Natural Environment Study

Discussion of Biological Assessments, Habitat Impacts, & Project Mitigation

Thermal/Oasis Active Transportation Project

County of Riverside, California
District 8

ATPL-5956 (273)

March 2021

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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ATPL-5956 (273)

March 2021

Prepared By: Scott Salembier Date: 3/22/2021

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List of Abbreviations

BMPs	Best Management Practices
BSA	Biological Study Area
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CVCC	Coachella Valley Conservation Commission
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVWD	Coachella Valley Water District
CWA	Clean Water Act
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
FHWA	Federal Highways Administration
MBTA	Migratory Bird Treaty Act
IPaC	Information for Planning and Consultation
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
Project	Thermal/Oasis Active Transportation Project
RWQCB	Regional Water Quality Control Board
SWPPP	Storm Water Pollution Prevention Plan
U.S.	United States
USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USFWS	United States Fish and Wildlife Service
CVAG	Coachella Valley Association of Governments
WPCP	Water Pollution Control Program
SSC	Species of Special Concern

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Summary

The County of Riverside, in cooperation with the California Department of Transportation (Caltrans), proposes to construct approximately 14 miles of multi-function trail and sidewalk infrastructure in the communities of Thermal and Oasis in the eastern Coachella Valley, Riverside County. The general route is a multi-function trail loop that runs along 66th Avenue, Pierce Street, 74th Avenue and Harrison Street, with an additional segment extending north along Harrison Street to Echols Road and a sidewalk along Middleton Street between Harrison Street and 66th Avenue. An additional sidewalk would supplement the multi-function trail on the portion of 66th Avenue between Harrison Street and Tyler Street. Along a portion of 66th Avenue the trail alignment is anticipated to occupy a raised access path along an existing US Bureau of Reclamation (USBR) irrigation channel, operated by the Coachella Valley Water District (CVWD) outside of the road right of way.

This Natural Environment Study (NES) is a review and evaluation of the potential impacts to threatened, endangered, proposed listed or special status species and protected habitat resources as a result of the proposed Project. Field surveys were conducted within the Biological Study Area (BSA), which was defined as the proposed Project impact area and includes all areas necessary to accommodate the design and facilitate construction.

Literature research, habitat assessments, and biological surveys determined that three species of special concern through the California Department of Fish and Wildlife (CDFW) have the potential of occurring within the BSA: the burrowing owl (*Athene cunicularia*), the Couch's spadefoot (*Scaphiopus couchii*), and the western yellow bat (*Lasiurus xanthinus*). No special status species were observed during the biological survey; however, these species are considered to have a low to moderate potential to occur within the BSA based on nearby known occurrences and presence of suitable habitat within and directly adjacent to the BSA. The Project is not anticipated to cause take of these species, and avoidance and minimization measures will be incorporated into the Project design to ensure this.

Additionally, habitat assessments during biological surveys and habitats classified in the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) determined that there are no sensitive habitat communities within the BSA. Furthermore, avoidance, minimization and mitigation measures have been incorporated into the Project design to ensure that there are no impacts to natural communities within the BSA. With the implementation of these measures, the Project is not anticipated to cause permanent impacts to natural communities.

There are two jurisdictional water features that pass through the BSA; an irrigation canal that runs along 66th Avenue and a riverine channel that is parallel to 68th Avenue. The Project would have approximately 0.06 acres of temporary and 0.01 acres of permanent impacts to the 66th Avenue jurisdictional channels due to the construction of channel crossings, drainage improvements, fill, and staging. The Project would require regulatory permits for impacts to waters, including a §401 Clean Water Certification from the Colorado River Basin Regional Water Quality Control Board (RWQCB), a §404 permit from the United States Army Corps of Engineers (USACE), and a §1602 Streambed Alteration Agreement from CDFW.

Chapter 1 Introduction

This NES was prepared for the Thermal/Oasis Active Transportation Project (Project) located in the County of Riverside, California. The Project is located in the communities of Thermal and Oasis in the eastern Coachella Valley. (Figure 1. Project Vicinity and Figure 2. Project Location).

1.1 History

Thermal and Oasis are two un-incorporated areas of Riverside County, California. Historical aerials, dating back to the 1950's, show Thermal and Oasis primarily dominated by agricultural use (Historical Aerials 2020). Agricultural production remains the most prevalent industry in these un-incorporated, rural areas. Pedestrians and bicyclists in these areas currently used paved shoulder or unpaved areas adjacent to roadways as their path of travel. A multi-modal path is needed to accommodate travel of pedestrians and bicyclists.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the Thermal and Oasis Active Transportation Project is to:

- Accommodate and promote multi-modal mobility by creating an Americans with Disabilities Act (ADA)-compliant pedestrian/bicycle facility in the communities of Thermal and Oasis;
- Enhance pedestrian and bicycle safety in the project area by providing a separate multi-modal trail from vehicular traffic.

1.2.2 Need

Pedestrians and bicyclists use the paved shoulder or unpaved area directly adjacent to roadways within the project area as their path of travel in proximity to vehicular traffic. The Thermal and Oasis Active Transportation Project is needed because the transportation network in the predominantly rural, agricultural area, lacks consistent pedestrian or bicycle facilities.

1.3 Project Description

The County of Riverside, in cooperation with the California Department of Transportation (Caltrans), proposes to construct approximately 14 miles of multi-function trail and sidewalk infrastructure in the communities of Thermal and Oasis in the eastern Coachella Valley, Riverside County. The general route is a multi-function trail loop that runs along 66th Avenue, Pierce Street, 74th Avenue and Harrison Street, with an additional segment extending north along Harrison Street to Echols Road and a sidewalk along Middleton Street between Harrison Street and 66th Avenue. An additional sidewalk would supplement the multi-function trail on the portion of 66th Avenue between Harrison Street and Tyler Street (Figure 3. Project Features). Along a portion of 66th Avenue the trail alignment is anticipated to occupy a raised access path along an existing US Bureau of Reclamation (USBR) irrigation channel, operated by the Coachella Valley Water District (CVWD) outside of the road right of way. The trail may also be placed along a CVWD canal on top of the adjacent levee at the intersection of Fillmore Street and 66th Avenue to its connection on Pierce Street, pending approval from CVWD to utilize this access road for the trail alignment. The project area encompasses both the potential trail alignment along the CVWD levee access road and the area along 66th Avenue and Pierce Street in the event that the trail cannot be placed adjacent to the canal. Similarly, the project area extends along Middleton Street, south of Harrison Street in the event the sidewalk is extended along this area to provide additional access to this commercial and residential area.

The proposed multi-function trail is a paved 10-foot-wide path situated primarily within road right of way with a minimum 5-foot buffer from the adjacent travel lanes. The proposed concrete sidewalk will be 5-foot-wide with adjacent street-side curb constructed at the edge of the existing travel lane.

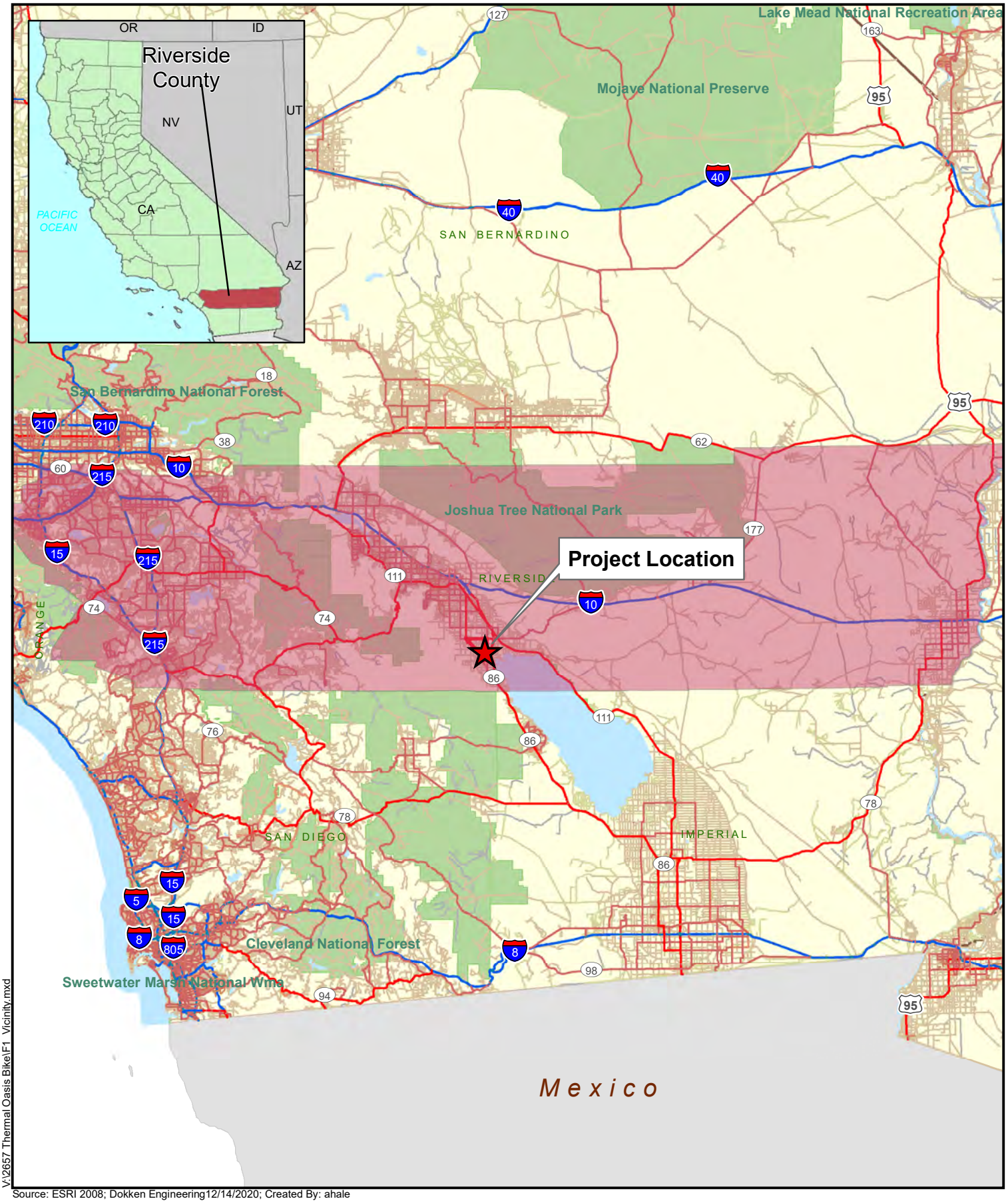
Several crossings will be required at intersecting streets and driveways along the multi-function trail route. All crossings will be at-grade and controlled in accordance with existing traffic control measures, unless specific safety concerns dictate otherwise. Although the preferred multi-function trail route is planned along the inside of the overall street loop to minimize arterial street crossings, it is anticipated that the alignment may shift outside the loop in places. Any street crossings will be at-grade and appropriate traffic control will be installed.

Multiple channel or stream crossings will be required for the multi-function trail to traverse existing irrigation channels and drainage paths. Whether by bridge, culvert extensions or low water crossings, hydraulic impact to the existing facilities will be minimized. Bridges and other elevated crossings will be light-duty and will avoid the use of piers within waterways.

Drainage improvements will be designed to maintain current drainage schemes. The current drainage is typically comprised of half-street cross fall runoff which will be collected between the roadway and the trail and conveyed past the trail via culverts or at-grade crossings. No regional drainage facilities are anticipated to be impacted and no significant new drainage facilities are expected to be constructed.

Most of the multi-function trail alignment along Harrison Street, Pierce Street, and 74th Avenue will require earth fill to raise the trails to elevations appropriate for public use. The alignment along 66th Avenue likely will require less fill material but is not anticipated to require significant soil removal. It is expected that the project will require a net import of soil material.

Relocation and/or modification of existing utilities may be required at various locations throughout the project, including Imperial Irrigation District (IID) electric facilities, Coachella Valley Water District (CVWD) water and sanitary sewer facilities, CVWD/United States Bureau of Reclamation (USBR) irrigation facilities, CVWD/Caltrans drainage facilities, Frontier Communications telephone facilities and Charter Communications cable facilities. In areas where existing pole line alignments are in close proximity to street rights of way, minor street alignment shifts may be necessary to avoid major pole line relocations.



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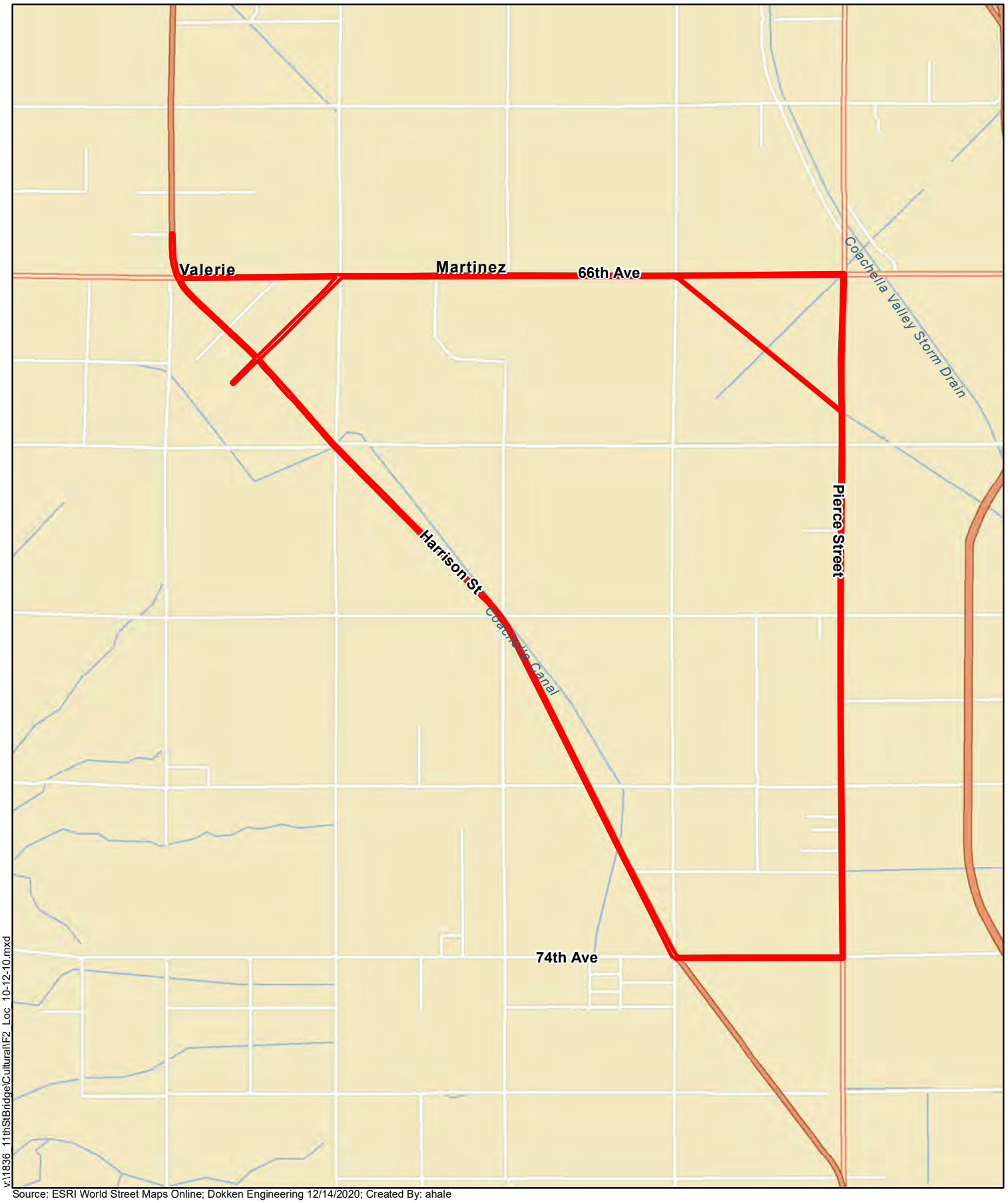
Source: ESRI 2008; Dokken Engineering12/14/2020; Created By: ahale

0 10 20 30 Miles

FIGURE 1
Project Vicinity

Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California



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Source: ESRI World Street Maps Online; Dokken Engineering 12/14/2020; Created By: ahale

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FIGURE 2
Project Location

Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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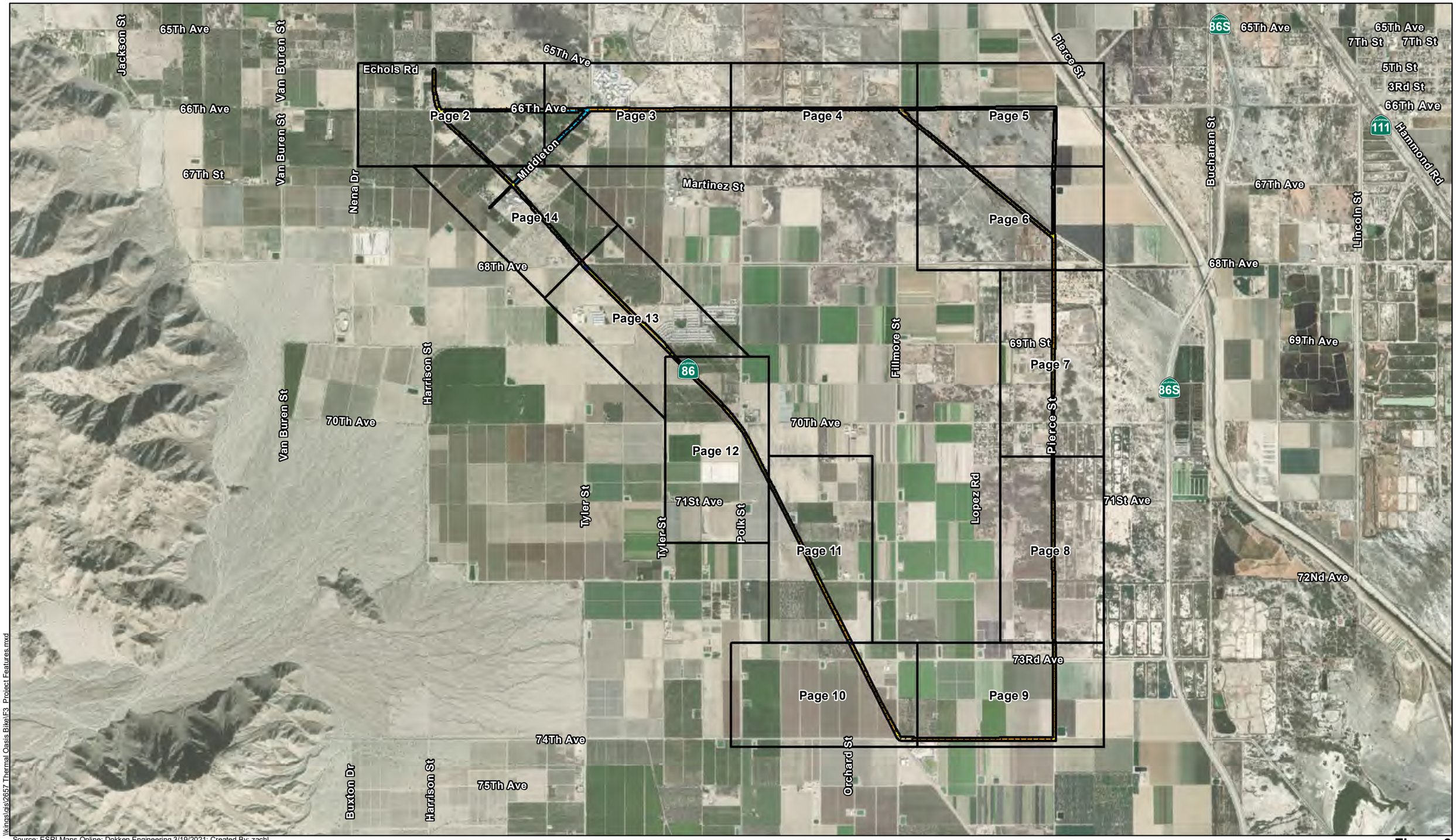

