within they proposed project area.

5.0 RESULTS

The study areas contain one (1) unnamed jurisdictional drainages identified as Drainage 1. The Jurisdictional Delineation Map (Figure 6-1 and 6-2) identifies the on-site jurisdictional drainage. Table 1 includes a list of the waterway identified in the project area, its jurisdictional status and area of jurisdiction, Cowardin classification, and Class of Aquatic Resources.

The USACE, in combination with the Environmental Protection Agency (EPA), when necessary, reserves the ultimate authority in making the final jurisdictional determination of WUS and the RWQCB reserves the ultimate authority in making the final jurisdictional determination of WSC. Additionally, CDFW has ultimate discretion in the determination of their jurisdiction.

5.1 Drainage 1

Drainage 1 is an ephemeral engineered roadside ditch and likely flows for less than 3 months per year and would therefore be classified as non-RPWs by the USACE. This drainage flows for approximately 1.9 miles (9,872 linear feet) within the survey area and then approximately 3.5 miles where the drainage flows into the Prado Reservoir. Dominate vegetation includes Wards weed (*Carrichtera annua*) (NI), ripgut brome (*Bromus diandrus*) (NI), Harding grass (*Phalaris aquatica*) (FACU), hare barley (*Hordeum murinum* ssp. *leporinum*) (NI), wild radish (*Raphanus sativus*) (NI). The substrate of a Drainage 1 is sandy loam with no organic streaking or other evidence of hydric soils or hard packed earth over concrete or riprap. The OHWM observed varied from 2-4 ft. wide.

The USACE is ultimately responsible for jurisdictional determinations, and this report has been prepared to provide the necessary information to assist the USACE with that determination. An Approved Jurisdictional Determination could be requested of the USACE to provide an analysis to determine if the on-site drainages have a “significant nexus” to the Prado Dam Reservoir and are therefore a jurisdictional WUS. Otherwise the project proponent can request a Preliminary Jurisdictional Determination in which the USACE assumes jurisdiction over the on-site drainages, and process permits accordingly (Appendix D).

Table 1: Summary of Jurisdictional Areas

Drainage	Non-Wetland WUS, Army Corps of Engineers Jurisdiction (acre)	Non-Wetland, WSC, and CDFW Jurisdiction (acre)	Average Width (feet)	Total Length (feet)	Latitude/ Longitude	Cowardin Class	Class of Aquatic Resource
1	0.68	0.68	3	9,872	34.978633/ -117.650455	R4SBC	non-section10- non wetland
Total	0.68	0.68	3	9,872	n/a	n/a	n/a

WUS – Waters of the United States

WSC – Waters of the State of California

CDFW – California Department of Fish and Wildlife

R4SBC – Riverine, intermittent, streambed, seasonally flooded wetland based on Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et. al., 1979).

6.0 IMPACTS TO JURISDICTIONAL AREAS

The proposed development plan will avoid all impacts to any of the on-site drainages and/or adjacent NWI wetlands. The pipeline will cross Drainage 1 at the intersection of Merrill Avenue and Euclid Avenue. The proposed construction will dig an open trench within the roadway and excavate below the existing culverts which convey Drainage 1 southward under Merrill Avenue. The pipeline will be installed below the existing culverts and the trench will be filled in. Impacts to jurisdictional areas are not anticipated at this time.

6.1 Permitting Requirements

The proposed project using the current design specifications will not incur temporary and permanent impacts to jurisdictional drainages and therefore, no permits are required.

If there are any changes to the project design that will potentially impact Drainage 1, permits and approval from USACE, CDFW, and RWQCB would be required.

7.0 RECOMENDATIONS

The following recommendations are intended to help the contractor ensure there are no impacts to adjacent jurisdictional drainages.

1. No fill or on-site sediment will be placed in the existing drainage.
2. On-site stockpiles of soil should utilize BMPs to reduce potential for erosion from wind or rainfall. These methods could include use of fiber rolls or straw wattles, visqueen, or soil surface treatment.
3. Orange construction fence, or similar material, should outline the project footprint to minimizing over-grading and minimize the overall construction footprint to the smallest area possible.

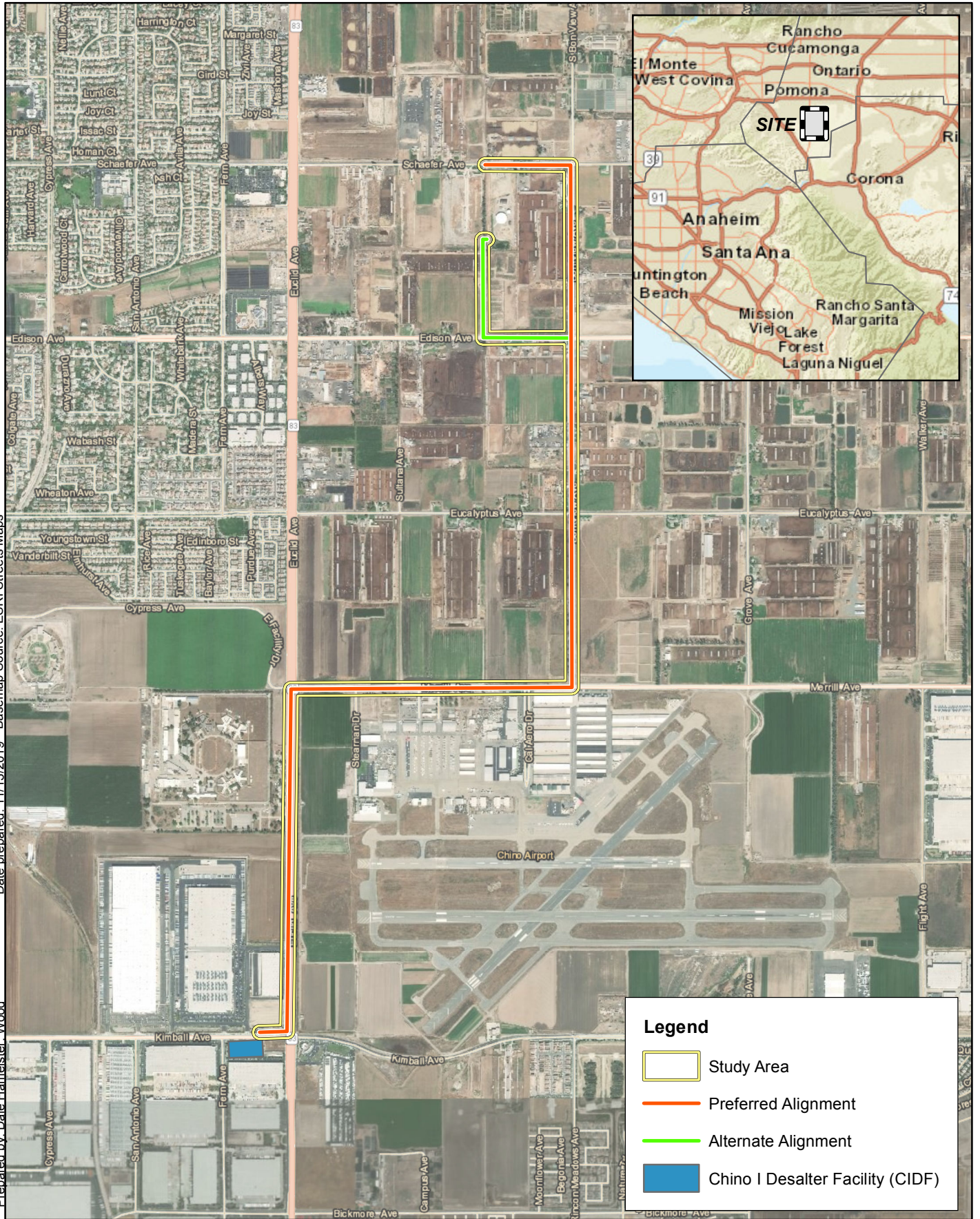
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APPENDIX A