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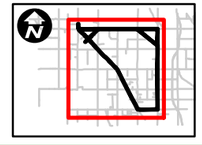
Source: ESRI Maps Online; Dokken Engineering 3/19/2021; Created By: zachl

1 inch = 3,000 feet

0 1,500 3,000 4,500 6,000 7,500 Feet

Project Area
Proposed Bridge
Proposed Asphalt Multi-Modal Trail (10 ft Wide)
Proposed Concrete Sidewalk (5 ft Wide)
Proposed Crosswalks
Proposed Striping



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Project Features
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Source: ESRI Maps Online; Dokken Engineering 3/19/2021; Created By: zachl

1 inch = 400 feet

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Project Area
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Proposed Crosswalks
Proposed Striping
Parcels

Figure 3
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Project Features
Thermal/Oasis Active Transportation Project
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Riverside County, California

65Th Ave

66Th Ave

Matchline - See Page 2

Matchline - See Page 4

Middleton

Tyler St

Martinez St

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Source: ESRI Maps Online; Dokken Engineering 3/19/2021; Created By: zachl

1 inch = 400 feet

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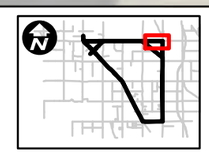

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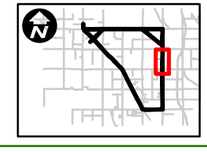

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Project Features
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Source: ESRI Maps Online; Dokken Engineering 3/19/2021; Created By: zachl

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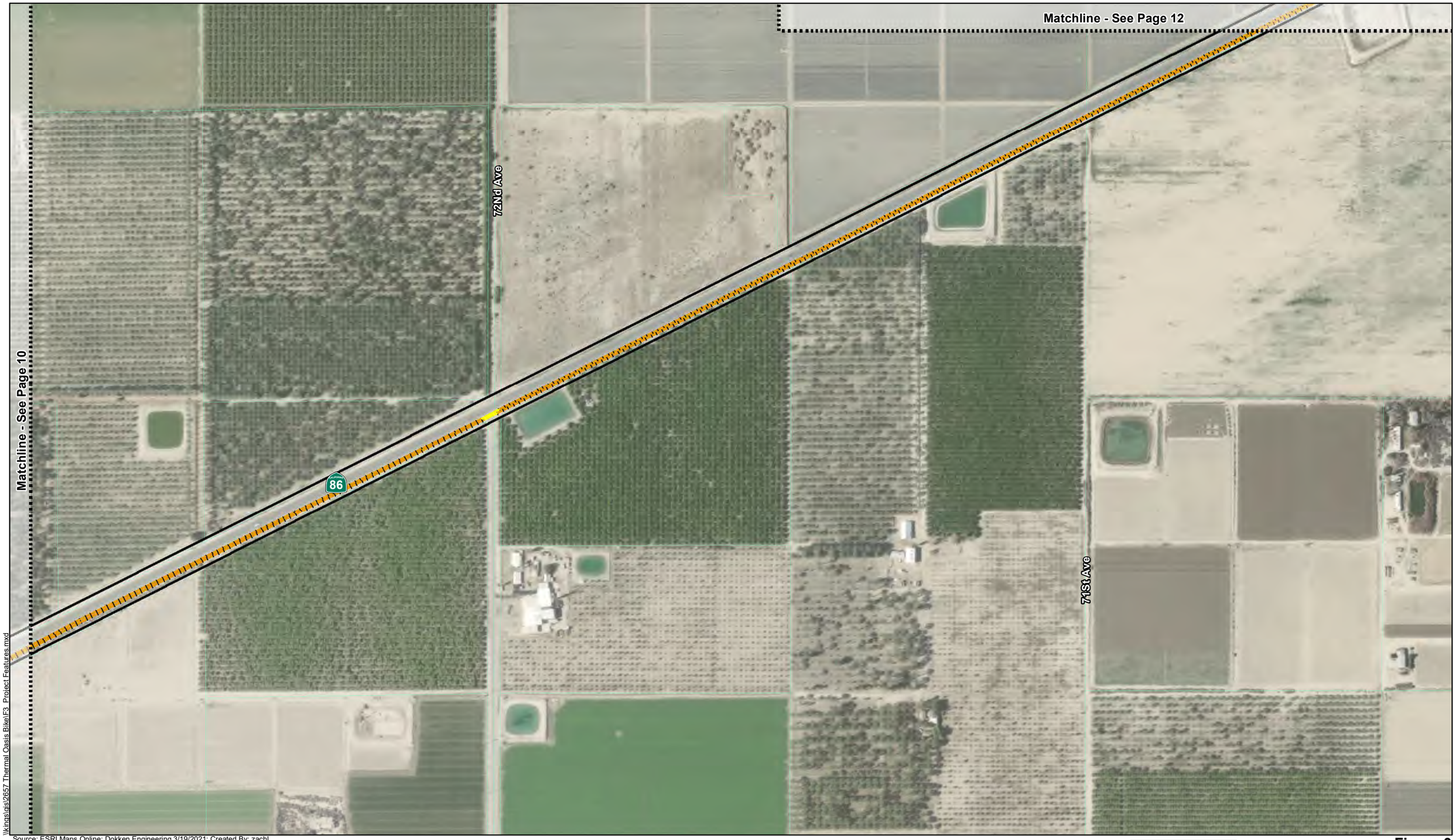

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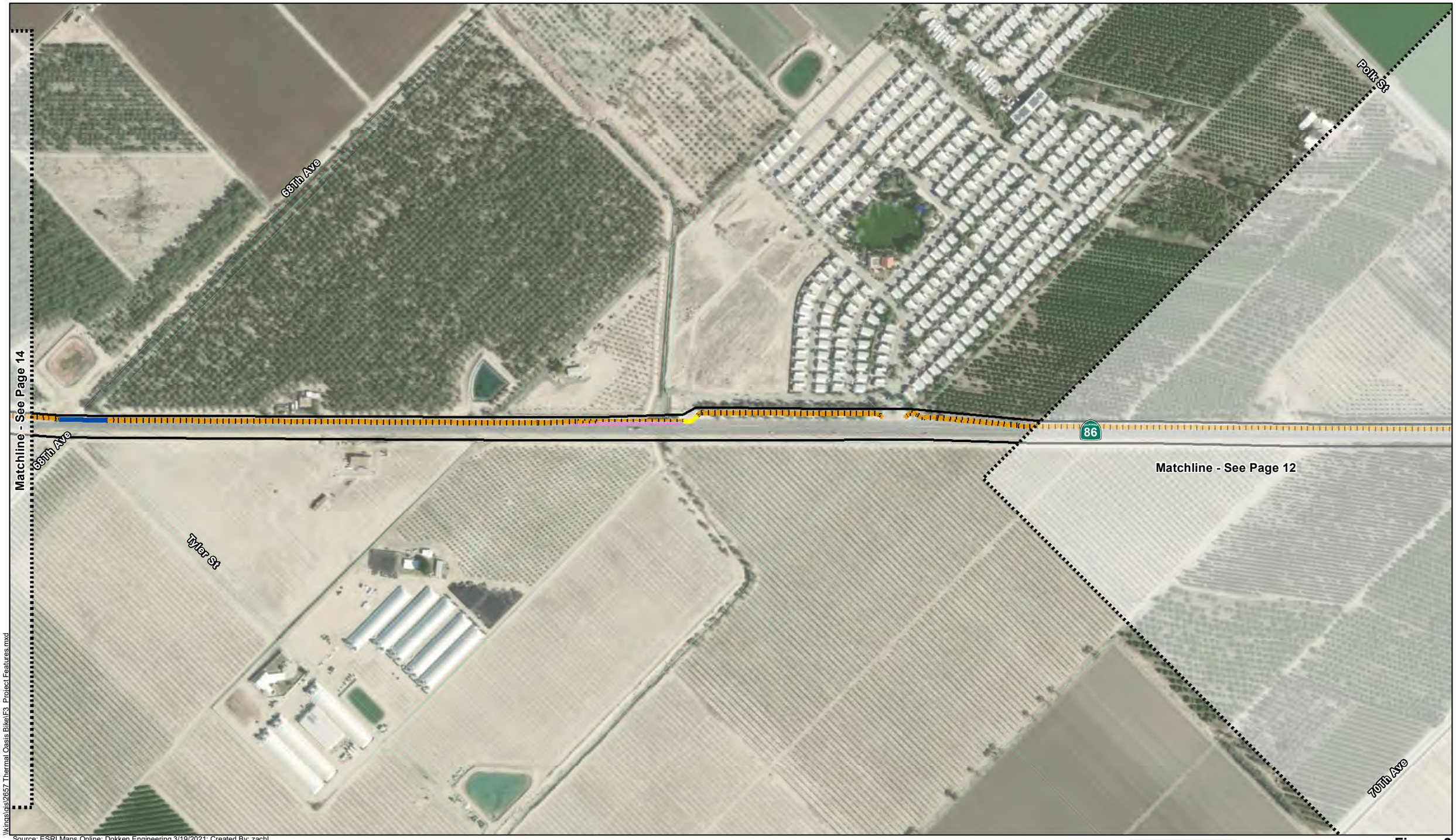

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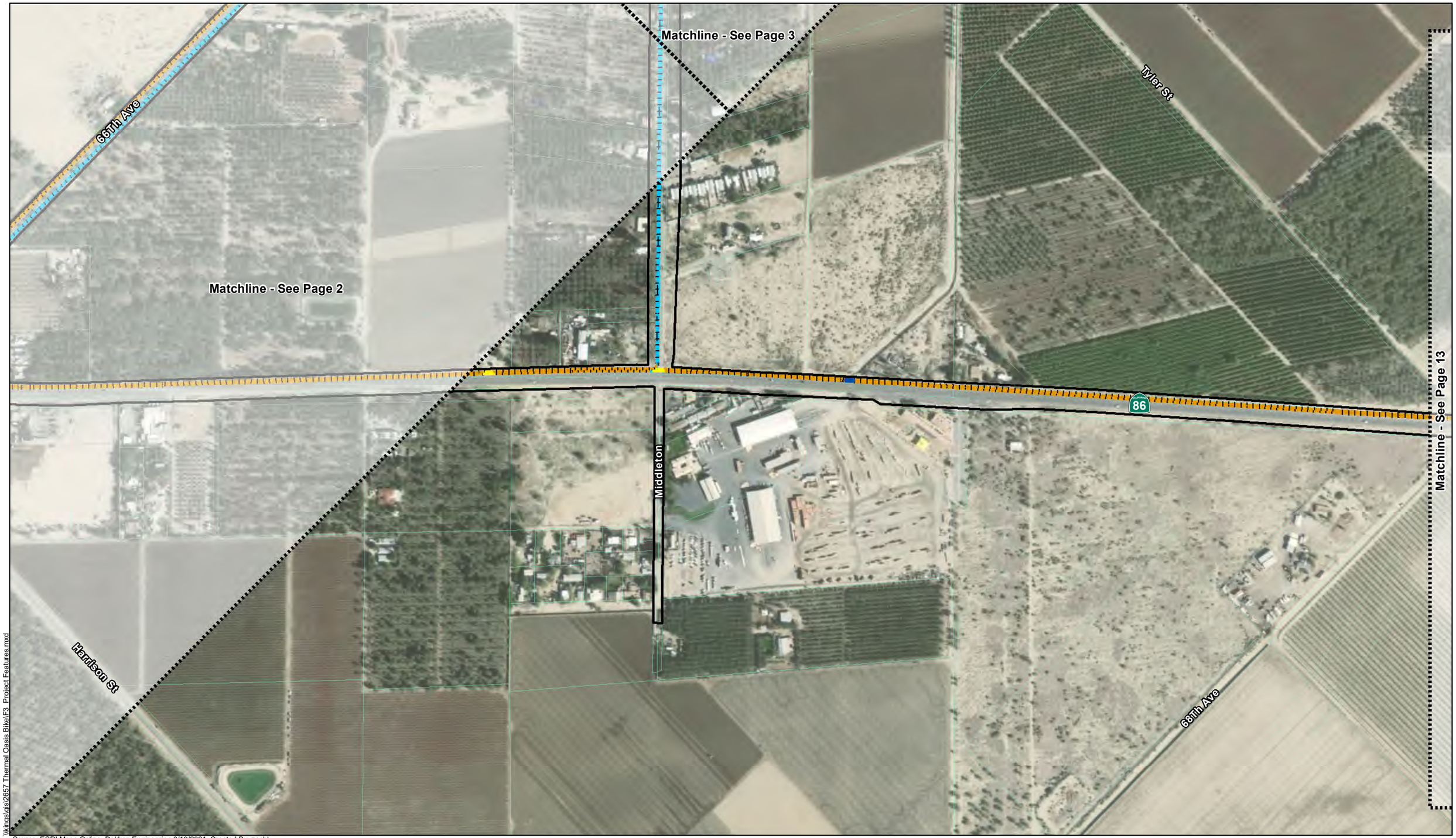

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Chapter 2 Study Methods

2.1 Regulatory Requirements

This section describes the general Federal, State, and local plans, policies, and laws that are relevant to biological resources within the Biological Study Area (BSA).

2.1.1 Federal Regulations

National Environmental Policy Act
The National Environmental Policy Act (NEPA) provides an interdisciplinary framework for environmental planning by Federal agencies and contains action-forcing procedures to ensure that Federal agency decision makers take environmental factors into account. NEPA applies whenever a Federal agency proposes an action, grants a permit, or agrees to fund or otherwise authorize any other entity to undertake an action that could possibly affect environmental resources. Caltrans is the designated NEPA lead agency for this Project acting under delegation from Federal Highways Administration (FHWA).

Federal Endangered Species Act
The Federal Endangered Species Act (FESA) of 1973 (16 U.S.C. section 1531 et seq.) provides for the conservation of endangered and threatened species listed pursuant to Section 4 of the Act (16 U.S.C. section 1533) and the ecosystems upon which they depend. These species and resources have been identified by the United States Fish and Wildlife Services (USFWS) or the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS).

Clean Water Act
The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollutant Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to Waters of the United States (U.S). The CWA serves as the primary Federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The CWA empowers the U.S. Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations, and includes programs addressing both point-source and non-point-source pollution. Point-source pollution originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Non-point-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless they are specifically authorized by a permit; permit review is CWA's primary regulatory tool.

Section 401
The Regional Water Quality Control Board (RWQCB) has jurisdiction under Section 401 of CWA and regulates any activity which may result in a discharge to Waters of the U.S. The RWQCB also asserts authority over "waters of the State" under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act.

Section 404
The USACE regulates discharges of dredged or fill material into waters of the U.S, which include those tidal and non-tidal waters listed in 33 Code of Federal Regulations (CFR) 328.3 These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. USACE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in USACE regulations).

Executive Order 13112: Prevention and Control of Invasive Species
Executive Order (EO) 13112 (signed February 3, 1999) directs all Federal agencies to prevent and control introductions of invasive species in a cost-effective and environmentally sound manner. The EO and directives from the FHWA require consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

Executive Order 13186: Migratory Bird Treaty Act
EO 13186 (signed January 10, 2001) directs each Federal agency taking actions that could adversely affect migratory bird populations to work with USFWS to develop a Memorandum of Understanding that will promote the conservation of migratory bird populations. Protocols developed under the Memorandum of Understanding will include the following agency responsibilities:

- avoid and minimize, to the maximum extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and
- prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist Federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA) (50 CFR 10 and 21) and does not constitute any legal authorization to take migratory birds. Take is defined under the MBTA as "the action of or attempt to pursue, hunt, shoot, capture, collect, or kill" (50 CFR 10.12) and includes intentional take (i.e., take that is the purpose of the activity in question) and unintentional take (i.e., take that results from, but is not the purpose of, the activity in question).

2.1.2 State Regulations

California Environmental Quality Act
The California Environmental Quality Act (CEQA) is a State law created to inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities and to work to reduce these negative environmental impacts.

The County of Riverside is the CEQA lead agency for this Project.

California Endangered Species Act
The California Endangered Species Act (CESA) (California Fish and Game (CFG) Code Section 2050 et seq.) requires CDFW to establish a list of endangered and threatened species (Section 2070) and to prohibit the incidental taking of any such listed species except as allowed by the Act (Sections 2080-2089). In addition, CESA prohibits take of candidate species (under consideration for listing).

CESA also requires CDFW to comply with CEQA (Pub. Resources Code Section 21000 et seq.) when evaluating incidental take permit applications (CFG Code Section 2081(b) and California Code Regulations, Title 14, section 783.0 et seq.), and the potential impacts the Project or activity for which the application was submitted may have on the environment. CDFW's CEQA obligations include consultation with other public agencies which have jurisdiction over the Project or activity [California Code Regulations, Title 14, Section 783.5(d)(3)]. CDFW cannot issue an incidental take permit if issuance would jeopardize the continued existence of the species [CFG Code Section 2081(c); California Code Regulations, Title 14, Section 783.4(b)].

Section 1602: Streambed Alteration Agreement
Under CFG Code 1602, public agencies are required to notify CDFW before undertaking any project that would "divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank or, 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." Preliminary notification and project review generally occurs following the environmental review phase. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to

propose reasonable project changes to protect the resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

Section 3503 and 3503.5: Bird and Raptors
CFG Code Section 3503 prohibits the destruction of bird nests and Section 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Trees and shrubs are present in and adjacent to the BSA and could contain nesting sites.

Section 3513: Migratory Birds
CFG Code Section 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

2.1.3 Local Regulations

County of Riverside General Plan
The Project occurs within the jurisdiction of the Eastern Coachella Valley Area Plan, a component of the County of Riverside 2015 General Plan. This Project has been designed to be consistent with the County of Riverside 2015 General Plan. Impacts to biological resources will be avoided and minimized to the maximum extent practicable. Coordination with appropriate regulatory agencies including CVAG (Coachella Valley Association of Governments), CDFW, USFWS, and USACE will ensure impacts to sensitive resources are minimized or mitigated for, as appropriate. The County of Riverside will incorporate specific requirements of the CVMSHCP into design plans. With the implementation of project measures, Caltrans Standard Best Management Practices (BMPs), permit conditions, and project design, the Project is in conformance with the following Policies and Codes: Circulation Element Policy 20.7 (Environmental Considerations), Land Use Element Policy 4.1 (Project Design), Multipurpose Open Space Element Policy 9.3 (Vegetation), Eastern Coachella Valley Area Plan Policy 4.1 (Light Pollution).

Coachella Valley Multiple Species Habitat Conservation Plan
The County of Riverside is a participant of the CVMSHCP. The Project is located within the regulatory boundary of the CVMSHCP but is completely outside the limits of any designated conservation areas, including the Conservation Area of the CVMSHCP. The CVMSHCP was created to enhance and maintain biological diversity and ecosystem processes while allowing future economic growth. The CVMSHCP provides comprehensive compliance with Federal and State endangered species laws and standardizes 27 Covered Species mitigation/compensation measures for a streamlined regulatory process (CVAG 2007). To mitigate take of Covered Species, the CVMSHCP protects and manages desired habitats within designated Conservation Areas.

2.2 Studies Required

Literature Search
Prior to field work, literature research was conducted through the USFWS Information for Planning and Consultation (IPaC) official species list generator (Appendix A: USFWS Species List), the CDFW California Natural Diversity Database (CNDDB) (Appendix B: CDFW CNDDB Species List), and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants (Appendix C: CNPS Species List), to identify habitats and special status species having the potential to occur within the BSA. The BSA is located outside of NOAA Fisheries jurisdiction, and thus a NOAA Fisheries species list was not required for this Project. A complete list of regional species of concern was generated and is available in Table 1 in Section 3.2 of this document.

Survey Methods
Prior to field surveys, the BSA was defined as the proposed Project impacts area including a 50-foot buffer to include all areas necessary to accommodate the design and facilitate construction. Field surveys, habitat assessments and analysis of special status species occurrences were conducted to determine the potential

for species to occur within the BSA. Special status species surveyed for include those returned in database searches with potentially suitable habitat within the BSA, such as burrowing owl, Couch's spadefoot, and western yellow bat. Field surveys were conducted on June 3, 2020 and included walking meandering transects through the entire BSA, observing vegetation communities, compiling notes on observed flora and fauna, and assessing the potential for existing habitat to support sensitive plants and wildlife.

2.3 Personnel and Survey Dates

Biological surveys and habitat assessments were conducted on June 3, 2020 by Dokken Engineering biologists Scott Salembier and Hanna Sheldon. The lead biologist on this Project has 10 years of experience in the field. Both surveying biologists have experience conducting general biological surveys, habitat assessments, and analyses of special status species occurrences, as well as familiarity with the flora and fauna of the region.

2.4 Agency Coordination and Professional Contacts

2.4.1 United States Fish and Wildlife Service

An official species list of federally listed species with the potential to be affected by the Project was initially obtained from USFWS on January 27, 2020. A final updated list was obtained on March 22, 2021 (USFWS 2021). This species list is available in Appendix A.

2.4.2 California Department of Fish and Wildlife

A list of special status species and habitats with the potential to occur within the Project vicinity was obtained from CDFW through CNDDB on January 27, 2020, updated on July 2, 2020, and again on October 29, 2020 (CDFW 2020). This species list is available in Appendix B.

2.4.3 California Native Plant Society

A list of special status plants with the potential to occur within the Project vicinity was obtained from CNPS on January 27, 2020 and updated on October 29, 2020 (CNPS 2019). This species list is available in Appendix C.

2.5 Limitations That May Influence Results

Sensitive wildlife species with the potential to occur in the Project site may be cryptic (difficult to detect) or transient, migratory species. The population size and locations of sensitive species may fluctuate through time. Because of this, the data collected for this NES may not reflect actual future conditions.

The collection of biological field data is normally subject to environmental factors that cannot be controlled or reliably predicted. Consequently, the interpretation of field data must be conservative and consider the uncertainties and limitations imposed by the environment. However, due to the experience and qualifications of the consulting biologists involved in the surveys, this limitation is not expected to severely influence the results or substantially alter the findings.

No additional limitations were present that could influence the results of this document. All surveys were conducted during appropriate weather and temperature conditions.

Chapter 3 Results: Environmental Setting

3.1 Description of the Existing Physical and Biological Conditions

3.1.1 Study Area

The BSA was defined as the proposed Project impact area and an approximately 50-foot buffer to capture all areas that may be temporarily or permanently disturbed by the Project. The total area of the BSA is approximately 414.05 acres. The BSA mainly encompasses roadways within the Project vicinity and spans approximately 4 miles from west to east, and approximately 4 miles from north to south. The land use in the area is mostly Tribal Lands, along with Agriculture, Medium Density Residential, Commercial Retail, Public Facilities, and Medium High Density Residential (County of Riverside 2019).

3.1.2 Physical Conditions

The elevation within the BSA ranges from approximately 80 to 200 feet below mean sea level. In the vicinity of the BSA, annual temperatures range from a high of 90 degrees Fahrenheit to a low of 57 degrees Fahrenheit, and the average annual rainfall is 3.15 inches (U.S. Climate Data 2020). The topography within the Project limits is relative flat, with slopes ranging from 0 to 2 percent. Soil within the BSA consists of Coachella fine sand, 0 to 2 percent slopes, Coachella fine sand, wet, 0 to 2 percent slopes, Coachella fine sandy loam, 0 to 2 percent slopes, Gilman fine sandy loam, 0 to 2 percent slopes, Gilman fine sandy loam wet, 0 to 2 percent, Gilman fine sandy loam, moderately fine substratum, 0 to 2 percent slopes, Indio very fine sandy loam, wet and Salton silty clay loam (Appendix D. NRCS Soil Report, NRCS 2020).

The BSA is located within the Salton Sea watershed, which encompasses the central part of Riverside County, the eastern portion of San Diego County, and most of Imperial County. The Salton Sea is located approximately 2.12 miles southeast of the southernmost portion of the Project area. Within the BSA, there are a number of irrigation canals and catchments, and one small tributary which has direct downstream connectivity with the Salton Sea.

3.1.3 Biological Conditions

Land cover types within the BSA were identified as roadway, irrigation canal, urban, agricultural, ruderal vegetation, barren, and desert scrub during biological surveys (Figure 4. Land Cover Types within the Biological Study Area).

Roadway
There are 5 main roadways within the BSA including 66th Avenue, Pierce Street, 74th Avenue, Harrison Street and Middleton Street. This land cover type is highly modified and regularly disturbed by human activity. Right-of-way parcel lines for roadways within the BSA were utilized as a guide to map this land cover type. Approximately 71.65 acres (~17%) of the BSA is roadway/roadside.

Irrigation Canal
Irrigation canals pass through the agricultural areas of the BSA and consist of concrete lined channels used for water transportation and man-made basins used for water storage. The canals are often dry and only provide minimal, temporary habitat. Approximately 10.05 acres (~2%) of the BSA is irrigation canal.

Urban
Urban habitat in the BSA includes paved areas adjacent to parking lots, businesses, public buildings, and agricultural buildings. The land cover consists of buildings and paved area and is highly modified and utilized by human activity. Vegetation consists of some ruderal vegetation and sparse grasses. Approximately 23.13 acres (~6%) of the BSA is urban.

Agricultural
Includes palm tree orchards, dirt access roads associated with agricultural properties, buildings associated with agriculture, and irrigation canals associated with agricultural properties that were observed during biological surveys. Approximately 74.48 acres (~18%) of the BSA is agricultural.

Ruderal Vegetation
Ruderal vegetation habitats are characterized by early successional annual vegetation, typically invasive grasses and forbs. Ruderal vegetation habitats are established by disturbance events. The disturbance event may be natural, or due to human activities. Ruderal vegetation occurs throughout the BSA immediately adjacent to roadways and is interspersed with barren areas of compacted soils. This habitat is typically dominated by non-native species. Ruderal vegetation comprises approximately 36.77 acres (~9%) of the BSA.

Barren
Barren habitat occurs as disturbed areas or unpaved landscaped areas. Barren habitat within the BSA consists of compacted dirt walking paths, a paved area for vehicle access and a landscaped area in the northern portion of the BSA. Vegetation consists of sparse forbs and grasses and ornamental plantings within the landscaped area. Approximately 115.01 acres (~28%) of the BSA is classified as barren.

Desert Scrub
Desert scrub habitat is characterized by a shrub dominated landscape that occurs in xeric conditions. Big saltbush (*Atriplex lentiformis*) and iodine bush (*Allenrolfea occidentalis*) were observed as the dominant species during biological surveys. Approximately 83.33 acres (~20%) of the BSA is classified as desert scrub habitat.

Wildlife
The wildlife species observed during the June 2020 biological survey included two amphibian species, 12 bird species, and two mammal species (Appendix E. List of Species Observed). Of the 16 species observed, four were non-native. The majority of these non-native species are common non-native bird species; however, the American bullfrog (*Lithobates catesbeianus*), a highly invasive amphibian, was identified near water resources found in the BSA. The native wildlife observed includes common species such as the pacific chorus frog (*Pseudacris sierra*), California towhee (*Melozone crissalis*), northern mockingbird (*Mimus polyglottos*), and coyote (*Canis latrans*). Other wildlife anticipated to occur within the BSA includes common wildlife species typically found in the deserts of southern California, such as ground squirrels (*Otospermophilus spp.*), California kingsnake (*Lampropeltis californiae*), and hawks (*Buteo spp.*). Special status wildlife species may also occur within the BSA, such as burrowing owl (*Athene cunicularia*) and Couch's spadefoot (*Scaphiopus couchii*) (Table 1. Special Status Species with Potential to Occur in the Project Vicinity). A complete list of wildlife species observed, or identified through sign, within the BSA is provided in Appendix E.

3.1.4 Habitat Connectivity

The BSA is already highly fragmented by agricultural operations and roadways. There are patches of native desert scrub throughout the BSA. The multi-function trail would follow the existing roadway alignment and would not further fragment any exisiting wildlife habitat. Furthermore, according to the CDFW Habitat Connecvtivity Viewer, the majority of the BSA is within an area with terrestrial connectivity rank 1, which represents limited connectivity opportunity. In this area, existing land use barrs wildlife movement and habitat connectivity. The eastern half of 66th Avenue and the northern part of Pierce Street within the BSA are within an area of terrestrial connectivity rank 3, which represents connections with implementation flexibility. This area may have some habitat connectivity impotance; however, it has not been indentified as channelized areas, corridors, or habitat linkages. Overall, the Project would not impact any wildlife migratory corridors, linkages or other habitat connectivity.

Biological Study Area (414.05 acres)

Vegetation Communities

- Agriculture (74.48 acres)
- Barren (115.01 acres)
- Desert Scrub (83.33 acres)
- Irrigation Canal (10.05 acres)
- Roadway/Roadside (71.65 acres)
- Ruderal Vegetation (36.77 acres)
- Urban (23.13 acres)

Echols Rd
65Th Ave
66Th Ave
Van Buren St
Nena Dr
Middleton
Martinez St
Pierce St
65Th Ave
7Th St
5Th St
3Rd St
66Th Ave
Buchanan St
67Th Ave
Lincoln St
Hammond Rd
68Th Ave
69Th Ave
Harrison St
Fillmore St
70Th Ave
Tyler St
71St Ave
Polk St
Lopez Rd
72Nd Ave
73Rd Ave
74Th Ave
75Th Ave
Buxton Dr
Orchard St
86
86S
111

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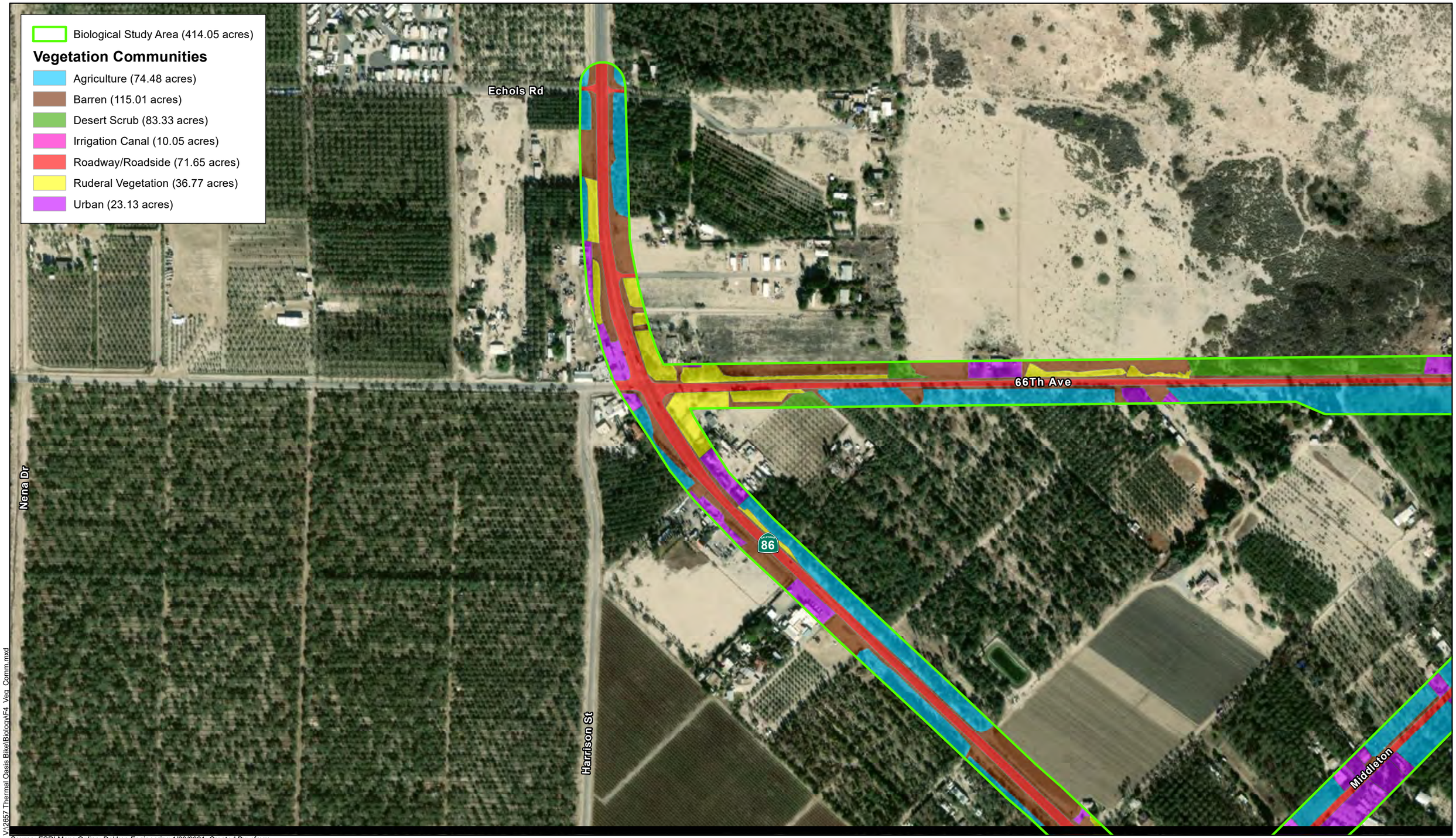
Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 3,000 feet

0 2,000 4,000 6,000 8,000 10,000 Feet

Figure 4
Page 1 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California



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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

0 275 550 825 1,100 1,375 Feet

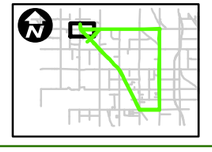

Figure 4
Page 2 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

Biological Study Area (414.05 acres)

Vegetation Communities

- Agriculture (74.48 acres)
- Barren (115.01 acres)
- Desert Scrub (83.33 acres)
- Irrigation Canal (10.05 acres)
- Roadway/Roadside (71.65 acres)
- Ruderal Vegetation (36.77 acres)
- Urban (23.13 acres)

65Th Ave

66Th Ave

Middleton

Tyler St

Martinez St

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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Figure 4
Page 3 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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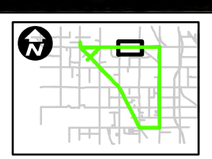

Figure 4
Page 4 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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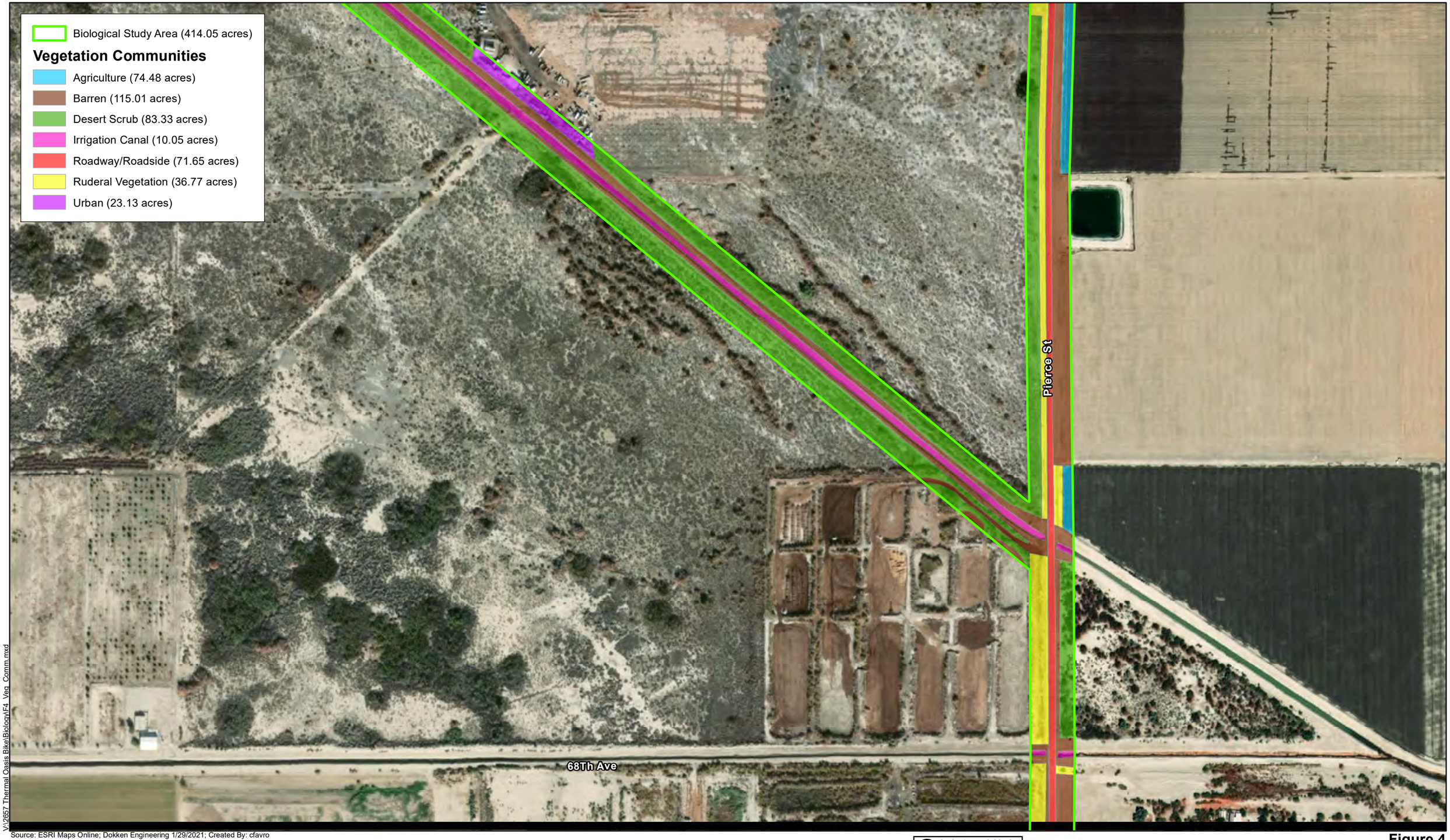
Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