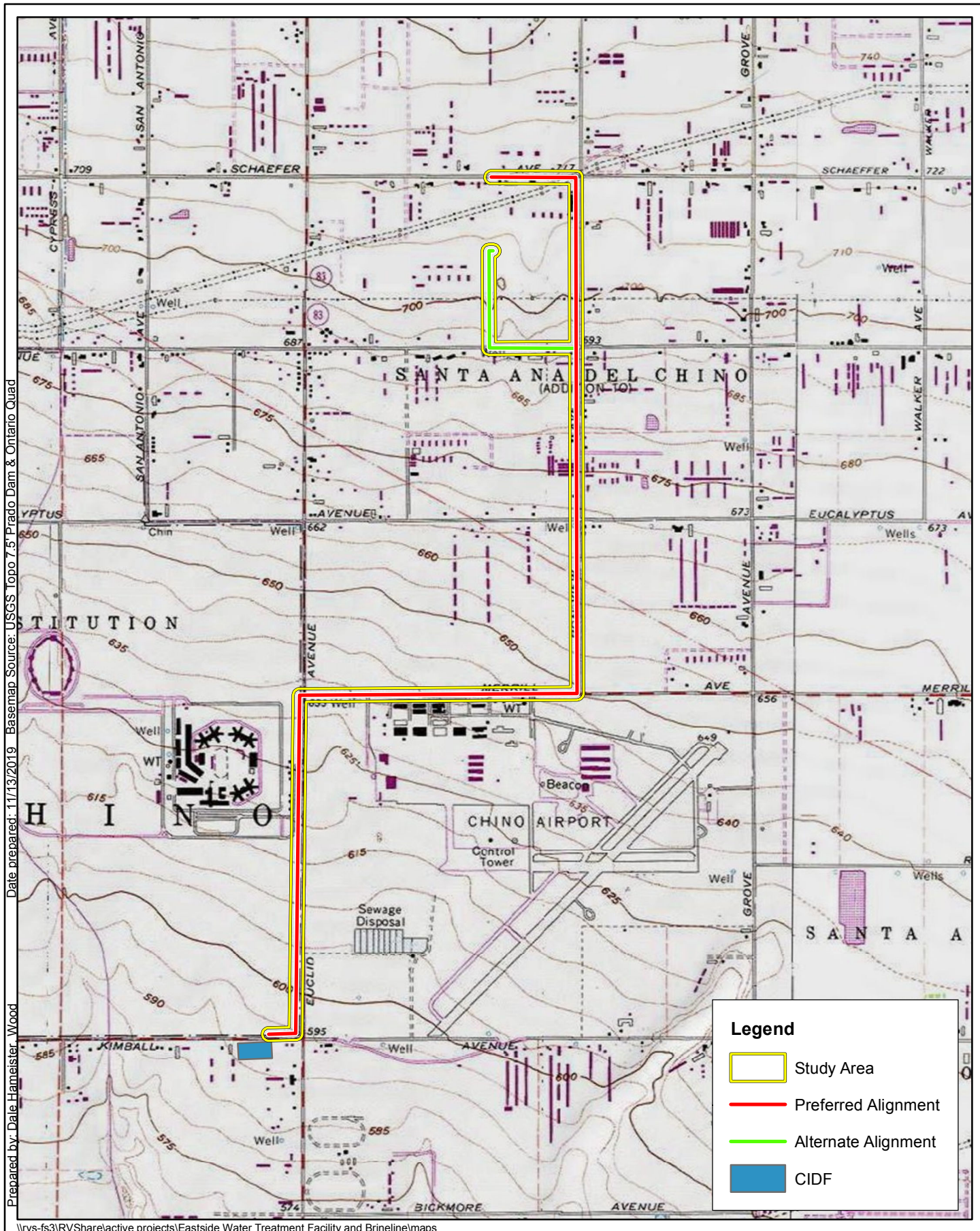
JURISDICTIONAL DELINEATION MAPS



0 1,000 2,000
Feet
1 inch = 2,000 feet



Regional and Vicinity Map
Chino Brineline Project

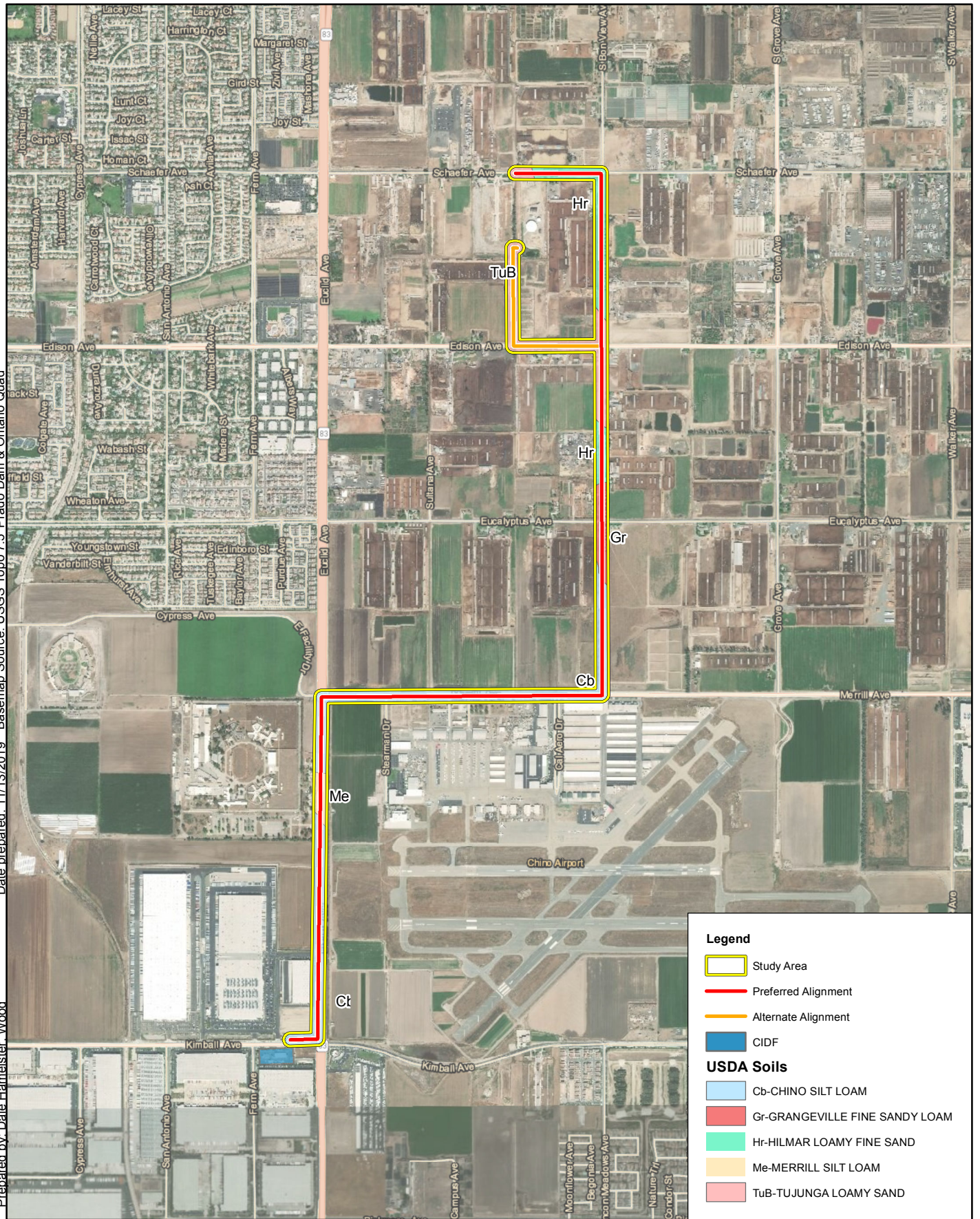


0 1,000 2,000
Feet
1 inch = 2,000 feet



Topographic Map
Chino Brineline Project

FIGURE
2

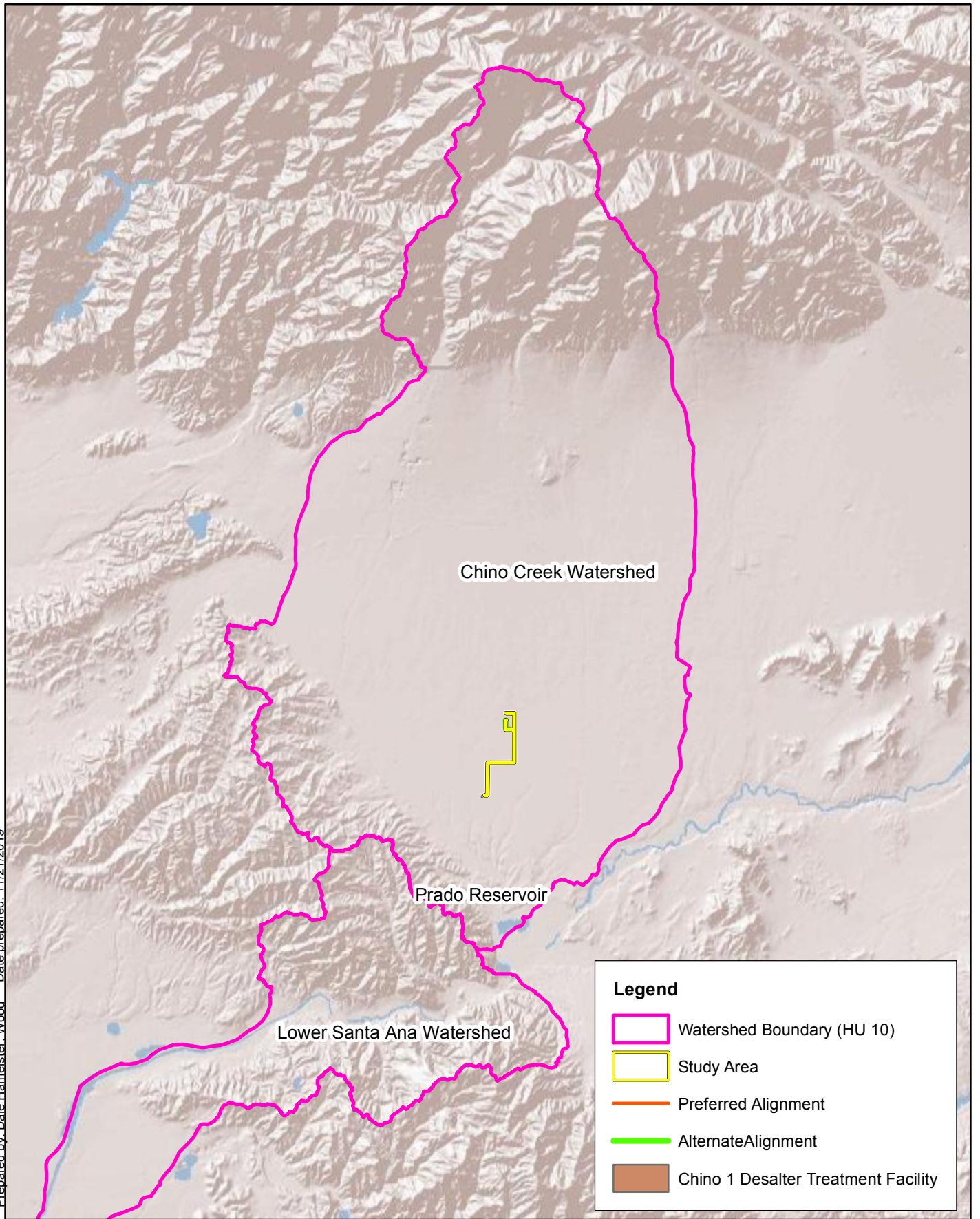


0 1,000 2,000
Feet
1 inch = 2,000 feet

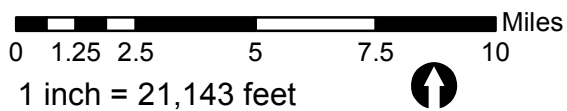


Soil Map
Chino Brineline Project

Prepared by: Dale Hameister, Wood Date prepared: 11/21/2019