0 275 550 825 1,100 1,375 Feet

Figure 4
Page 5 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California



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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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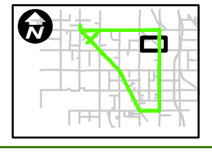

Figure 4
Page 6 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

Biological Study Area (414.05 acres)

Vegetation Communities

- Agriculture (74.48 acres)
- Barren (115.01 acres)
- Desert Scrub (83.33 acres)
- Irrigation Canal (10.05 acres)
- Roadway/Roadside (71.65 acres)
- Ruderal Vegetation (36.77 acres)
- Urban (23.13 acres)

Pierce St

70Th Ave

69Th St

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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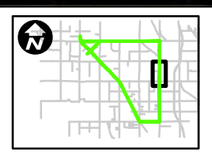

Figure 4
Page 7 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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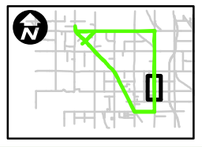

Figure 4
Page 8 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

Biological Study Area (414.05 acres)

Vegetation Communities

- Agriculture (74.48 acres)
- Barren (115.01 acres)
- Desert Scrub (83.33 acres)
- Irrigation Canal (10.05 acres)
- Roadway/Roadside (71.65 acres)
- Ruderal Vegetation (36.77 acres)
- Urban (23.13 acres)

Lopez Rd

73Rd Ave

Pierce St

74Th Ave

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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Figure 4
Page 9 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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Figure 4
Page 10 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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Figure 4
Page 11 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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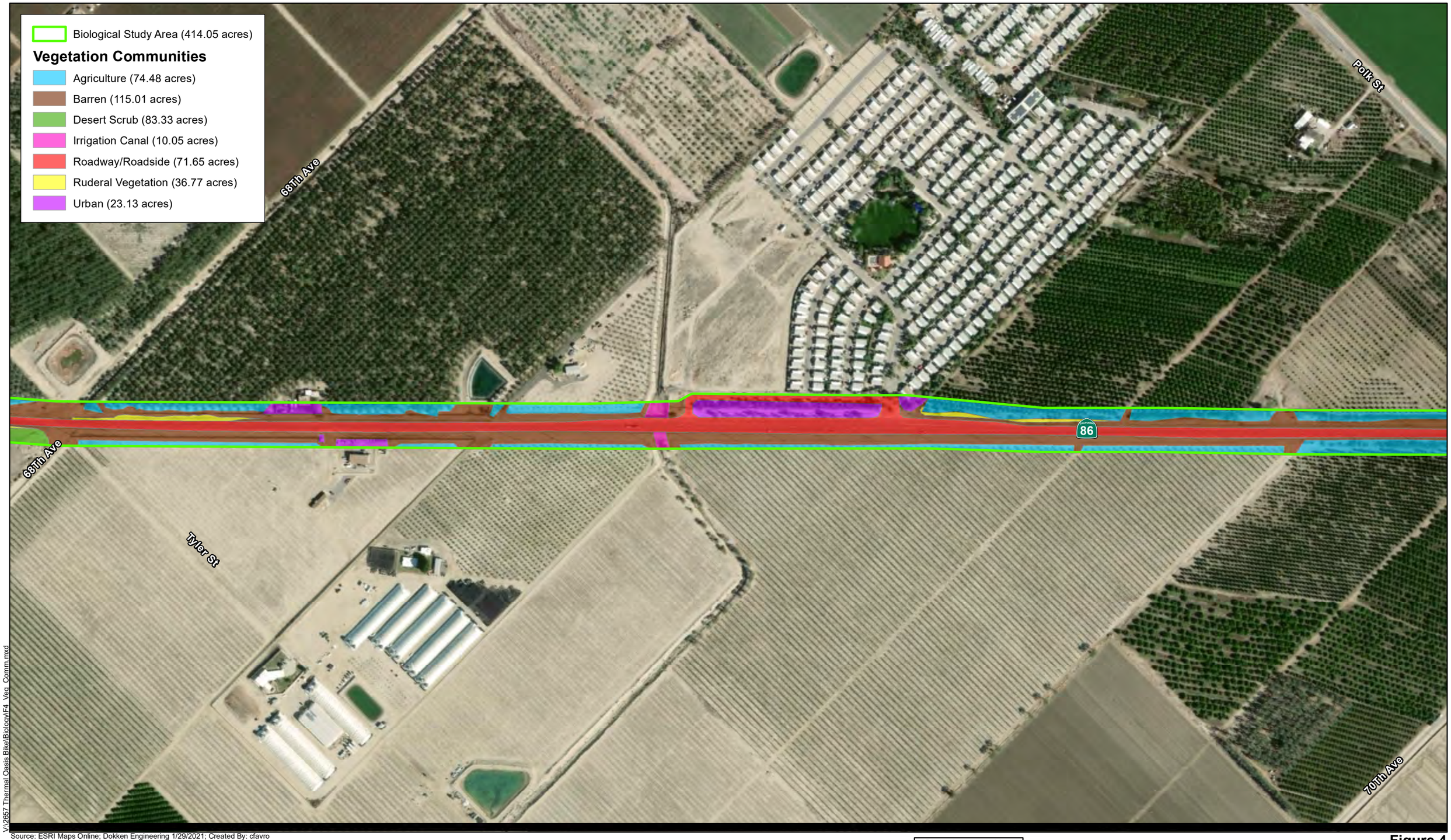
Figure 4
Page 12 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California



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Source: ESRI Maps Online; Dokken Engineering 1/29/2021; Created By: cfavro

1 inch = 400 feet

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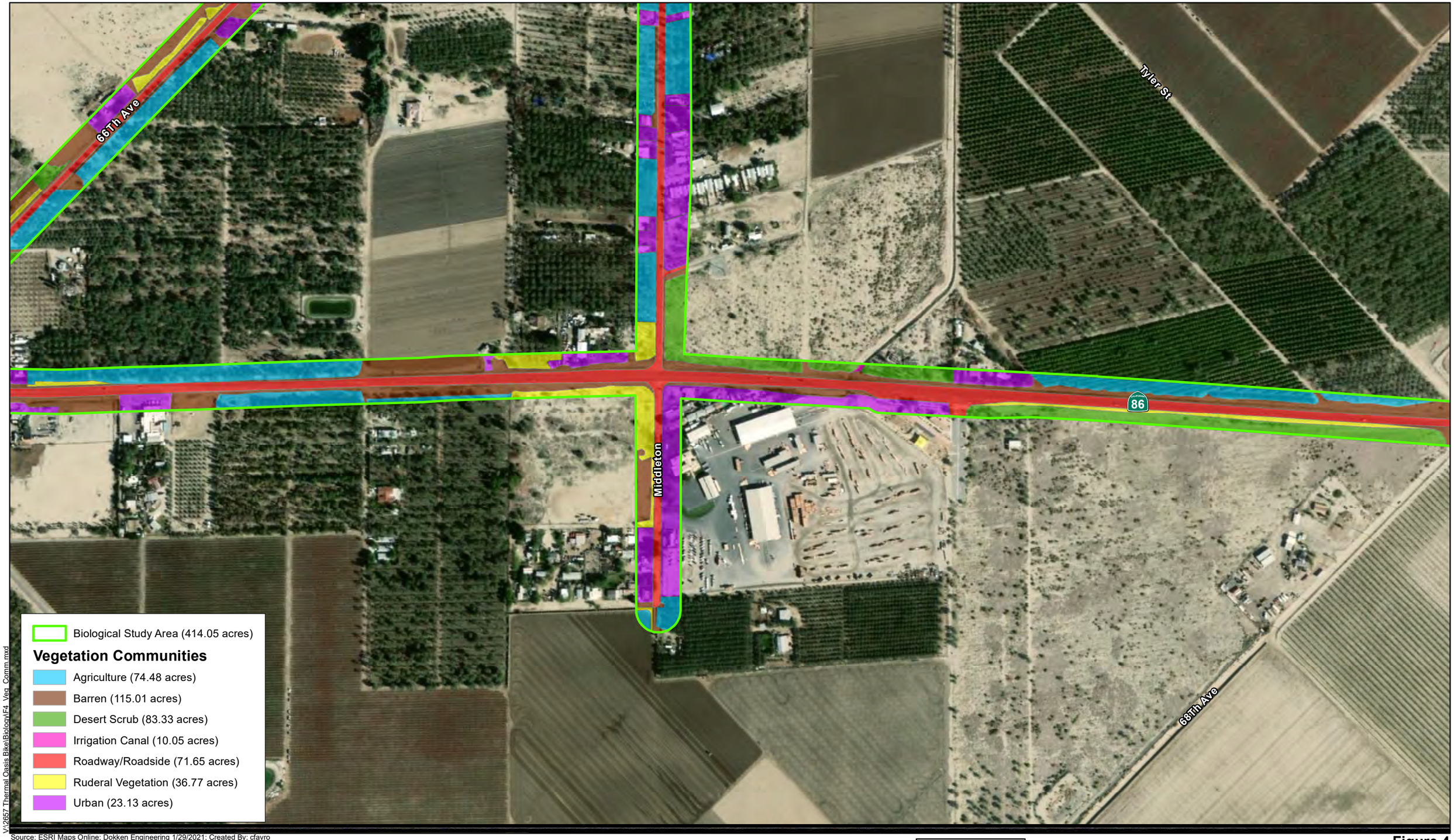
Figure 4
Page 13 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California



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1 inch = 400 feet

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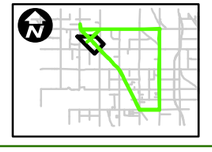

Figure 4
Page 14 of 14
Land Cover Types within the Biological Study Area
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

3.1.5 Regional Species and Habitats and Natural Communities of Concern

Plant and animal species are considered to have special status if they have been listed as such by Federal or State agencies or by one or more special interest groups, such as CNPS. Literature searches of the USFWS, CNDDB, and CNPS databases were conducted to identify regionally sensitive species with potential to occur in the Project vicinity. Table 1 Special Status Species with Potential to Occur in the Project Vicinity provides a list of regional species of special concern returned by database searches, describes the habitat requirements for each species, and states if the species was determined to have potential to occur within the BSA.

Table 1. Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Amphibian Species						
Couch's spadefoot	*Scaphiopus couchii*	Fed: State: CDFW:	-- -- SSC	Inhabits arid and semi-arid habitats of the southwest, occurring along desert washes, in desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats; may occur in cultivated cropland areas. Also associated with mesquite, creosote bush, and thorn forests. Requires friable soils for burrow excavation, often below plants or surface debris for heat protection. The species spends 8-10 months of the year buried in the ground, emerging for summer rains. Breeding sites often in proximity to refuges and require temporary pools that last a minimum of 7 days. Adequate insect prey, especially termites must be available (0-1,120 ft.).	HP	**Low to Moderate Potential:** The BSA is adjacent to desert riparian and desert scrub habitats and contains plants known to be associated with the species, such as mesquite. However, the habitat within the Project area is highly disturbed and the Project would avoid impacts to the less disturbed adjacent desert riparian and desert scrub habitat that the species would be more likely to inhabit. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 1.9 miles east of the Project area (2007). Due to the presence of disturbed desert riparian habitat within the BSA that could provide suitable habitat for the species, the species has a low to moderate potential to occur in the Project area.
Desert slender salamander	*Batrachoseps major aridus*	Fed: State: CDFW:	E E --	Inhabits moist cliffs, talus, and associated springs. Also associated with Sonoran desert scrub. Preferred sites are shaded. Eggs are laid terrestrially, in limestone crevices. Only known to occur on the east slope of the Santa Rosa Mountains in Hidden Palm Canyon and Guadalupe Canyon (2,800 ft.).	A	**Presumed Absent:** The BSA lacks cliffs and spring habitat inhabited by the species. In addition, the BSA is not within Hidden Palm Canyon or Guadalupe Canyon, where the species is known to occur. The BSA is also below the species' elevation range. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1985) occurrence of the species is approximately 4.0 miles west of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrence, the species is presumed absent from the BSA.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Bird Species						
Black skimmer	*Rynchops niger*	Fed: State: CDFW:	-- -- SSC	The species occurs as a summer migrant along the Salton Sea from April through October. The San Diego Bay colony is resident year-round. The species utilizes unvegetated sandy beaches, gravel bars and low islets for nesting and roosting. Requires shallow, calm water for foraging. Eggs are laid in hollows or sand scrapes above high water. Nesting at the south end of Salton Sea begins in June, and has continued into October.	A	**Presumed Absent:** The BSA lacks beach habitat and nearby shallow water suitable for nesting. The closest potentially suitable habitat is at the Salton Sea, approximately 2.6 miles southeast of the Project area. Furthermore, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1994) occurrence of the species is approximately 2.9 miles east of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Burrowing owl	*Athene cunicularia*	Fed: State: CDFW:	-- -- SSC	The species inhabits arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. Can be associated with open shrub stages of pinyon-juniper and ponderosa pine habitats. Nests in old small mammal burrows, but may dig own burrow in soft soil. Nests are lines with excrement, pellets, debris, grass, and feathers. The species may use pipes, culverts, and nest boxes, and even buildings where burrows are scarce. Breeding occurs March through August (below 5,300 ft.).	HP	**Low to Moderate Potential:** The BSA is adjacent to open areas with desert, agricultural, and disturbed habitats in which the species is known to occur. In addition, the nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 2.0 miles northeast of the Project area (2007). The Project would avoid impacts to much of the open habitat where nesting could occur and the species was not observed during June 2020 biological surveys. Despite not being observed during biological surveys, the species has a low to moderate potential to occur within the BSA due to the presence of suitable habitat adjacent to the Project area and the existence of local, recent occurrences.
Crissal thrasher	*Toxostoma crissale*	Fed: State: CDFW:	-- -- SSC	The species inhabits a variety of desert riparian and scrub habitats, specifically with dense, low scrubby vegetation. At lower elevations,	HP	**Presumed Absent:** The BSA is low elevation and lacks riparian scrub and woodland communities inhabited by the species. The BSA does contain agricultural

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				typically inhabits riparian scrub or woodland. At high elevations, typically inhabits the upper reaches of desert scrub, below pinyon-juniper foothills. Often utilizes mesquite, screwbean mesquite, ironwood, catclaw acacia, and arrowweed for nesting and cover. Can also use agricultural edges for foraging when adjacent to native vegetation. Nests in the densest portions of shrubs, from February to June (sea level to over 6,000 ft.).		edges which the species sometimes uses; however, it is highly disturbed and not adjacent to native vegetation, so it is unlikely to support the species. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1930) occurrence of the species is approximately 1.2 miles east of the Project area. Due to the lack of suitable habitat, the level of human disturbance in the BSA, and the lack of recent occurrences, the species is presumed absent in the BSA.
Gull-billed tern	*Gelochelidon nilotica*	Fed: State: CDFW:	-- -- SSC	Uncommon California summer resident known only to nest at the Salton Sea. Forages over fresh and saline emergent wetlands, lakes, mudflats, croplands, grasslands, and, rarely, brushlands. Nests are shallow depressions in soft sand, soil, or dry mud, usually lined with grasses, seaweed, or other vegetation. Species arrives in March, nests in May, and departs by September.	A	**Presumed Absent:** The BSA lacks saline emergent wetlands, lakes, and mudflats used for foraging and soft sand required for nesting. The Project area is located approximately 2.6 miles northwest of the Salton Sea, where the species is known to nest. However, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1994) occurrence of the species is approximately 2.9 miles east of the Project area. Due to the lack of local, recent occurrences despite the close proximity to suitable habitat, the species is presumed absent from the BSA.
Least Bell's vireo	*Vireo bellii pusillus*	Fed: State: CDFW:	E -- --	Summer resident of southern California inhabiting low elevation riparian habitats in the vicinity of water and dry river bottoms. Prefers willows, baccharis, mesquite and other low, dense vegetation as nesting site. Forages in dense brush and occasionally treetops. The species is known to occur in all four southern California national forests,	A	**Presumed Absent:** The BSA is highly disturbed and lacks suitable riparian habitat, so it is unlikely to support the species. The vegetation within the BSA is not dense or forested. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				with the largest population in the Los Padres National Forest (below 2,000 feet).		
Le Conte's thrasher	*Toxostoma lecontei*	Fed: State: CDFW:	-- -- SSC	An uncommon desert resident inhabiting open desert wash, desert scrub, alkali desert scrub, desert succulent shrub and Joshua tree habitats with scattered desert shrubs and cacti. Often nests in dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground. Breeds January through June. The species is especially wary of human disturbance.	HP	**Presumed Absent:** The BSA is adjacent to desert scrub communities, but it has a high level of human disturbance and lacks succulent scrub and Joshua tree communities preferred by the species. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1908) occurrence of the species is approximately 1.3 miles east of the Project area. The species was not observed during June 2020 biological surveys. Due to the level of human disturbance in the BSA and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Loggerhead shrike	*Lanius ludovicianus*	Fed: State: CDFW:	-- -- SSC	The species is associated with open canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Inhabits open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Rarely found in urbanized areas, but will inhabit open cropland. Nests are built on stable branches in densely-foliaged shrubs or trees. Breeds from March through May.	A	**Presumed Absent:** The BSA lacks open canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree communities inhabited by the species. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Southwestern willow flycatcher	*Empidonax traillii extimus*	Fed: State: CDFW:	E E --	Breeds in riparian habitats characterized by dense vegetation in proximity to open water or saturated soil. Species is associated with dense willow-covered islands and riparian habitats at elevations up to 8,000 feet. Often in proximity to rivers,	A	**Presumed Absent:** The BSA lacks the riparian habitat with dense vegetation in close proximity to open water that is preferred by the species. Furthermore, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				swamps, lakes, reservoirs, and other wetlands. Historically, the species nested in native vegetation, but will also use thickets of non-native tamarisk and Russian olive. Breeds in April through August.		local, recent occurrences, the species is presumed absent from the BSA.
Vermillion flycatcher	*Pyrocephalus rubinus*	Fed: State: CDFW:	-- -- SSC	Occurs primarily along the Colorado River within Riverside County, but also occurs in isolated patches throughout central southern California. Inhabits desert riparian habitat in proximity to irrigated fields, irrigation ditches, pastures and other open, mesic areas. Breeds and forages near water, and occurs most frequently where riparian thickets of cottonwood, willow, mesquite, and other water associated vegetation interface with open, mesic habitats. Breeds approximately February through July.	A	**Presumed Absent:** While the BSA contains irrigated fields and ditches, it lacks suitable adjacent riparian communities inhabited by the species. In addition, the BSA is located approximately 86 miles from the Colorado River, where the species primarily occurs. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1948) occurrence of the species is approximately 3.9 miles north of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Yellow-breasted chat	*Icteria virens*	Fed: State: CDFW:	-- -- SSC	An uncommon summer resident of coastal California and in foothills of the Sierra Nevada, arriving in April and departing by late September. Requires riparian thickets of willow and other brushy tangles near watercourses for nesting and foraging. Nests in dense shrubs along streams and rivers. Breeds from May-August.	A	**Presumed Absent:** The BSA lacks riparian vegetation near streams and rivers suitable for nesting. In addition, the BSA is not located in the foothills of the Sierra Nevada, where the species is known to occur .There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1916) occurrence of the species is approximately 1.2 miles east of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Yuma clapper rail	*Rallus longirostris yumanensis*	Fed: State: CDFW:	E T FP	Inhabits fresh and brackish water emergent wetlands along the Colorado River from Needles	A	**Presumed Absent:** The BSA lacks fresh and brackish water emergent wetlands required by the species for nesting.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				southward, and around the Salton Sea from April to September. Prefers emergent wetland dominated by pickleweed and cordgrass. Within the brackish emergent wetlands of the Colorado River and Salton Sea, the species prefers mature stands of cattail and bulrush for nesting and foraging. Requires shallow water and mudflats for foraging, with adjacent higher vegetation for cover during high water. Breeds from March-July.		Furthermore, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1978) occurrence of the species is approximately 2.9 miles east of the Project area. Due to the lack of suitable habitat and the lack of recent occurrences, the species is presumed absent from the BSA.
Fish Species						
Desert pupfish	*Cyprinodon macularius*	Fed: State: CDFW:	E E --	Species is only found in small isolated populations in the Salton Sea watershed and inhabits desert ponds, springs, marshes and streams of Southern California. The species can survive in fresh water to water with salinities up to 68 PPT and withstand temperatures from 48° to 113° F and dissolved Oxygen levels as low as 0.1 PPM. Prefers calm waters, but may be found in polluted and fluctuating conditions. Spawning occurs from April-October when water temperatures begin to exceed 68° F.	A	**Presumed Absent:** The BSA is adjacent to some small freshwater ponds but is located 2.6 miles northwest of the Salton Sea, where all CNDDB occurrences of the species within a 10-mile radius of the Project area are located. The most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 8.0 miles east of the Project area (2007). In addition, the BSA is highly disturbed and is unlikely to support the species. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Razorback sucker	*Xyrauchen texanus*	Fed: State: CDFW:	E E FP	In California, species occurs in large, warm-water, slow moving sections of the Colorado River drainage and a few scattered lakes and basins. The species is not found in smaller tributaries and headwater streams. Species is adapted to swimming in swift currents, but requires quiet waters. Spawns in shallow water with	A	**Presumed Absent:** The BSA lacks large water features such as rivers, lakes, and basins. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1955) occurrence of the species is approximately 0.15 miles east of the Project area in a stream that will not be impacted by Project activities. Due to the