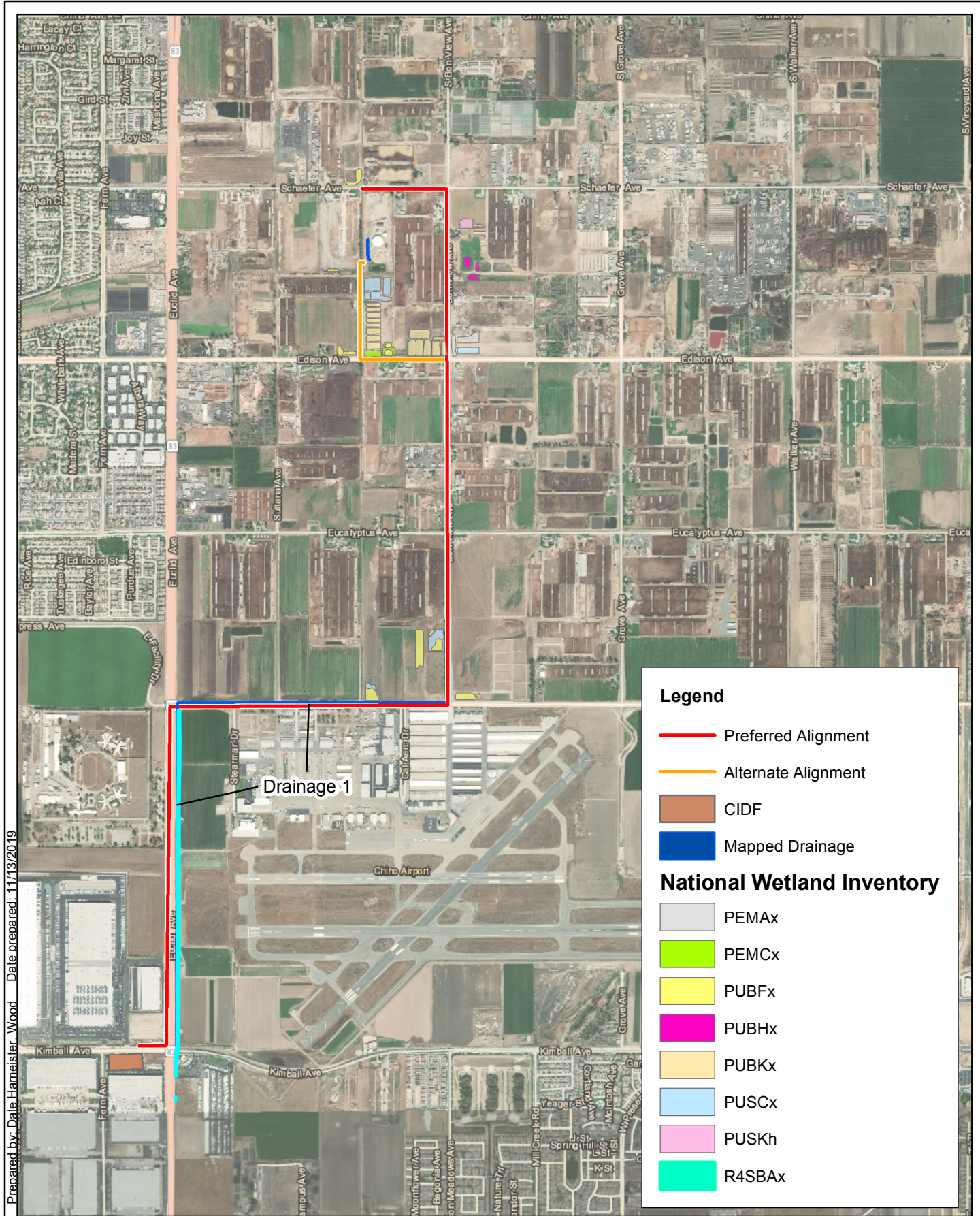


\\rvs-fs3\RVShare\active projects\Eastside Water Treatment Facility and Brineline\maps



Watershed Map
Chino Brineline Project

FIGURE



\\rvs-fs3\RVShare\active projects\Eastside Water Treatment Facility and Brineline\maps