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				sand, gravel, mud, or rocks from December to February.		lack of suitable aquatic habitat intersecting the BSA, the species is presumed absent.
Invertebrate Species						
Casey's June beetle	*Dinacoma caseyi*	Fed: State: CDFW:	E -- --	Inhabits fine silty and sandy soils in Southern California alluvial plains. Can be associated with cheesebush, creosote bush, saltbush, cholla cactus, catclaw, and desert lavender. Known from two populations in the southern part of Palm Springs. Breeds from March-June.	A	**Presumed Absent:** The BSA is highly disturbed and unlikely to support the species. Plants associated with the species were not observed during June 2020 biological surveys. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area, as the Project is located approximately 27 miles southeast of Palm Springs, where the species is known to exist. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Mammal Species						
American badger	*Taxidea taxus*	Fed: State: CDFW:	-- -- SSC	Prefers treeless, dry, open stages of most shrub and herbaceous habitats with friable soils and a supply of rodent prey. Species also inhabits forest glades, meadows, marshes, brushy areas, hot deserts, and mountain meadows. Species maintains burrows within home ranges estimated between 338-1,700 acres, dependent on seasonal activity. Burrows are frequently re-used, but new burrows may be created nightly. Young are born in March and April within burrows dug in relatively dry, often sandy, soil, usually in areas with sparse overstory cover. Species is somewhat tolerant of human activity, but is sensitive to automobile mortality, trapping, and persistent poisons (up to 12,000 feet).	HP	**Presumed Absent:** The BSA is adjacent to dry, open shrub habitats in which the species is known to occur. However, the Project will avoid impacts to the open areas in which the species could maintain burrows. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 4.8 miles northeast of the Project area (2001). Due to the disturbed nature of the BSA, the lack of suitable burrow habitat within the Project impact area, and the lack of local, recent occurrences, the species is presumed absent.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Pallid bat	*Antrozous pallidus*	Fed: State: CDFW:	-- -- SSC	Inhabits low elevations of deserts, grasslands, shrub lands, woodlands and forests year-round. Most common in open, dry habitats with rocky areas for roosting. Forages over open ground within 1-3 miles of day roosts. Prefers caves, crevices, and mines for day roosts, but may utilize hollow trees, bridges and buildings. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. Maternity colonies form early April and young are born April-July (below 10,000 ft.).	A	**Presumed Absent:** The BSA lacks caves, crevices, and mines used by the species for roosting. In addition, the Project area is largely disturbed and agricultural, which is unsuitable for the species. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1992) occurrence of the species is approximately 7.1 miles northeast of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Pallid San Diego pocket mouse	*Chaetodipus fallax pallidus*	Fed: State: CDFW:	-- -- SSC	Species inhabits arid habitats including desert wash, pinyon and juniper woodlands, and Sonoran desert scrub communities. Species strongly associated with rocky slopes and sandy soils, which are required for burrow construction. Breeds March to May (0-4,500 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert wash habitat and desert scrub communities, but lacks rocky slopes and suitable areas for burrow construction. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1984) occurrence of the species is approximately 6.0 miles east of the Project area. Due to the lack of suitable habitat within the Project impact area and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Palm Springs pocket mouse	*Perognathus longimembris bangdi*	Fed: State: CDFW:	-- -- SSC	Species occurs only in the Coachella Valley. Inhabits flat to gently sloping topography, sparse to moderate vegetative cover, and loosely packed or sandy soils of desert wash, Sonoran desert scrub communities with preference to creosote dominated desert scrub. Species is unlikely to utilize areas with compacted, stony, and cobbly soils,	HP	**Presumed Absent:** The Project area is adjacent to desert scrub and saltbush scrub communities; however, the Project area itself contains disturbed habitat that is unsuitable for the species. In addition, the nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 8.0 miles north of the Project area (2001). Despite the proximity to potentially suitable habitat,

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				in saltbush dominated communities, or in areas of human disturbance. Hibernation is believed to occur below ground from October to March.		the species is presumed absent from the BSA due to the disturbed nature of the Project area, the lack of recent, local occurrences, and the fact that the species was not observed during biological surveys.
Palm Springs round-tailed ground squirrel	*Xerospermophilus tereticaudus chlorus*	Fed: State: CDFW:	-- -- SSC	A diurnal species restricted to the Coachella Valley. Inhabits desert succulent scrub, desert wash, Sonoran desert scrub, chenopod scrub and alkali scrub communities. Prefers open, flat, grassy areas in fine textured, sandy soil and will burrow at the base of shrubs. Population density is correlated with the quantity of winter rainfall. Found at elevations as low as -180 feet.	HP	**Presumed Absent:** The BSA is within the Coachella Valley and is adjacent to desert scrub communities known to be inhabited by the species. However, the Project would avoid impacts to the open desert scrub areas in which the species would occur. The species was not observed during MONTH 2020 biological surveys and the nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 4.4 miles northeast of the Project area (2001). Despite proximity to potentially suitable habitat, the species is presumed absent from the BSA due to the lack of recent, local occurrences and the fact that the species was not observed during biological surveys, specifically in the Project impact areas.
Peninsular bighorn sheep	*Ovis canadensis nelsoni*	Fed: State: CDFW:	E T FP	Species widely distributed from the white mountains in Mono County to the Chocolate Mountains in Imperial County. Inhabits alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, and montane riparian habitats. Prefers open areas of low growing vegetation for feeding, with close proximity to steep, rugged	A	**Presumed Absent:** The BSA lacks alpine and montane communities known to be inhabited by the species. In addition, the BSA is relatively flat and lacks steep, rugged terrain and sufficient water sources for the species. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1986) occurrence of the species is approximately 5.8 miles southwest of the Project area. Due to the lack of suitable habitat and the lack of

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				terrain. Available water sources critical.		local, recent occurrences, the species is presumed absent from the BSA.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	Fed: State: CDFW:	-- -- SSC	Inhabits pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis communities. Prefers rocky desert areas with high cliffs or rock outcrops and frequently selects roosts in cliff rock crevices. Species must have an adequate drop from the roost to gain flight. Maternity sites are located in rock crevices, caverns and buildings. Young are born June-July.	A	**Presumed Absent:** The BSA lacks pinyon-juniper woodlands, Joshua tree, and palm oasis communities. The BSA is adjacent to desert riparian and desert scrub communities, but lacks rocky areas with high cliffs and outcrops in which the species could roost. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1992) occurrence of the species is approximately 7.1 miles northeast of the Project area. Due to the lack of suitable roosting habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
San Diego desert woodrat	*Neotoma lepida intermedia*	Fed: State: CDFW:	-- -- SSC	The species inhabits coastal scrub of southern California, from San Diego County to San Luis Obispo County. Prefers moderate to dense canopies, rocky outcrops, rocky cliffs, and slopes. Inhabits most desert habitats, particularly Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, and sagebrush communities. The species is active yearlong and usually nocturnal. Breeds from October to May.	A	**Presumed Absent:** The BSA lacks rocky outcrops, cliffs, and slopes, as well as Joshua tree woodland, pinyon-juniper woodland, and chaparral communities. The BSA is adjacent to desert habitats that the species is known to inhabit; however, the Project would avoid impacts to these habitats. The species was not observed during June 2020 biological surveys. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Spotted bat	*Euderma maculatum*	Fed: State: CDFW:	-- -- SSC	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Foraging habitat includes marshes, meadows, riparian zones, shrub-steppe, and open ponderosa pine	A	**Presumed Absent:** The BSA is adjacent to arid desert habitat, but lacks marsh and forest habitat. In addition, the BSA lacks cliffs and caves with rock crevices that could be used by the species for roosting. In addition, there are no recent (<20 years)

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				forest. Prefers rock crevices in cliffs or caves for roosting. Species is solitary but may roost with other species. Mates in autumn and births before June (sea level-10,000 ft.).		CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1907) occurrence of the species is approximately 1.2 miles east of the Project area. Despite historical occurrences and suitable foraging habitat near the BSA, the species is presumed absent due to the lack of suitable roosting habitat and the lack of recent occurrences.
Townsend's big-eared bat	*Corynorhinus townsendii*	Fed: State: CDFW:	-- -- SSC	Species occurs throughout California in all habitats except subalpine and alpine communities. Requires caves, mines tunnels, buildings or man-made structures for day and night roosts. Rarely roots in tree cavities, limited to males and non-reproductive females. Young born May-June (4,500-10,800 feet elevation).	A	**Presumed Absent:** The BSA lacks caves, mines, tunnels, and sufficient man-made structures for roosting. In addition, there is only one CNDDB occurrence within a 10-mile radius of the Project area (date unknown). Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Western mastiff bat	*Eumops perotis californicus*	Fed: State: CDFW:	-- -- SSC	Inhabits many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Prefers open, rugged, rocky areas where suitable crevices are available for day roosts. Roots in cliff face crevices (usually granite or consolidated sandstone), high buildings, trees and tunnels. Roosting sites must have a minimum 10-foot vertical drop. Births early April through August or September (sea level-8,475 ft.).	A	**Presumed Absent:** The BSA lacks conifer woodlands, deciduous woodlands, coastal scrub, grassland, and chaparral communities. In addition, it lacks open, rugged, rocky areas and suitable cliffs and crevices for roosting. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1907) occurrence of the species is approximately 1.2 miles east of the Project area. Due to the lack of suitable roosting habitat and the lack of recent occurrences, the species is presumed absent from the BSA.
Western yellow bat	*Lasiurus xanthinus*	Fed: State: CDFW:	-- -- SSC	Species known in California only in Los Angeles and San Bernardino Counties south to the Mexican border. Inhabits valley foothill riparian, desert riparian, desert wash, and palm oasis habitats in proximity	HP	**Low to Moderate Potential:** The BSA contains some desert scrub habitat, although it is fragmented in disturbed in many places. The BSA also contains and is adjacent to agricultural palm trees. There are no recent (<20 years) CNDDB

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				to water. Species utilizes trees and palms for roosting and maternity colonies. Births in June and July (below 2,000 feet).		occurrences within a 10-mile radius of the Project area, and the nearest historic (1976) occurrence of the species is approximately 2.2 miles south of the Project area. Due to the presence of suitable, yet disturbed habitat, and the lack of recent occurrences, the species has a low to moderate potential to occur.
Reptile Species						
Coachella Valley fringe-toed lizard	*Uma inornata*	Fed: State: CDFW:	E -- --	The species is restricted to sandy habitats of the Coachella Valley floor. Requires un-stabilized, fine, wind-blown sands for burrowing with widely spaced shrubs, often within high mesquite dunes and creosote bush sand hummocks. The species spends November through February in burrows and in the sand. Breeding occurs from March through May with egg laying occurring from April to September.	HP	**Presumed Absent:** The BSA is within the Coachella Valley and is adjacent to desert scrub habitat that contains associated plant species such as mesquite. However, the BSA lacks un-stabilized, wind-blown sands and dunes that the species requires for burrowing. The BSA is highly disturbed and the Project would avoid impacts to suitable burrowing habitat. There are three CNDDB occurrences that intersect the Project area (1975), but the species was not observed during June 2020 biological surveys. Despite historical occurrences of the species within the BSA and the proximity to potentially suitable habitat, the species is presumed absent due to the lack of appropriate burrowing habitat within the Project area and the fact that the species was not observed during biological surveys.
Desert tortoise	*Gopherus agassizii*	Fed: State: CDFW:	T T --	Species inhabits a variety of habitats from flats and slopes within creosote bush scrub at lower elevations to rocky slopes in blackbrush scrub and juniper woodland at higher elevations within Mojavean desert scrub and Sonoran desert scrub communities. Species prefers creosote bush scrub with a high diversity of perennials and	A	**Presumed Absent:** The BSA lacks creosote bush scrub, blackbrush scrub, and juniper woodland communities known to be inhabited by the species. In addition, the BSA is highly disturbed and is mostly composed of non-native and agricultural plant species, lacking the high diversity of plant species preferred by the species. The BSA is adjacent to potentially suitable

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				high production of ephemeral plant species. Requires friable soil for burrow and nest construction, but adequately firm to prevent burrow collapse. Feeding activity is very short and occurs in the spring. Mating occurs in March and April, with eggs laid in May to July at the openings of burrows. Prefers elevations at 1,000-3,000 feet but has been documented from below sea level to 7,300 feet.		desert scrub communities; however, the Project would avoid impacts to this desert scrub habitat. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 8.7 miles north of the Project area (2006) and the species was not observed during June 2020 biological surveys. Despite the proximity of the BSA to potentially suitable habitat, the species is presumed absent due to the disturbed nature of the BSA, the lack of suitable burrow habitat, and the lack of local, recent occurrences.
Flat-tailed horned lizard	*Phrynosoma mcallii*	Fed: State: CDFW:	-- -- SSC	Species inhabits desert scrub, desert wash, succulent shrub, and alkali scrub habitats. Common in sandy desert hardpan, gravel flats with scattered vegetation, and areas with fine windblown sand (but rarely dunes). Requires an adequate source of ants for food; species is an ant specialist, particularly Harvester ants. Hibernation occurs as early as October and can extend to March, but may emerge in January or February. Breeds in early spring and may produce multiple clutches within a breeding season; young appear in July through September (below sea level-750 ft.).	HP	**Presumed Absent:** The BSA is adjacent to desert scrub communities with scattered vegetation; however, the BSA is largely composed of disturbed and agricultural land. The Project would avoid impacts to the adjacent desert scrub communities. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1908) occurrence of the species is approximately 1.2 miles east of the Project area. The species was not observed during June 2020 biological surveys. Despite the proximity to potentially suitable habitat, the species is presumed absent from the BSA due to the disturbed nature of the BSA, the fact that the species was not observed during biological surveys, and the lack of recent occurrences of the species in the Project area.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Red-diamond rattlesnake	*Crotalus ruber*	Fed: State: CDFW:	-- -- SSC	Inhabits coastal chaparral, oak and pine woodland, cultivated areas, and arid desert scrub communities. Requires rocky areas or areas of dense vegetation. Utilizes rodent burrows, cracks in rocks and surface cover objects for cover. Species is seasonally active, with the greatest activity occurring from March to June. Young are live-born from mid-August to October in quiet, safe locations (0-3,000 ft.).	A	**Presumed Absent:** The BSA lacks coastal chaparral and oak and pine woodland communities. It is adjacent to desert scrub communities, but largely lacks sufficient rocky areas and dense vegetation which the species is known to inhabit. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area and the species was not observed during June 2020 biological surveys. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Plant Species						
Abrams' spurge	*Euphorbia abramsiana*	Fed: State: CNPS:	-- -- 2B.2	An annual herb found in creosote bush scrub within the Mojave and Sonoran Deserts. Blooms September-November (-15-4,300 ft.).	A	**Presumed Absent:** The BSA lacks creosote bush scrub and is highly disturbed. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Arizona spurge	*Euphorbia arizonica*	Fed: State: CNPS:	-- -- 2B.3	A perennial herb inhabiting sandy soils in Sonoran desert scrub communities. Blooms March-April (160-1,000 ft.).	A	**Presumed Absent:** While the BSA is adjacent to some desert scrub communities, it is already highly disturbed and thus unlikely to support rare plant species. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Booth's evening-primrose	*Eremothera boothii ssp. boothii*	Fed: State: CNPS:	-- -- 2B.3	An annual herb inhabiting sandy flats and steep loose slopes of Joshua tree woodland and pinyon/juniper woodland. Flowers April-September (2,600-7,900 ft.).	A	**Presumed Absent:** The BSA lacks Joshua tree woodland and pinyon/juniper woodland inhabited by the species. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
California ayenia	*Ayenia compacta*	Fed: State: CNPS:	-- -- 2B.3	A perennial herb inhabiting sandy, gravelly, rocky washes and dry canyons of Mojavean desert scrub and Sonoran desert scrub communities. Blooms March-April (500-3,600 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but lacks canyon terrain and is highly disturbed. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 5.1 miles west of the Project area (2016). Due to the lack of suitable habitat and the lack of nearby occurrences, the species is presumed absent from the BSA.
California ditaxis	*Ditaxis serrata var. californica*	Fed: State: CNPS:	-- -- 3.2	A perennial herb inhabiting washes and canyons of Sonoran desert scrub communities. Blooms March-December (100-3,300 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but lacks canyon terrain and is highly disturbed. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1980) occurrence of the species is approximately 7.4 miles east of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
California marina	*Marina orcuttii var. orcuttii*	Fed: State: CNPS:	-- -- 1B.3	A perennial herb inhabiting rocky soils of chaparral, pinyon/juniper woodland, and Sonoran desert scrub communities. Flowers May-October (3,400-3,800 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range and lacks chaparral and pinyon/juniper woodland. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Chaparral sand-verbena	*Abronia villosa var. aurita*	Fed: State: CNPS:	-- -- 1B.1	An annual herb inhabiting sandy soils of chaparral, coastal sage scrub, and desert dune communities. Flowers March-September (250-5,250 ft.).	A	**Presumed Absent:** The BSA is highly disturbed and lacks chaparral, coastal sage scrub, and desert dune communities inhabited by the species. The nearest,