0 1,000 2,000
Feet
1 inch = 2,000 feet

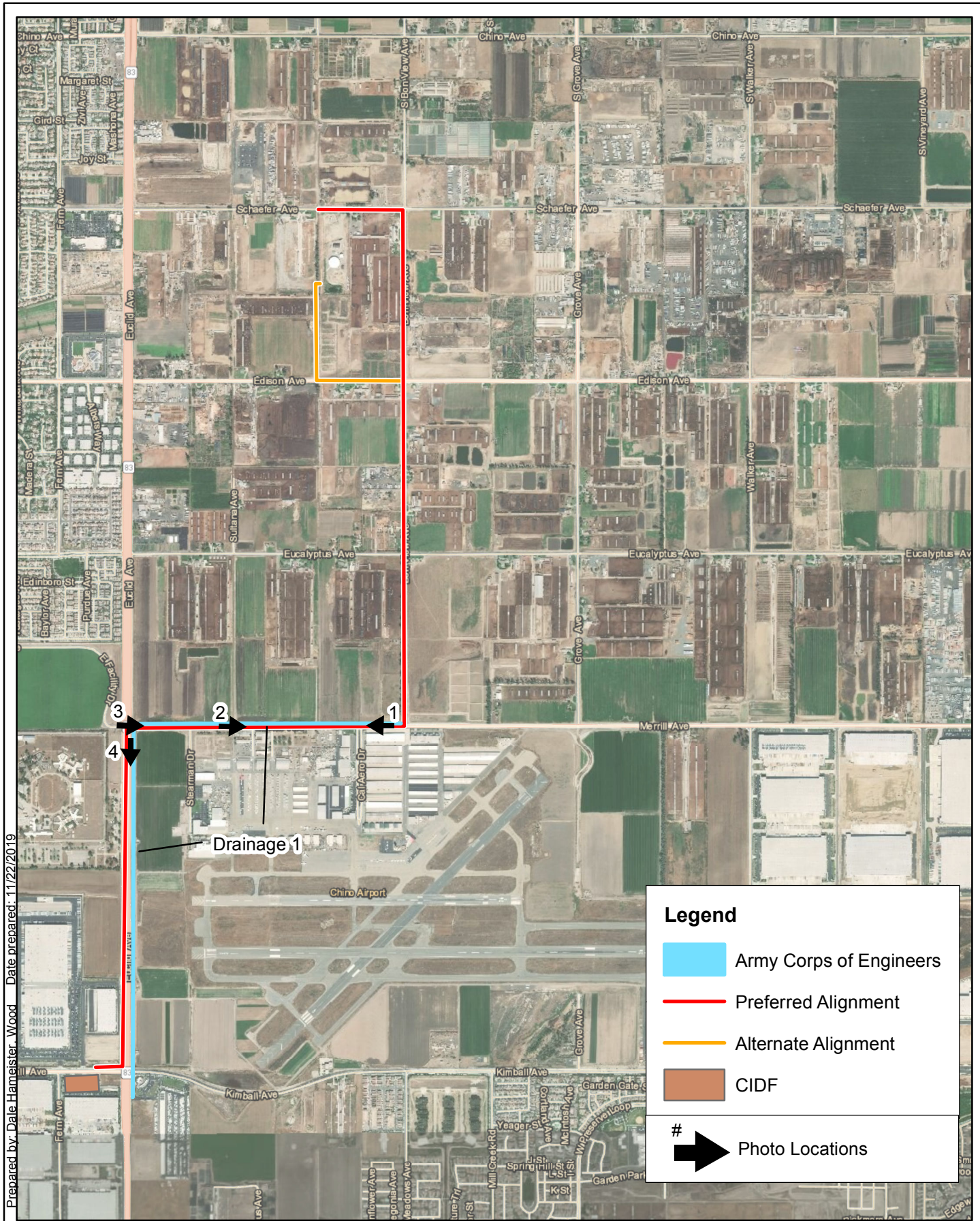


National Wetland Inventory and Jurisdictional Areas Map






Chino Brineline Project

FIGURE

5



Legend

-  Army Corps of Engineers
-  Preferred Alignment
-  Alternate Alignment
-  CIDF
-  # Photo Locations