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 6.5 miles east of the Project area (2012). Due to the disturbed nature of the BSA, the lack of suitable habitat, and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Coachella Valley milk-vetch	*Astragalus lentiginosus var. coachellae*	Fed: State: CNPS:	-- -- 1B.2	An annual herb, inhabiting loose, wind-blown, or alluvial sands of desert dunes and Sonoran desert scrub communities. Blooms February-May (0-,2150 ft.).	A	**Presumed Absent:** The BSA lacks loose sands and dune habitats. In addition, it is highly disturbed and unlikely to support the species. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1927) occurrence of the species is approximately 4.9 miles east of the Project area. Due to the disturbed nature of the BSA, the lack of suitable habitat, and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Cove's cassia	*Senna covesii*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb inhabiting dry, sandy desert washes and slopes of desert wash and Sonoran desert scrub communities. Blooms March-April (1,000-3,510 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but is highly disturbed and is unlikely to support the species. In addition, the BSA is below the species' elevation range. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 7.7 miles southwest of the Project area (2016). Due to the disturbed nature of the BSA, the lack of suitable habitat, and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Creamy blazing star	*Mentzelia tridentate*	Fed: State: CNPS:	-- -- 1B.3	An annual herb inhabiting rocky, gravelly, and sandy soils of Mojavean desert scrub and creosote-bush scrub communities. Blooms April-May (2,300-3,800 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but is highly disturbed and unlikely to support the species. In addition, there are no CNDDB occurrences within a 10-mile radius of the

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						Project area. Due to the disturbed nature of the BSA, the lack of suitable habitat, and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Deep Canyon snapdragon	*Pseudorontiu cyathiferum*	Fed: State: CNPS:	-- -- 2B.3	An annual herb inhabiting washes, rocky slopes and rocky soils of the Sonoran desert scrub community. Known only from the Deep Canyon area. Flowers February-April (0-2,600 ft.).	A	**Presumed Absent:** The BSA lacks rocky slopes inhabited by the species. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area, which is more than 10 miles away from the Deep Canyon area. Due to the lack of suitable habitat, the lack of local, recent occurrences, and the location of the only known area of occurrences, the species is presumed absent from the BSA.
Desert spike-moss	*Selaginella eremophila*	Fed: State: CNPS:	-- -- 2B.2	A perennial rhizomatous herb inhabiting sandy or gravelly soils of shaded sites, bases of rocks and crevices within chaparral and Sonoran desert scrub communities. Flowers May-July (660-3,600 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but is highly disturbed and unlikely to support the species. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the disturbed nature of the BSA, the lack of suitable habitat, and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Flat-seeded spurge	*Euphorbia platysperma*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting desert dunes and sandy soils of Sonoran desert scrub communities. Flowers May (0-330 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but lacks dune habitat and is highly disturbed, so it is unlikely to support the species. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Glandular ditaxis	*Ditaxis claryana*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb inhabiting sandy soils of creosote bush scrub, desert wash, Mojavean desert scrub and Sonoran desert scrub communities. Blooms December-March (0-1,530 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but lacks creosote bush scrub and is highly disturbed. In addition, the nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						is approximately 5.8 miles northwest of the Project area (2014). Due to the lack of suitable habitat and the lack of local occurrences, the species is presumed absent from the BSA.
Gravel milk-vetch	*Astragalus sabulonum*	Fed: State: CNPS:	-- -- 2B.2	An annual to perennial herb inhabiting sandy and sometimes gravelly soils of flats, washes and roadsides within desert dune, Mojavean scrub, and Sonoran desert scrub communities. Species has some salt tolerance. Blooms February-June (-200-3,050 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but lacks dunes and is highly disturbed. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1985) occurrence of the species is approximately 4.5 miles east of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Harwood's eriastrum	*Eriastrum harwoodii*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting sandy desert dunes of creosote bush scrub communities. Flowers March-June (410-3,280 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range and lacks sandy desert dunes. Furthermore, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1939) occurrence of the species is approximately 8.0 miles west of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Jackass-clover	*Wislizenia refracta ssp. refracta*	Fed: State: CNPS:	-- -- 2B.2	An annual herb inhabiting sandy washes, roadsides, and alkaline flats of desert dune, Mojavean desert scrub, playa, and Sonoran desert scrub communities. Blooms April-October (2,000-2,600 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range and is highly disturbed, lacking alkaline flats and desert scrub communities. Furthermore, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1936) occurrence of the species is approximately 9.2 miles northeast of the

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Lancaster milk-vetch	*Astragalus preussii var. laxiflorus*	Fed: State: CNPS:	-- -- 1B.1	A perennial herb inhabiting alkaline flats of chenopod scrub communities. Species is only known in California only from near Lancaster and Edwards Air Force Base. Blooms March-May (2,300 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1928) occurrence of the species is approximately 5.5 miles northwest of the Project area. Due to the lack of habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Latimer's woodland-gilia	*Saltugilia latimeri*	Fed: State: CNPS:	-- -- 1B.2	An annual herb inhabiting dry desert slopes and coarse sand to rocky soils (often granitic) and sometimes washes of chaparral, Mojavean desert scrub, and pinyon and juniper forest communities. Flowers March-June (1,300-6,200 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range and lacks slopes. Chaparral, and pinyon/juniper communities inhabited by the species. Furthermore, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1937) occurrence of the species is approximately 7.8 miles east of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Little-leaf elephant tree	*Bursera microphylla*	Fed: State: CNPS:	-- -- 2B.3	A perennial tree inhabiting rocky slopes of Sonoran desert scrub communities. Blooms in June (0-2,300 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but is relatively flat and lacks rocky slopes. In addition, the BSA is highly disturbed and highly unlikely to support the species. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 6.6 miles

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						west of the Project area (2000). Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Mecca-aster	*Xylorhiza cognata*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb inhabiting arid canyons and washes of creosote-bush scrub and Sonoran desert scrub communities. Species is known mostly from Indio Hills and Mecca Hills. Blooms January-June (65-1,300 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but lacks canyons and is high disturbed, so it is unlikely to support the species. In addition, the BSA is approximately 6.7 and 17.6 miles south of Indio Hills and Mecca Hills, where the species is known to occur. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 6.1 miles northeast of the Project area (2012). Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Narrow-leaf sandpaper-plant	*Petalonyz linearis*	Fed: State: CNPS:	-- -- 2B.3	A perennial shrub inhabiting sandy or rocky canyons of Mojavean desert scrub and Sonoran desert scrub communities. Species generally occurs in creosote-bush scrub. Blooms March-May (-80-3,660 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but lacks sandy or rocky canyons and is highly disturbed, so it is unlikely to support the species. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1979) occurrence of the species is approximately 4.9 miles northeast of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Palmer's jackass clover	*Wislizenia refracta ssp. palmeri*	Fed: State: CNPS:	-- -- 2B.2	A perennial deciduous shrub inhabiting chenopod scrub, desert dunes, Mojavean desert scrub, playas, Sonoran desert scrub and Sonoran thorn woodland communities. Blooms April-November (0-984 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities; however, it is highly disturbed an unlikely to support the species. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						occurrences, the species is presumed absent from the BSA.
Prickle-leaf	*Hecastocleis shockleyi*	Fed: State: CNPS:	-- -- 3	A shrub inhabiting dry, rocky slopes in creosote bush scrub and shadescale scrub communities. Blooms May-July (3,200-7,200 ft.).	A	**Presumed Absent:** The BSA lacks creosote bush scrub and shadscale scrub communities inhabited by the species and is outside the species' preferred elevation range. In addition, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Purple stemodia	*Stemodia durantifolia*	Fed: State: CNPS:	-- -- 2B.1	A small perennial herb found on wet sand or rocks within riparian habitats in the foothills surrounding Palm Springs and San Diego. Blooms year round (0-1,300 ft.).	A	**Presumed Absent:** The BSA lacks riparian habitat inhabited by the species. In addition, the BSA is relatively flat and is not located in the foothills. There are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Rau's jaffuliobryum moss	*Jaffueliobryum raui*	Fed: State: CNPS:	-- -- 2B.3	A moss found in carbonate, dry openings and rock crevices within alpine dwarf scrub, chaparral, Mojavean desert scrub, and Sonoran desert scrub plant communities (1,600-6,900 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range and lacks alpine dwarf scrub and chaparral communities inhabited by the species. Furthermore, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1963) occurrence of the species is approximately 7.1 miles west of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
San Bernardino milk-vetch	*Astragalus bernardinus*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb found within Joshua tree woodlands and pinyon/juniper woodland communities. The species	A	**Presumed Absent:** The BSA is below the species' elevation range and lacks Joshua tree woodland and pinyon/juniper

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				is frequently associated with granitic or carbonate soils and in stony areas among junipers. Blooms April-June (2,950-7,550 ft.).		woodland communities inhabited by the species. Furthermore, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Santa Rosa Mountains leptosiphon	*Leptosiphon floribundus ssp. hallii*	Fed: State: CNPS:	-- -- 1B.3	A perennial herb inhabiting desert canyons of pinyon and juniper woodland and Sonoran desert scrub communities. Species is known only from the Santa Rosa Mountains. Blooms in May (3,280-6,560 ft.).	A	**Presumed Absent:** The BSA lacks canyons and pinyon/juniper woodland habitat inhabited by the species. Furthermore, the BSA is below the elevation range of the species and is not located within the Santa Rosa Mountains. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1902) occurrence of the species is approximately 3.7 miles west of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Shaggy-haired alumroot	*Heuchera hirsutissima*	Fed: State: CNPS:	-- -- 1B.3	A perennial herb (rhizomatous) endemic to California, inhabiting rocky areas in subalpine forest and red fir forest communities. Flowers June-July (7,200-11,500 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range and lacks subalpine forest and red fir forest communities inhabited by the species. Furthermore, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Singlewhorl burrobrush	*Ambrosia monogyra*	Fed: State: CNPS:	-- -- 2B.2	A perennial shrub inhabiting sandy soils within chaparral and Sonoran desert scrub communities. Blooms August-November (30-1,640 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but is highly disturbed and unlikely to support the species. In addition, there are no recent

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
						(<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1922) occurrence of the species is approximately 1.3 miles east of the Project area. Despite nearby occurrences, the species is presumed absent from the BSA due to the lack of recent occurrences and the disturbed nature of the BSA.
Slender cottonheads	*Nemacaulis denudata var. gracilis*	Fed: State: CNPS:	-- -- 2B.2	An annual herb inhabiting sandy soils of coastal dunes, desert dunes, and Sonoran desert scrub communities. Blooms March-May (-160-1,640 ft.).	A	**Presumed Absent:** The BSA is adjacent to desert scrub communities but is highly disturbed and lacks dune habitat. In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1922) occurrence of the species is approximately 1.3 miles east of the Project area. Despite nearby occurrences, the species is presumed absent from the BSA due to the lack of recent occurrences and the disturbed nature of the BSA.
Slender-stem bean	*Phaseolus filiformis*	Fed: State: CNPS:	-- -- 2B.1	An annual herb inhabiting washes of Sonoran desert scrub communities. Species is known in CA from only one occurrence in the Coachella Valley. Blooms in April (390-430 ft.).	A	**Presumed Absent:** While the BSA is adjacent to desert scrub communities, it is highly disturbed and unlikely to support this species. It is also below the species' elevation range In addition, there are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1982) occurrence of the species is approximately 3.4 miles west of the Project area. Due to the lack of suitable habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Sonoran maiden fern	*Thelypteris puberula var. sonorensis*	Fed: State: CNPS:	-- -- 2B.2	A perennial rhizomatous fern herb occurring along streams, seepage areas, and meadows. Reproductive	A	**Presumed Absent:** The BSA lacks streams, seepage areas, and meadows inhabited by the species. Furthermore,

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
				from January-September (160-2,000 ft.).		there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Spear-leaf matelea	*Matelea parvifolia*	Fed: State: CNPS:	-- -- 2B.3	A perennial herb inhabiting rocky soils and dry, rocky areas of Mojavean desert scrub and Sonoran desert scrub. Flowers March-May (1,450-3,600 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range. In addition, the nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 8.4 miles southwest of the Project area (2016). Due to the lack of habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	Fed: State: CNPS:	-- -- 1B.2	A perennial herb inhabiting sandy or gravelly soils within exposed rocky slopes and canyon walls along desert washes of Joshua tree woodland and Sonoran desert scrub communities. Blooms February-May (1,475-3,900 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range and lacks rocky slopes and canyon walls in Joshua tree woodland. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 7.8 miles southwest of the Project area (2017). Due to the lack of suitable habitat within the species' elevation range the species is presumed absent from the BSA.
Wavyleaf twinvine	*Funastrum crispum*	Fed: State: CNPS:	-- -- 2B.2	A perennial herb inhabiting open, dry, stony, or rocky ground. Blooms May-August (4,000 ft.).	A	**Presumed Absent:** The BSA is below the species' elevation range. Furthermore, there are no CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of habitat within the species' elevation range and the lack of local, recent occurrences, the species is presumed absent from the BSA.

Federal Designations (Fed): (FESA, USFWS)		**State Designations (CA):** (CESA, CDFW)	
E: Federally listed, endangered	CE: Candidate Endangered	**E:** State-listed, endangered	CE: Candidate Endangered
T: Federally listed, threatened	CT: Candidate Threatened	**T:** State-listed, threatened	CT: Candidate Threatened
D: Federally listed, delisted		**D**: State-listed, delisted	

Other Designations
CDFW_SSC: CDFW Species of Special Concern
CDFW_FP: CDFW Fully Protected

California Native Plant Society (CNPS) Designations:
Note: according to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.
1A: Plants presumed extinct in California.
1B: Plants rare and endangered in California and throughout their range.
2: Plants rare, threatened, or endangered in California but more common elsewhere in their range.
3: Plants about which need more information; a review list.

Plants 1B, 2, and 3 extension meanings:
.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Fairly endangered in California (20-80% occurrences threatened)
.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

Habitat Potential
Absent [A] - No habitat present and no further work needed.
Habitat Present [HP] - Habitat is, or may be present. The species may or may not be present.
Critical Habitat [CH] – Project is within designated Critical Habitat.

Potential for Occurrence Criteria:
Present: Species was observed on site during a site visit or focused survey.
High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site.
Low-Moderate: Either low quality habitat (including soils and elevation factors) for the species occurs on site and a known occurrence exists within 5 miles of the site; or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search.
Presumed Absent: Focused surveys were conducted, and the species was not found, or species was found within the database search but habitat (including soils and elevation factors) do not exist on site, or the known geographic range of the species does not include the survey area.

Source: CDFW 2020, CNDDB 2020, CNPS 2020, Calflora 2020, Jepson 2020, 2020; USFWS 2020, iNaturalist 2020, USFWS 2013, City of San Diego 2017, CNPS 1995, CWHR 2020.

Chapter 4 Results: Biological Resources, Discussion of Impacts, and Mitigation

4.1 Habitats and Natural Communities of Special Concern

The BSA is within the Sonoran Desert Subregion of the California Desert region floristic province (Jepson 2020). This district is characterized by low rainfall and hot, dry summers. Preliminary literature research was conducted to determine the natural communities of special concern with the potential to occur in the vicinity of the Project. A review of IPaC, CNDDB, CNPS, and online databases concluded that one natural community of special concern had the potential to occur within the Project vicinity (Desert Fan Palm Oasis Woodland). There are three CNDDB occurrences of this natural community within a 10-mile radius of the Project area. The closest occurrence of Desert Fan Palm Oasis Woodland is approximately 6.5 miles south of the Project area. Field surveys conducted by Dokken Engineering biologists on June 3, 2020 involved a habitat assessment, which confirmed the absense of Desert Fan Palm Oasis Woodland from the BSA. During biological surveys, desert scrub habitat was identified within and adjacent to the BSA. According to the CVMSHCP, desert scrub communities such as Desert Saltbush Scrub and Desert Sink Scrub are protected within the Willow Hole Conservation Area. The Project area is not within the Willow Hole Conservation Area, so the desert scrub within and adjacent to Project activities is not considered a natural community of special concern. Based on these results from literature and field research, there are no natural communities of special concern within the BSA.

The BSA is located within the Salton Sea watershed, which encompasses the central part of Riverside County, the eastern portion of San Diego County, and most of Imperial County. In addition, the Whitewater River channel is located to the east of the Project area. This channel runs north to south, draining into the Salton Sea. The Salton Sea receives inflow from the Whitewater River and a number of smaller channels, some of which may intersect the Project area. Development in the Coachella Valley threatens the volume of inflow to the Salton Sea, leading to the increase of salinity which could have a variety of impacts to humans and wildlife in the area.

4.1.1 Discussion of Wetlands

According to National Wetlands Mappers, there is one 1.62-acre area of freshwater emergent wetland that intersects the BSA, located approximately ¼ mile south of the intersection of 70th Avenue and Harrison Street, directly off the eastern shoulder of Harrison Street (NWI 2020). Biological surveys conducted on June 3, 2020 determined that the 1.62-acre area of freshwater emergent wetland identified in the National Wetlands Mappers is not considered a jurisdictional wetland, according to the standards set by the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 2008). The feature was constructed independent of existing surface water features and lacks connectivity to a stream channel; therefore, it is considered non-jurisdictional by USACE standards. Due to the results of the biological field surveys, no impacts to wetlands are anticipated within the BSA.

4.1.2 Discussion of Jurisdictional Waters

4.1.2.1 Survey Results of Jurisdictional Waters

The EPA's Google Earth Water Layer and the USFWS National Wetlands Inventory reveal that there are three unnamed channels that pass through the BSA. For the purposes of this NES, these features are referred to as the 73rd Avenue canal, 68th Avenue riverine channel, and the 66th Avenue canal. In addition to these features, there are five small man-made water basins that intersect the Project area. Two of these are located on Pierce Street and the other three are located on Harrison Street (Figure 5. Jurisdictional Waters) (EPA 2020, NWI 2020).

Biological surveys conducted on June 3, 2020 included observation and photographic documentation of existing surface water features. Following field surveys, a review of the literature and field observations determined that the 68th Avenue riverine channel and the 66th Avenue canal are considered jurisdictional

waters, based on observation of drainage patterns of the channels, historical connection to natural stream channels, and connectivity to the Salton Sea. The extent of these features is discussed below and anticipated impacts to these waters are discussed in the following sections. The 73rd Avenue canal and all five surface water basins were determined to be non-jurisdictional. These features are man-made, concrete lined basins, constructed in otherwise dry land and completely outside of natural surface water features. They were determined to be non-jurisdictional due to their lack of connectivity with any of the channels within their vicinity. The 73rd Avenue canal in particular follows no natural drainage patterns and historical aerials reveal that it was constructed independent of existing channels for irrigation purposes. It is an ephemeral canal, collecting drainage coming off an alluvial fan located to the east of the Project area. In addition, the basins do not provide aquatic habitat, as they are often dry and lack vegetative features. Figure 5 depicts all potential water resources that intersect the BSA and indicates their jurisdictional status.

68th Avenue Riverine Channel

This unnamed riverine canal is human-excavated and crosses Harrison Street (and thus the Project area) in two places: at the intersection of Harrison Street and 68th Avenue and under an unnamed bridge approximately 0.50 miles southeast of the same intersection. It crosses the Project area again at the intersection of Pierce Street and 68th Avenue and eventually converges with the 66th Avenue canal before connecting to Whitewater River. The convergence of these water features has downstream connectivity with the Salton Sea southeast of the Project area. Historic aerial imagery indicates that this feature is a channelized natural drainage that connects draining surface water to Whitewater River and the Salton Sea. Surface water only persists during a part of the year, and the channel is dry for the remaining months.

66th Avenue Canal

The majority of this unnamed irrigation canal runs southeast along 66th Avenue and through the northeast corner of the Project area. It also runs south along Tyler Street, then takes a diagonal course southwest to intersect Harrison Street. This canal crosses the Project area in three places: on Harrison Street, on 66th Avenue, and on Pierce Street. The canal eventually converges with the 68th Avenue riverine channel; however, this convergence occurs outside of the Project area. Eventually, the canal feeds into Whitewater River, which connects to the Salton Sea.

4.1.2.2 Project Impacts to Jurisdictional Waters

There are approximately 10.05 acres of jurisdictional waters within the BSA. The Project would permanently impact approximately 0.01 acres and temporarily impact approximately 0.06 acres of the 66th Avenue Canal due to the construction of the trail over the existing canals. The Project has been designed to minimize permanent hydraulic impacts to the aquatic resources within the BSA. Crossings over the other channels within the BSA would be required for construction of the Project; however, they would be light duty, avoid impacts to the hydraulic function of the existing channels, and avoid placement of new piers within waterways. Construction and staging activities on these crossings would occur in adjacent barren or roadway areas, avoiding impacts to the channels (Figure 6. Project Impacts). The following avoidance, minimization, and mitigation measures would avoid any further impacts to jurisdictional waters within the BSA.

4.1.2.3 Avoidance and Minimization Efforts for Jurisdictional Waters

The following avoidance and minimization efforts will be implemented to reduce potential impacts to jurisdictional waters.

BIO-1: Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction:

- Implementation of the Project shall require approval of a site-specific Storm Water Pollution Prevention Plan (SWPPP) or Water Pollution Control Program (WPCP) that would implement effective measures to protect regional water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;

- Existing vegetation will be protected in place where feasible to provide an effective form of erosion and sediment control;
- Soil exposure must be minimized through the use of temporary BMPs, groundcover, and stabilization measures;
- The contractor must conduct periodic maintenance of erosion and sediment-control measures.

BIO-2: Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants must remain outside of sensitive habitat marked with high-visibility fencing. Any necessary equipment washing must occur where the water cannot flow into sensitive habitat communities.

BIO-3: Equipment will be checked daily for leaks and will be well maintained to prevent lubricants and any other deleterious materials from entering waterways within the BSA.

BIO-4: The 68th Avenue riverine channel and 66th Avenue canal shall be established as an Environmentally Sensitive Area (ESA). Prior to ground disturbance, the project limits adjacent to the jurisdictional feature shall be marked off with high visibility orange fencing (ESA Fencing) to prevent encroachment into the ESA. Construction equipment, materials, and personnel shall not be permitted beyond the ESA fencing.

4.1.2.4 Compensatory Mitigation for Jurisdictional Waters

The Project would incorporate **BIO-1** through **BIO-4** in order to ensure that temporary impacts to jurisdictional waters are in fact temporary. In addition, any permanent impacts to waters that may occur would require mitigation via the purchase of aquatic resource credits. The following mitigation measure would be implemented to mitigate for any permanent loss of jurisdictional waters, specifically the 66th Avenue Canal.

BIO-5: Permanent impacts will require compensatory mitigation for jurisdictional waters. Compensation can be a combination of enhancement, restoration, and/or rehabilitation. Compensation can also occur through the purchase of credits through a local in-lieu fee program or other agency-approved mitigation provider of federal and state jurisdictional water resources. Final mitigation ratios and mitigation types will be determined during the permitting process.

4.1.2.5 Cumulative Impacts to Jurisdictional Waters

The Project has been designed to reduce impacts to the jurisdictional waters within the BSA and is not anticipated to impact the hydraulic function of existing drainage structures, nor would it construct any significant new drainage structures. In addition, the County of Riverside does not have any planned projects within the communities of Thermal and Oasis in the near future that would impact jurisdictional waters, therefore the Project would not contribute to regional impacts. No cumulative impacts to jurisdictional waters are anticipated.

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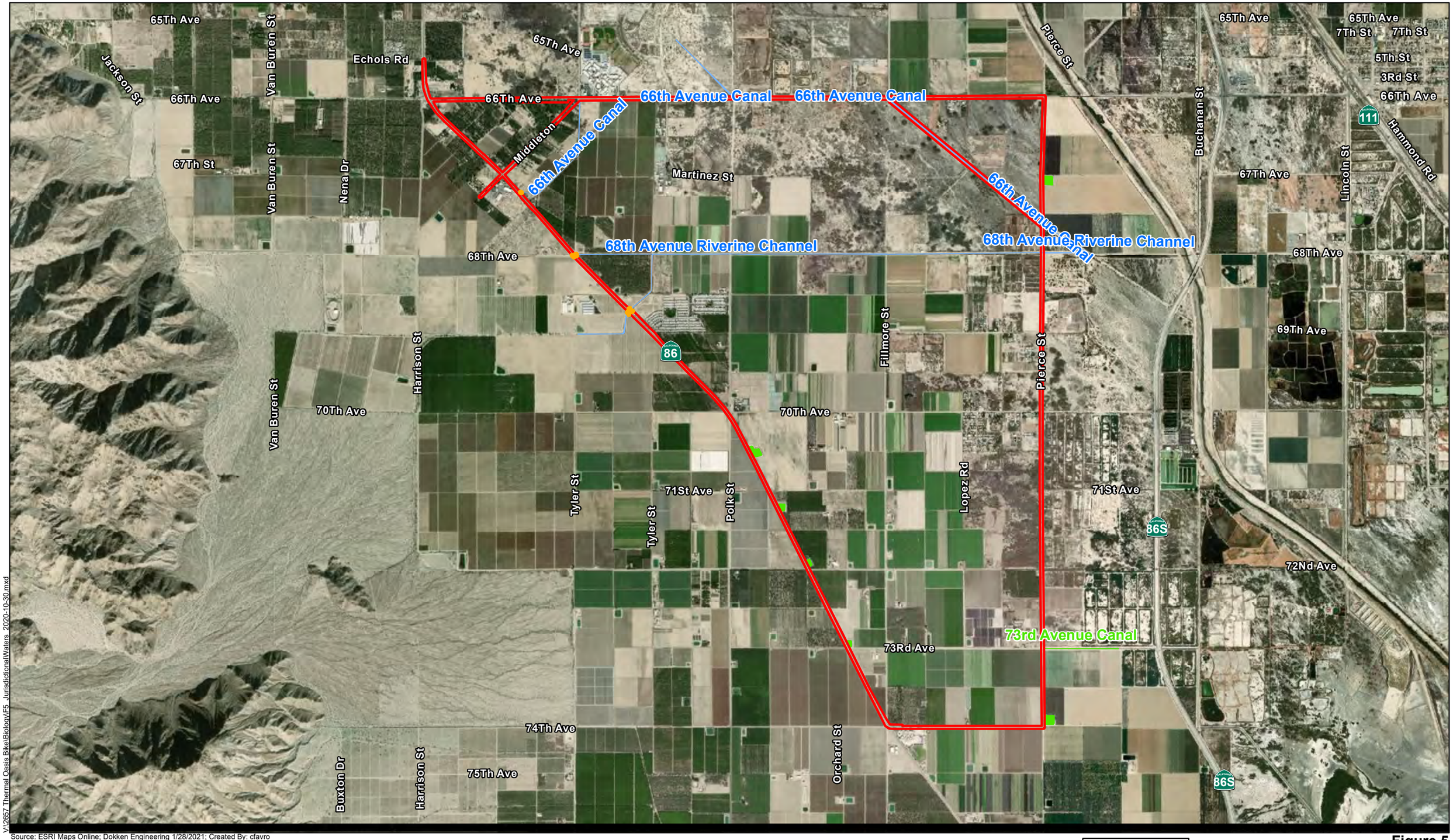

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Source: ESRI Maps Online; Dokken Engineering 1/28/2021; Created By: cfavro

1 inch = 3,000 feet

0 1,500 3,000 4,500 6,000 7,500 Feet

Project Area | Jurisdictional Waters | Non Jurisdictional Waters | Proposed ESA Fencing

Figure 5
Page 1 of 6
Jurisdictional Waters
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

65Th Ave

66Th Ave

66th Avenue Canal

Middleton

Tyler St

Martinez St

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Source: ESRI Maps Online; Dokken Engineering 1/28/2021; Created By: cfavro

1 inch = 400 feet

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Project Area | Jurisdictional Waters | Non Jurisdictional Waters | Proposed ESA Fencing

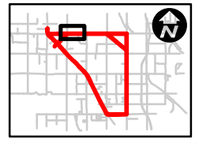

Figure 5
Page 2 of 6
Jurisdictional Waters
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Project Area | Jurisdictional Waters | Non Jurisdictional Waters | Proposed ESA Fencing

Figure 5
Page 3 of 6
Jurisdictional Waters
Thermal/Oasis Active Transportation Project
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Riverside County, California

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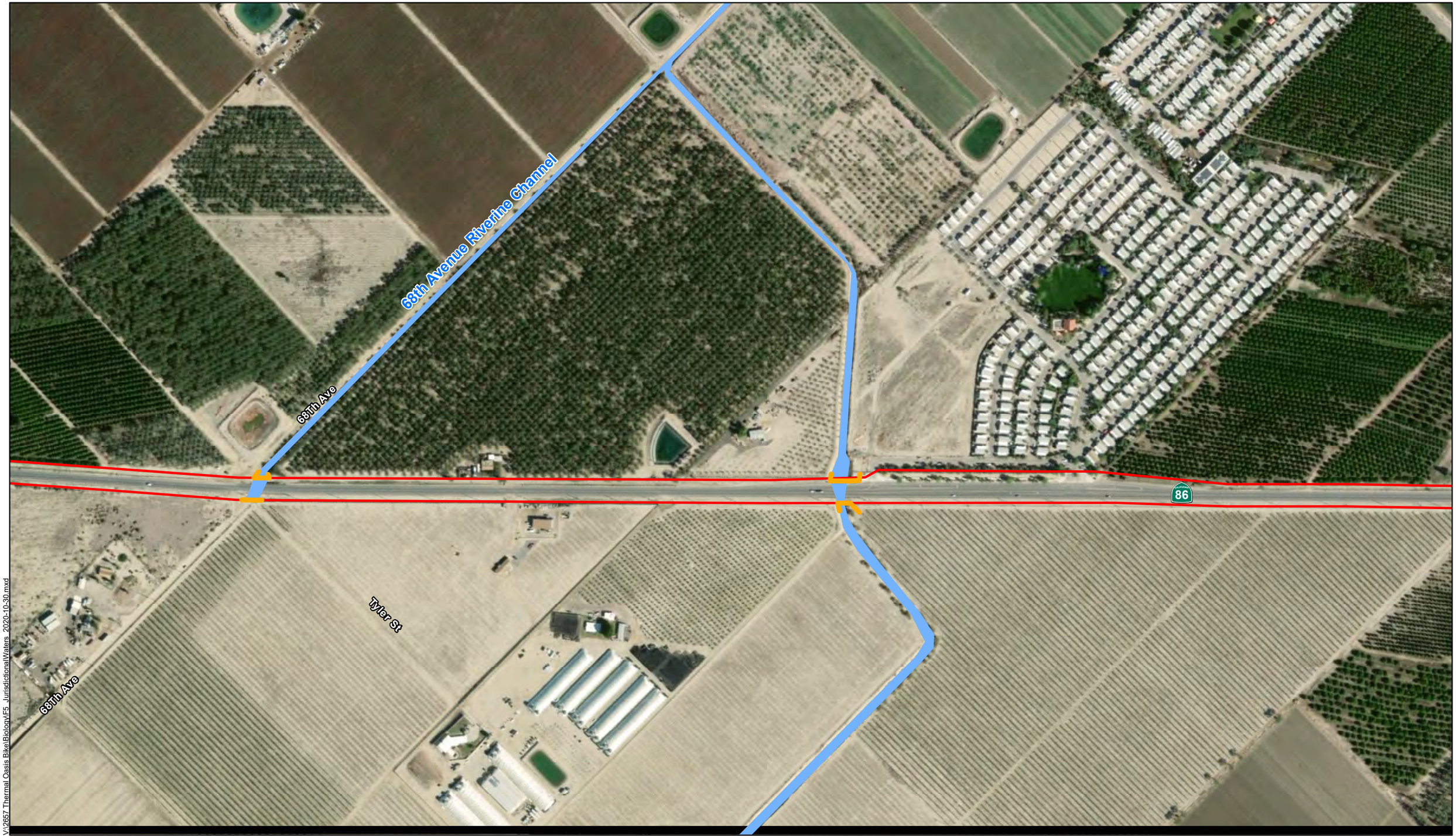
Project Area | Jurisdictional Waters | Non Jurisdictional Waters | Proposed ESA Fencing

Figure 5
Page 4 of 6
Jurisdictional Waters
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California



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Project Area | Jurisdictional Waters | Non Jurisdictional Waters | Proposed ESA Fencing

Figure 5
Page 6 of 6
Jurisdictional Waters
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

Project Area

Temporary Impact Areas

- Agriculture (3.51 acres)
- Barren (16.73 acres)
- Desert Scrub (4.65 acres)
- Irrigation Canal (0.06 acres)
- Roadway/Roadside (9.47 acres)
- Ruderal Vegetation (2.59 acres)
- Urban (0.97 acres)

Permanent Impact Areas

- Agriculture (1.15 acres)
- Barren (10.54 acres)
- Desert Scrub (3.17 acres)
- Irrigation Canal (0.01 acres)
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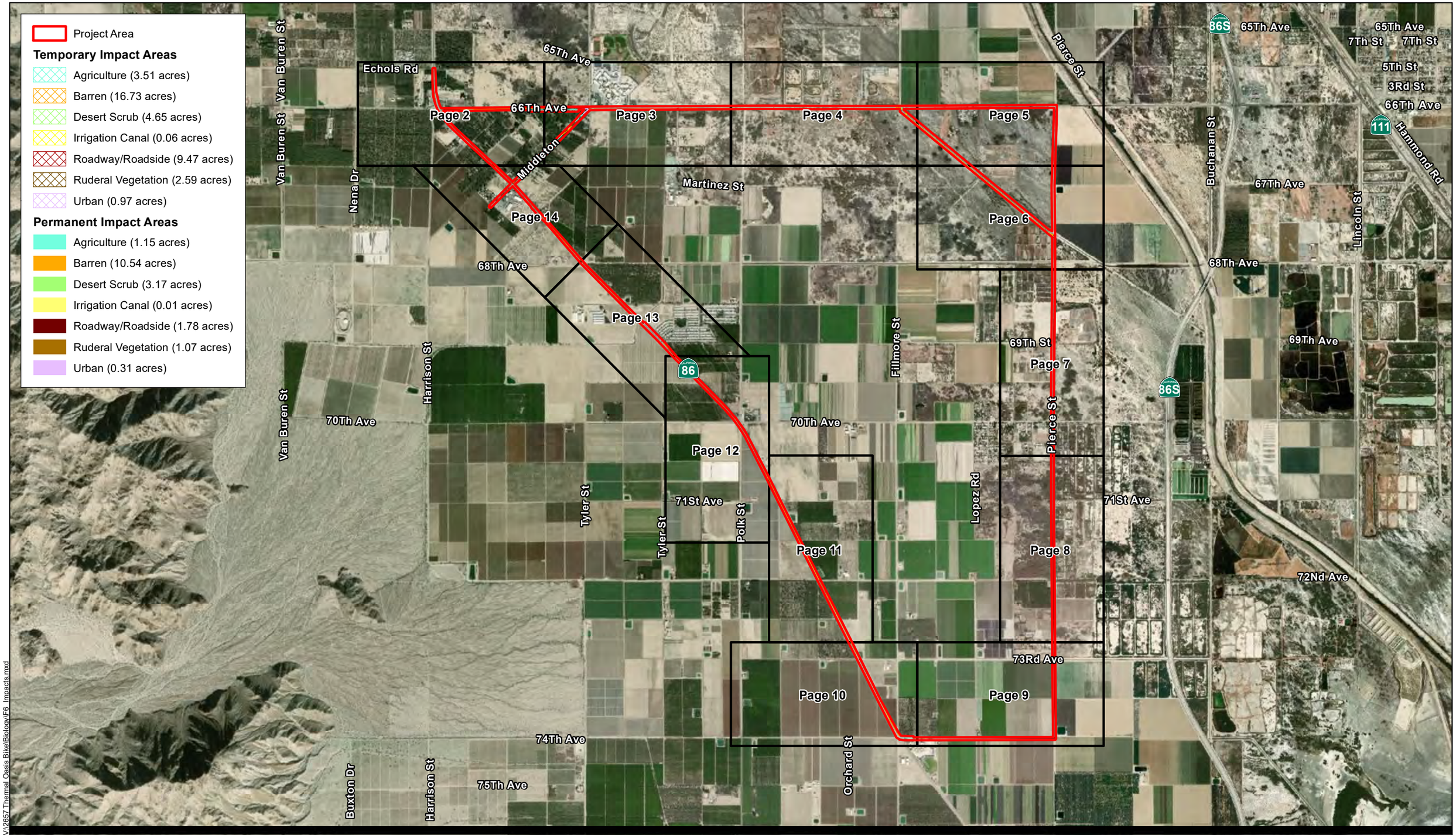
- Urban (0.31 acres)



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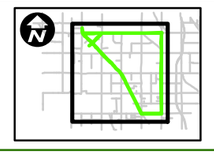

Figure 6
Page 1 of 14
Project Impacts
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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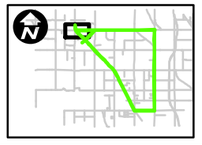

Figure 6
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Project Impacts
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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66Th Ave

Page 3

Middleton

Tyler St

Martinez St

Page 14

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Figure 6
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Project Impacts
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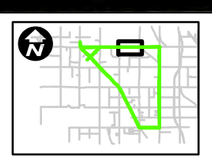