0 1,000 2,000
Feet
1 inch = 2,000 feet

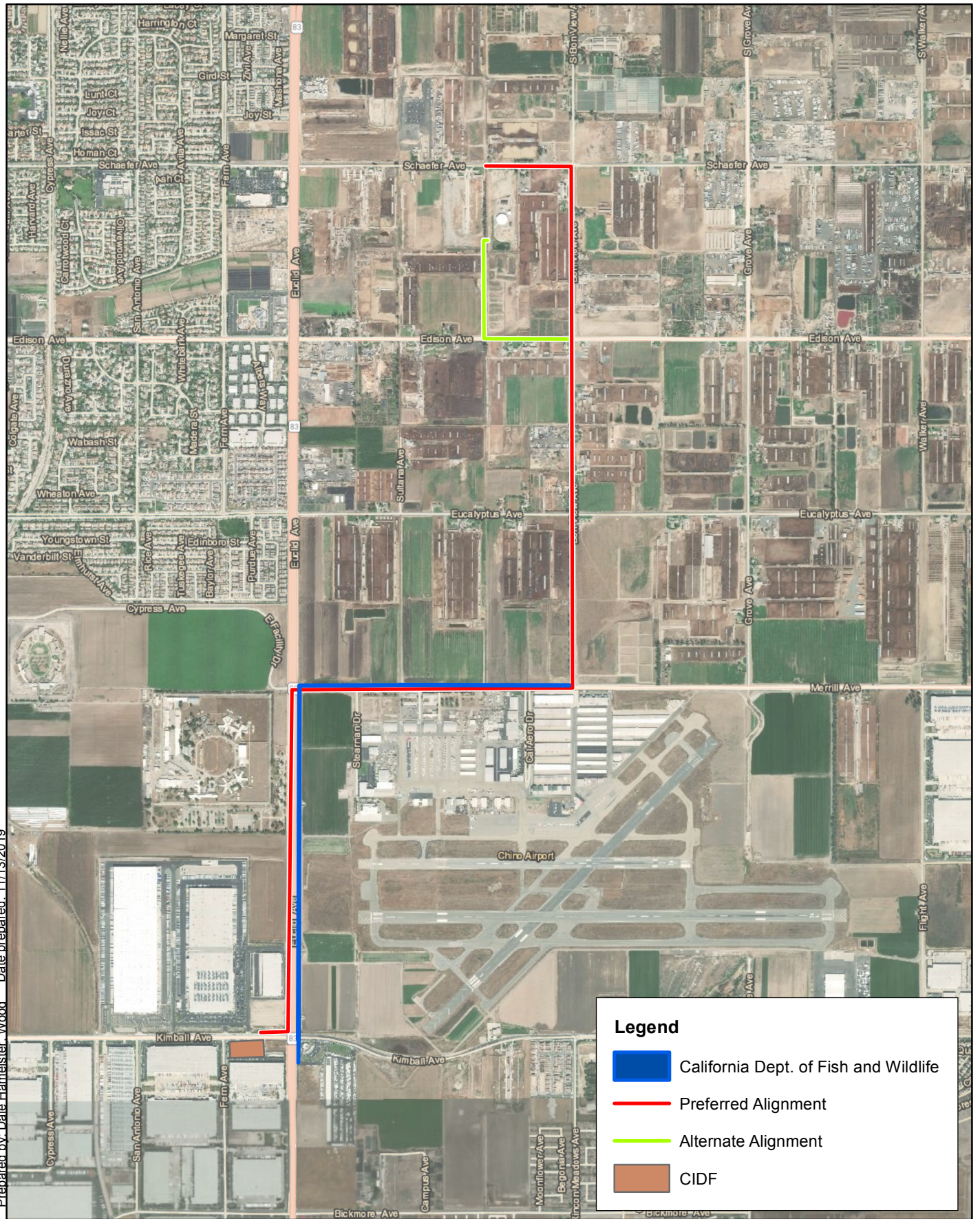


Jurisdictional Delineation Map

Chino Brinline Project

FIGURE

6-1



0 1,000 2,000
Feet
1 inch = 2,000 feet



Jurisdictional Delineation Map

Chino Brineline Project

FIGURE

6-2

APPENDIX B
SITE PHOTOGRAPHS



Photo 1. Drainage 1 looking west (downstream) on the north side of Merrill Ave.



Photo 2. Drainage 1 looking east (upstream) on the north side of Merrill Ave.



Photo 3. Drainage 1 looking east (upstream) near the corner of Merrill Ave and Euclid Avenue.



Photo 4. Looking south (downstream) on Euclid Ave showing Drainage 1 adjacent to Chino Airport.

APPENDIX C

VASCULAR PLANTS OBSERVED

PLANT SPECIES LIST

This list reports only plant species observed in the BSA during Woodsite visits for this project. Other species may have been overlooked or undetectable due to their seasonal growth patterns. Nomenclature and taxonomy for fauna observed on site follows the Jepson eFlora (2019). If no common name is listed in Jepson, the United States Department of Agriculture PLANTS database (2019) is followed.

SYMBOLS AND ABBREVIATIONS:

- * Non-native species
- ** **Sensitive species** (State or federally listed as endangered, threatened, or candidate; state species of special concern/watchlist/tracked; Bureau of Land Management and/or USFS sensitive)
- sp. Identified only to genus; species unknown (plural = spp.)

PLANTS OBSERVED	
ADOXACEAE	
<i>Sambucus nigra ssp. caerulea</i>	blue elderberry
ARECAEAE	
<i>Washingtonia</i> sp.*	fan palm
ASTERACEAE	
<i>Achillea millefolium</i>	common yarrow
<i>Cotula australis</i> *	Australian cotula
<i>Erigeron bonariensis</i> *	flax-leaved horseweed
<i>Erigeron canadensis</i>	horseweed
<i>Lactuca serriola</i> *	prickly lettuce
<i>Pseudognaphalium luteoalbum</i> *	Jersey cudweed
<i>Sonchus asper ssp. asper</i> *	prickly sow thistle
<i>Taraxacum officinale</i> *	common dandelion
<i>Verbesina encelioides ssp. exauriculata</i> *	golden crownbeard
<i>Xanthium strumarium</i>	cocklebur
BORAGINACEAE	
<i>Amsinckia</i> cf. <i>menziesii</i>	small flowered fiddleneck
BRASSICACEAE	
<i>Capsella bursa-pastoris</i> *	shepherd's purse
<i>Carrichtera annua</i> *	Wards weed
<i>Hirschfeldia incana</i> *	shortpod mustard
<i>Raphanus sativus</i> *	radish
<i>Sisymbrium irio</i> *	London rocket

CHENOPODIACEAE	
<i>Chenopodium</i> cf. <i>album</i> *	lamb's quarters
<i>Kochia</i> (<i>Bassia</i>) <i>scoparia</i> *	burningbush
<i>Salsola</i> <i>tragus</i> *	Russian thistle
CYPERACEAE	
<i>Schoenoplectus californicus</i>	southern bulrush
EUPHORBIACEAE	
<i>Ricinus communis</i> *	castorbean
FABACEAE	
<i>Medicago lupulina</i> *	black medick
<i>Parkinsonia aculeata</i> *	<i>Mexican palo verde</i>
<i>Trifolium repens</i> *	white clover
GERANIACEAE	
<i>Erodium cicutarium</i> *	redstem filaree
JUNCACEAE	
<i>Juncus bufonius</i>	toad rush
MALVACEAE	
<i>Malva parviflora</i> *	cheeseweed
MYRSINACEAE	
<i>Lysimachia arvensis</i> *	scarlet pimpernel
MYRTACEAE	
<i>Eucalyptus camaldulensis</i> *	Red River gum
PLANTAGINACEAE	
<i>Plantago major</i> *	common plantain
POACEAE	
<i>Bromus catharticus</i> *	rescuegrass
<i>Bromus diandrus</i> *	ripgut grass
<i>Cynodon dactylon</i> *	Bermuda grass
<i>Hordeum murinum</i> ssp. <i>leporinum</i> *	hare barley
<i>Phalaris aquatica</i> *	Harding grass
<i>Poa annua</i> *	annual blue grass
<i>Schismus barbatus</i> *	common Mediterranean grass
POLYGONACEAE	
<i>Persicaria</i> cf. <i>lapathifolia</i>	willow weed
<i>Polygonum aviculare</i> *	knotweed
<i>Rumex crispus</i> *	curly dock
PORTULACACEAE	
<i>Portulaca oleracea</i> *	purslane
SALICACEAE	
<i>Salix laevigata</i>	red willow

SIMAROUBACEAE	
<i>Ailanthus altissima</i> *	tree of heaven
URTICACEAE	
<i>Urtica urens</i> *	dwarf nettle

APPENDIX D

USACE – ARID WEST JURISDICIONAL DELINEATION FORM

WETLAND DETERMINATION DATA FORM - Arid West Region

Project Site: Chino Brineline Project City/County: San Bernardino Sampling Date: 4/16/2019

Applicant/Owner: Caltrans State: CA Sampling Point: _____

Investigator(s): Dale Hameister Section, Township, Range: _____

Landform (hillslope, terrace, etc): _____ Local relief (concave, convex, none): _____ Slope (%) _____

Subregion (LRR): LRR-C = California Lat: 33.983143 Long: -117.645111 Datum: NAD83

Soil Map Unit Name: _____ NWI Classification: NAD 83

Are Climatic / hydrological conditions on the site typical this time of Year? Yes: ☒ No: ☐ (If no, explain in Remarks.)

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are: Vegetation: ☐ Soil: ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	--

Remarks:
Large roadside ditch, adjacent to active dairy areas and Chino Airport along Merrell Ave and Euclid Ave

VEGETATION				Dominance Test worksheet:	
<u>Tree Stratum</u> (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Number of Dominant Species That are OBL FACW, or FAC:	<u>0</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species Across all Strata:	<u>1</u> (B)
2. _____	_____	_____	_____	Percent of Dominant Species That are OBL, FACW, or FAC:	<u>0.0%</u> (A/B)
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
Total Cover:	_____				
<u>Sapling/Shrub Stratum</u>				Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of:	Multiply by
2. _____	_____	_____	_____	OBL species <u>0</u>	x 1 = <u>0</u>
3. _____	_____	_____	_____	FACW species <u>0</u>	x 2 = <u>0</u>
4. _____	_____	_____	_____	FAC species <u>0</u>	x 3 = <u>0</u>
5. _____	_____	_____	_____	FACU species <u>5</u>	x 4 = <u>20</u>
Total Cover:	_____			UPL species <u>35</u>	x 5 = <u>175</u>
<u>Herb Stratum</u>				Column Totals: <u>40</u>	(A) <u>195</u> (B)
1. Bromus diandrus	<u>20</u>	<u>Yes</u>	<u>UPL</u>	Prevalence Index = B/A = <u>4.88</u>	
2. Hordeum murinum ssp. leporinum	<u>5</u>	<u>No</u>	<u>UPL</u>		
3. Carrichtera annua	<u>5</u>	<u>No</u>	<u>UPL</u>		
4. Raphanus sativus	<u>5</u>	<u>No</u>	<u>UPL</u>		
5. Phalaris aquatica	<u>5</u>	<u>No</u>	<u>FACU</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
Total Cover:	<u>40</u>				
<u>Woody Vine Stratum</u>					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
Total Cover:	_____				
% Bare Ground in Herb Stratum: <u>80</u>	% Cover of Biotic Crust: _____				

Hydrophytic Vegetation Indicator:

☐ Dominance Test is >50%

☐ Prevalence Index is 3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicator if hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point:

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

² Location: PL=Pore Lining, RC=Root Channel, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted)

Indicators for Problematic Hydric Soils³:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

- ☐ 1 cm Muck (A9) (**LRR C**)

☐ 2 cm Muck (A10) (**LRR B**)

☐ Reduced Vertic (F18)

☐ Red Parent Material (TF2)

☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches):

Hydric Soil Present?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation on Aerial Imagery (B7)
- ☐ Water-stained Leaves (B8)
- ☐ Biotic Crust (B10)

- ☐ Aquatic Invertebrates (B11)
- ☐ Crayfish Burrows (B12)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soil (C6)
- ☐ Muck Surface (C7)
- ☐ Saturation on Aerial Imagery (C8)
- ☐ Shallow Aquitard (D4)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more is required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B9)
- ☐ Dry Season Water Table (C3)
- ☐ Salt Deposits (C5)
- ☐ Mud Casts (C9)
- ☐ FAC-Neutral Test (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present?

Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX E

ORDINARY HIGH-WATER MARK FORM

Project: Chino Brineline Project

Project Number: 1955400763

Stream:

Investigator(s): Dale Hameister

Date: April 16, 2019

Town: Chino

Photo begin file#: 0364

Time: 13:47

State: CA

Photo end file#: 0384

Y ☒ N ☐ Do normal circumstances exist on the site?

Y ☒ N ☐ Is the site significantly disturbed?

Type: N/A

Location Details: Adjacent to Merrill Ave and Euclid Ave

Projection: State Plane

Datum: NAD 83

Coordinates: 33.983143 N -117.645111 E

Notes: Large roadside ditch

Brief site description: Adjacent to active dairy areas and Chino Airport

Checklist of resources (if available):

☒ Aerial Photography: (Dates: 2011)

☒ Topographic maps: (Scale:)

☐ Geologic Maps

☒ Vegetation maps

☒ Soil Maps

☐ Rainfall/precipitation maps

☐ Existing Delineation(s) for site

☒ Global positioning system (GPS)

☐ Other Studies

☐ Stream gage data

Gage number:

Period of record:

☐ Clinometer / level

☐ History of recent effective discharges

☐ Results of flood frequency analysis

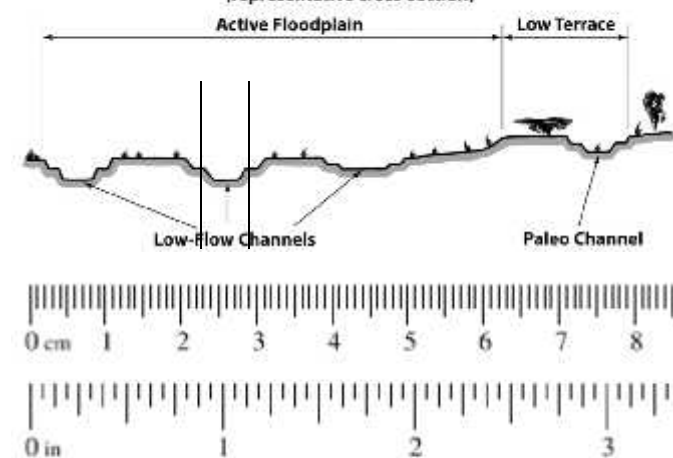
☐ Most recent shift-adjusted rating

☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

The dominant Wentworth size class that imparts a characteristic texture to each of a channel cross-section is recorded in the average sediment texture filed under the characteristics section for the zone of interest.

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.58	64	Cobble	
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	Sand
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	Silt
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	
1/64 0.00031	0.0078	Very fine silt	Mud
1/128 0.00015	0.0039	Clay	

Hydrogeomorphic Floodplain Units - Intermittent and Ephemeral Channel Forms (representative cross-section)



<input type="checkbox"/>	<p>Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in “Notes” above.</p>
<input type="checkbox"/>	<p>Locate the low-flow channel (lowest part of the channel). Record observations.</p> <p><u>Characteristics of the low-flow channel:</u></p> <p>Average sediment texture: <u>Sandy silt</u></p> <p>Total veg cover: <u>0</u> % Tree: <u>0</u> % Shrub: <u>0</u>% Herb: <u>40</u>%</p> <p><u>Community successional stage:</u></p> <p><input checked="" type="checkbox"/> NA <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)</p> <p><input type="checkbox"/> Early (herbaceous & seedlings) <input type="checkbox"/> Late (herbaceous, shrubs, mature trees)</p> <p>Dominant species present: <i>Bromus diandrus</i></p> <p>Other: <input type="checkbox"/> <i>Hordeum murinum</i> ssp. <i>leporinum</i></p> <p><input type="checkbox"/> <i>Carrichtera annua</i></p> <p><input type="checkbox"/> <i>Raphanus sativus</i></p> <p><input type="checkbox"/> <i>Phalaris aquatica</i></p>
<input type="checkbox"/>	<p>Walk away from the low-flow channel along cross-section. Record characteristics of the lowflow/ active floodplain boundary.</p> <p><u>Characteristics used to delineate the low-flow/active floodplain boundary:</u></p> <p><input checked="" type="checkbox"/> Change in total veg cover <input type="checkbox"/> Tree <input type="checkbox"/> Shrub <input checked="" type="checkbox"/> Herb</p> <p><input type="checkbox"/> Change in overall vegetation maturity</p> <p><input type="checkbox"/> Change in dominant species present</p> <p><input type="checkbox"/> Other <input type="checkbox"/> Presence of bed and bank</p> <p><input type="checkbox"/> Drift and/or debris</p> <p><input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Other: _____</p>
<input type="checkbox"/>	<p>Continue walking the channel cross-section. Record observations below.</p> <p><u>Characteristics of the active floodplain:</u></p> <p>Average sediment texture: <u>silty loam</u></p> <p>Total veg cover: <u>50</u> % Tree: <u>0</u> % Shrub: <u>20</u>% Herb: <u>30</u>%</p> <p><u>Community successional stage:</u></p> <p><input type="checkbox"/> NA <input type="checkbox"/> Mid (herbaceous, shrubs, saplings)</p> <p><input checked="" type="checkbox"/> Early (herbaceous & seedlings) <input type="checkbox"/> Late (herbaceous, shrubs, mature trees)</p> <p>Dominant species present:</p> <p>Other: <input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p>

<input type="checkbox"/>	<p>Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.</p> <p><u>Characteristics used to delineate the active floodplain/ low terrace boundary:</u></p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Change in average sediment texture <input type="checkbox"/> Change in total veg cover <input type="checkbox"/> Change in overall vegetation maturity <input type="checkbox"/> Change in dominant species present <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Tree <input type="checkbox"/> Shrub <input type="checkbox"/> Herb <input type="checkbox"/> Presence of bed and bank <input type="checkbox"/> Drift and/or debris <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____ </div> </div>
<input type="checkbox"/>	<p>Walk the active floodplain/low terrace boundary both upstream and downstream of the crosssection to verify that the indicators used to identify the transition are consistently associated the transition in both directions.</p> <p><u>Consistency of indicators used to delineate the active floodplain/low terrace boundary:</u></p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> Y <input type="checkbox"/> N <input type="checkbox"/> Change in average sediment texture Y <input type="checkbox"/> N <input type="checkbox"/> Change in total veg cover Y <input type="checkbox"/> N <input type="checkbox"/> Change in overall vegetation maturity Y <input type="checkbox"/> N <input type="checkbox"/> Change in dominant species present Y <input type="checkbox"/> N <input type="checkbox"/> Other: _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Tree <input type="checkbox"/> Shrub <input type="checkbox"/> Herb <input type="checkbox"/> Presence of bed and bank <input type="checkbox"/> Drift and/or debris <input type="checkbox"/> Other: _____ <input type="checkbox"/> Other: _____ </div> </div>
<input type="checkbox"/>	<p>If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.</p>
<input type="checkbox"/>	<p>Continue walking the channel cross-section. Record characteristics of the low terrace.</p> <p><u>Characteristics of the low terrace:</u></p> <p>Average sediment texture: _____</p> <p>Total veg cover: _____ % Tree: _____ % Shrub: _____ % Herb: _____ %</p> <p><u>Community successional stage:</u></p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> NA <input type="checkbox"/> Early (herbaceous & seedlings) <input type="checkbox"/> Other: _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ </div> <div style="width: 50%;"> <input type="checkbox"/> Mid (herbaceous, shrubs, saplings) <input type="checkbox"/> Late (herbaceous, shrubs, mature trees) </div> </div>
<input type="checkbox"/>	<p>If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.</p> <p><u>Active floodplain/low terrace boundary acquired via:</u></p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Mapping on aerial photograph <input type="checkbox"/> Digitized on computer </div> <div style="width: 50%;"> <input type="checkbox"/> GPS <input type="checkbox"/> Other: _____ </div> </div>