Figure 6
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Project Impacts
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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Project Impacts
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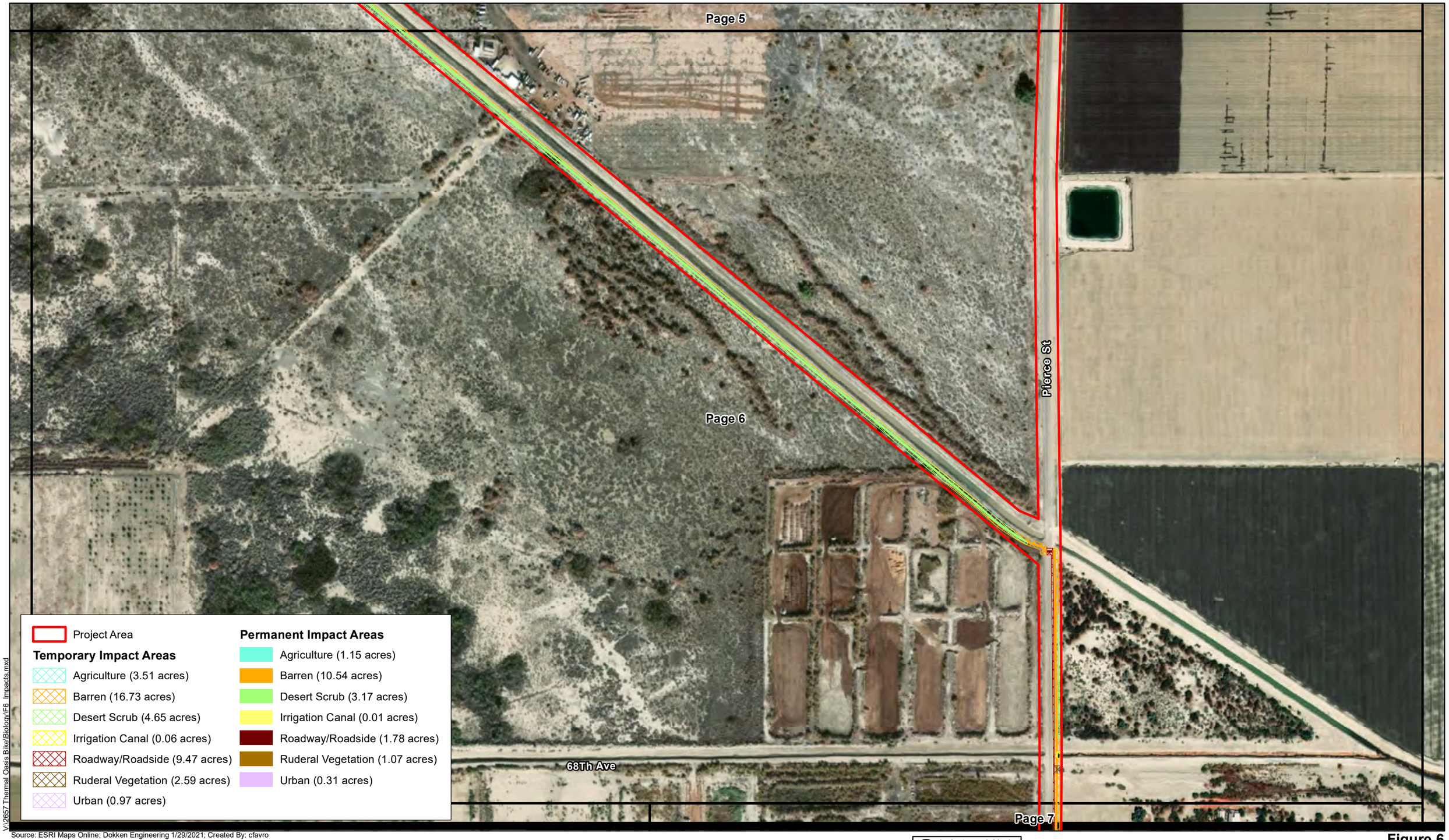
ATPL-5956 (273)
Riverside County, California



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Project Impacts
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Riverside County, California

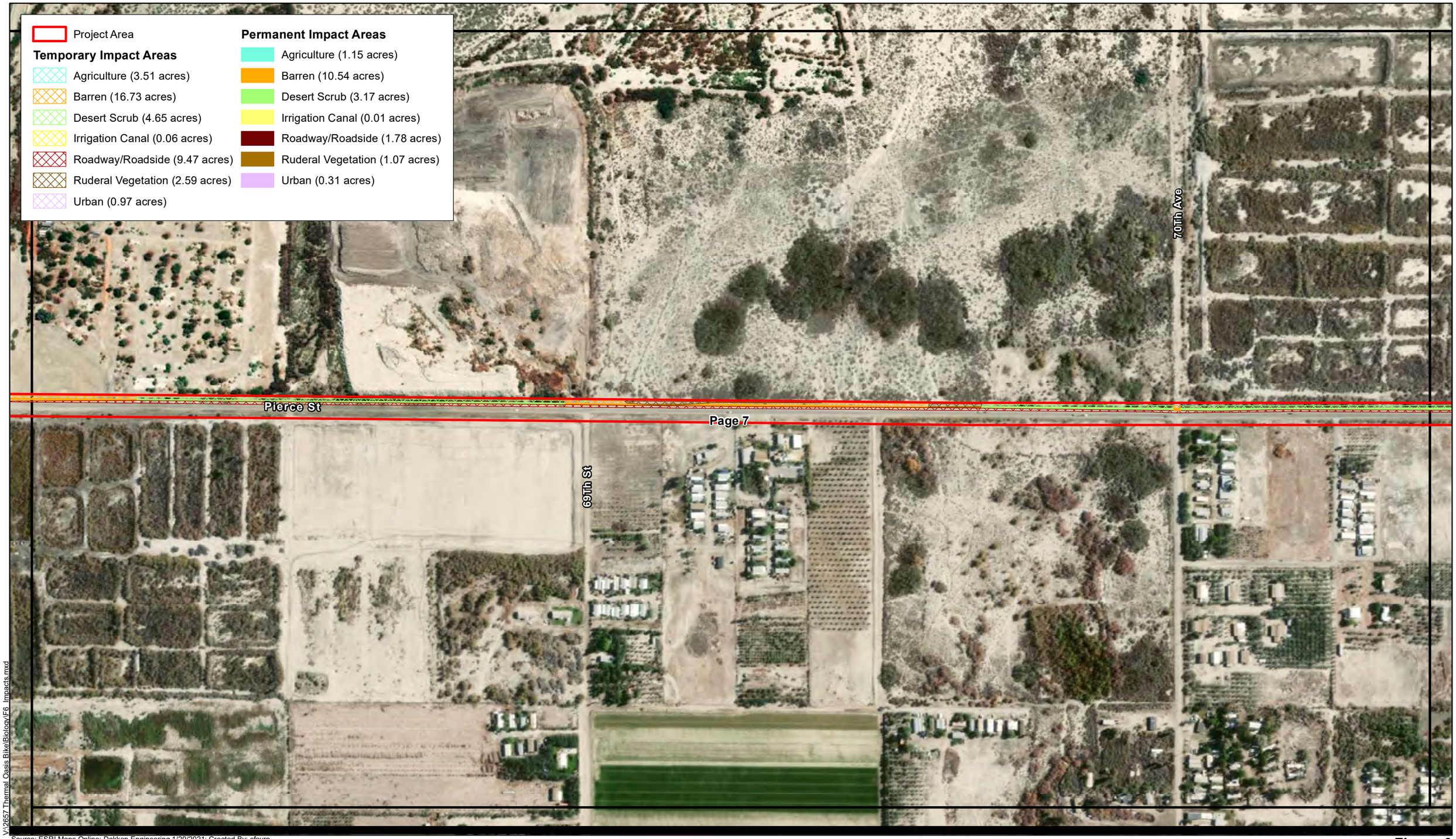

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Figure 6
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Project Impacts
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Riverside County, California

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Page 8

Lopez Rd

73Rd Ave

Page 9

Pierce St

74Th Ave

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Figure 6
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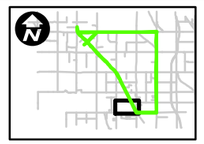

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Project Impacts
Thermal/Oasis Active Transportation Project
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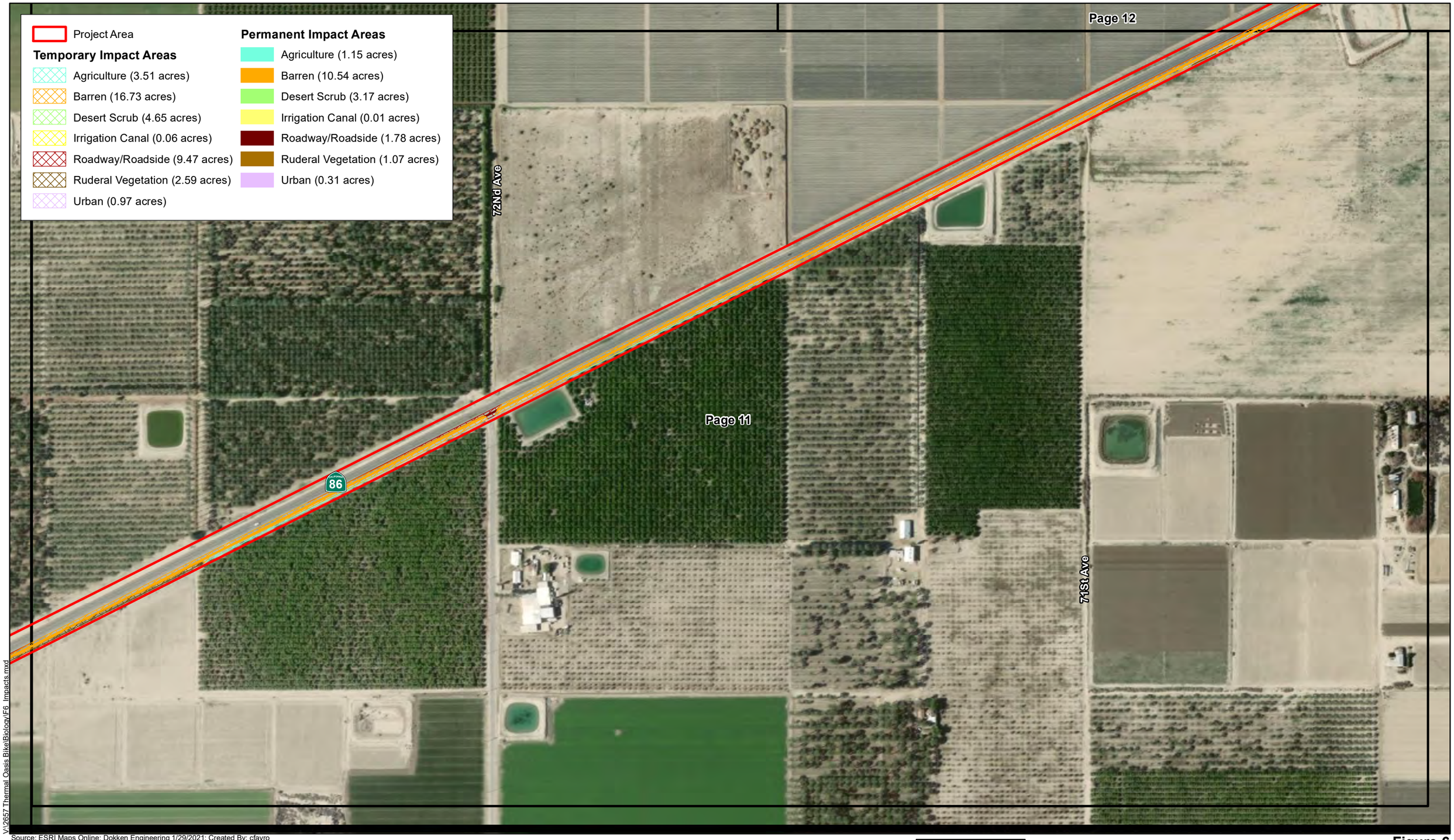

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Figure 6
Page 11 of 14
Project Impacts
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

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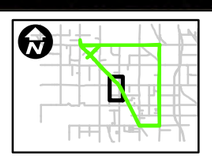

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Project Impacts
Thermal/Oasis Active Transportation Project
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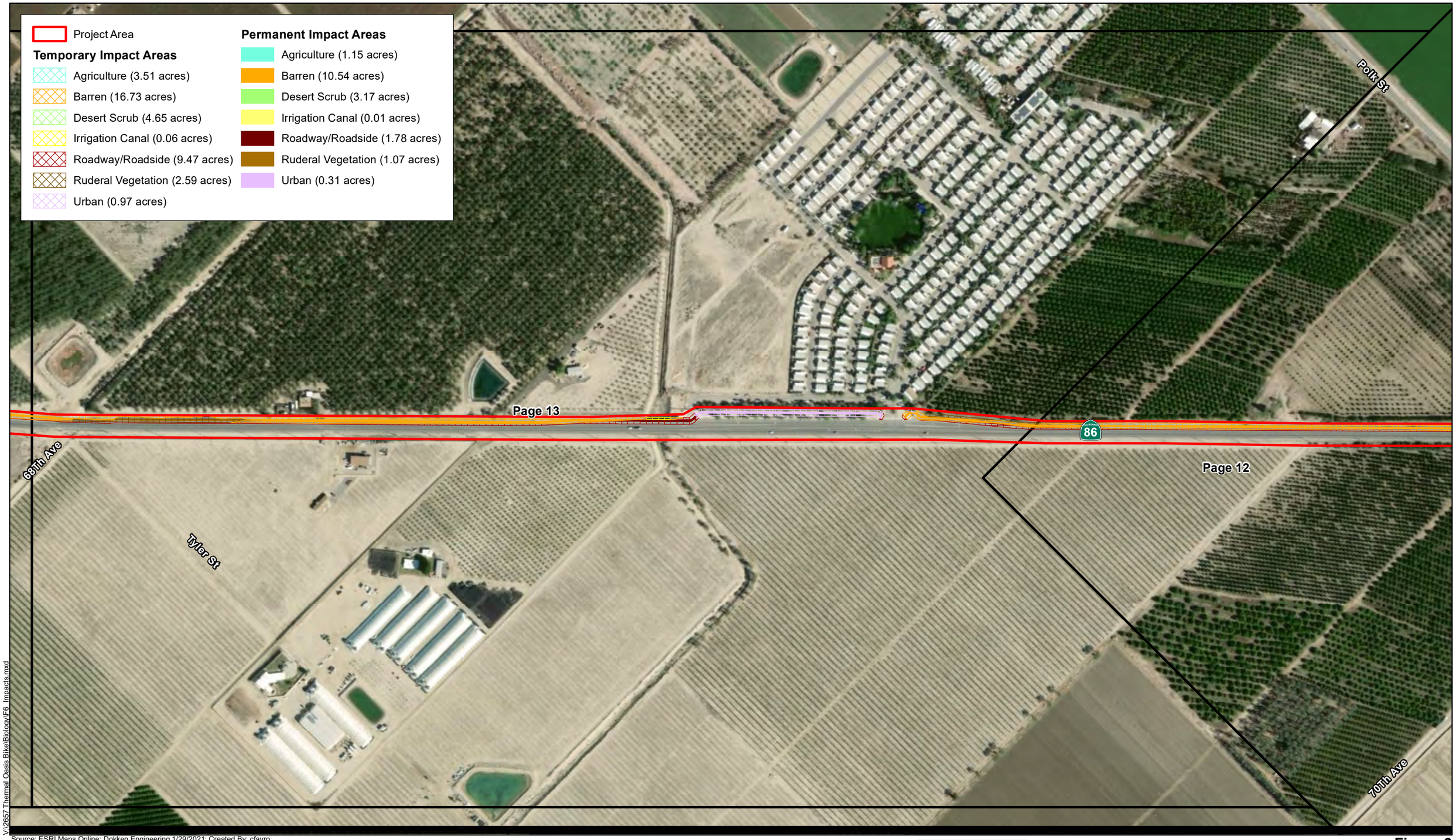
Riverside County, California



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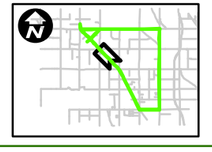

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Page 13 of 14
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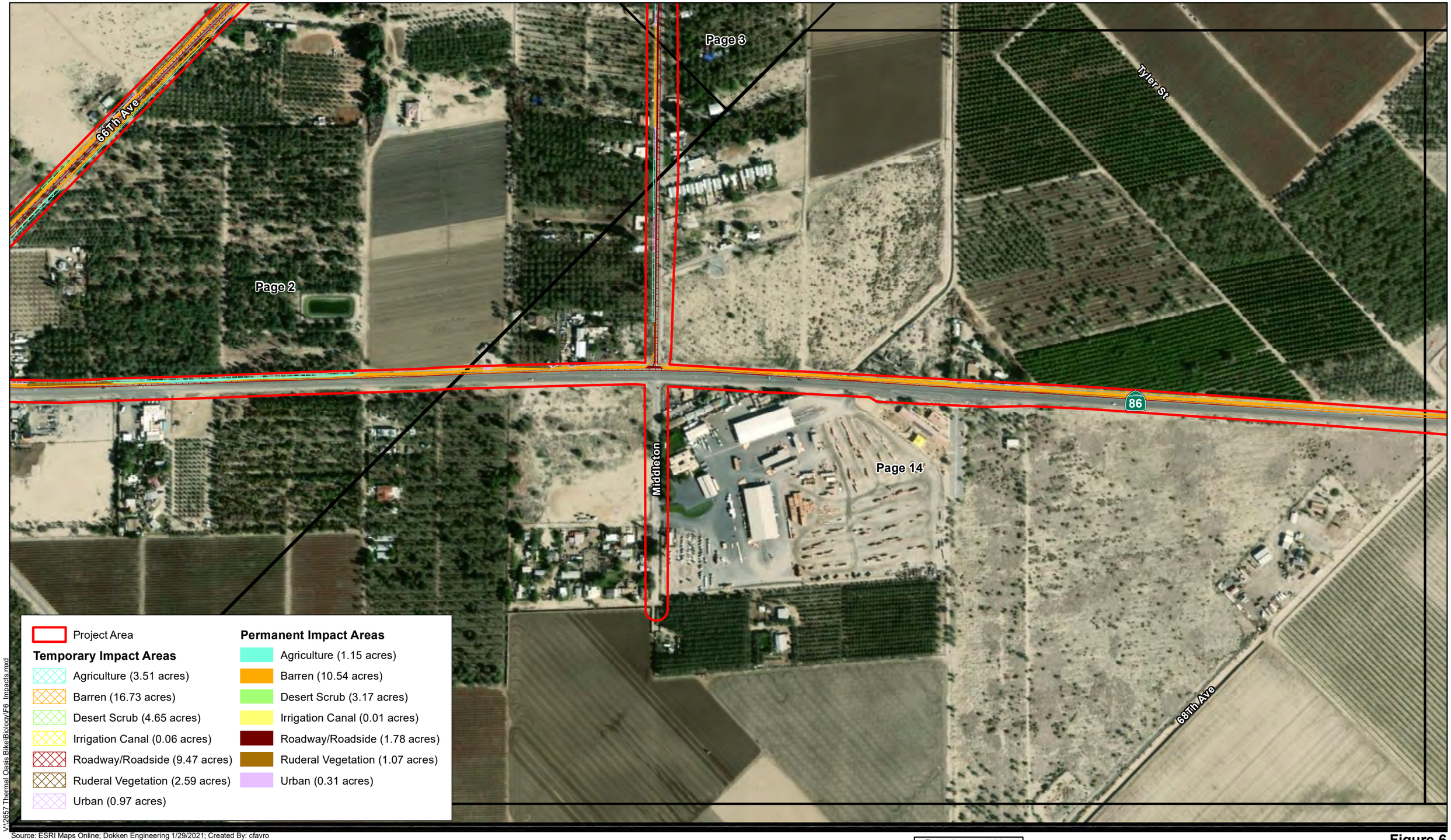

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Figure 6
Page 14 of 14
Project Impacts
Thermal/Oasis Active Transportation Project
ATPL-5956 (273)
Riverside County, California

4.2 Special Status Plant Species

Plants are considered to be of special concern based on (1) federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special-status plants occurring on site. No special status plants were determined to have potential to occur or were found to be present within the BSA. No Project-related impacts to special status plant species are anticipated.

It was determined that no Project-related impacts to sensitive plan species would occur through database reviews, habitat mapping, and field survey verification. First, the review of IPac, CNDDB, CNPS and online databases determined that 36 special status plant species have the potential to occur within the Project vicinity, including chaparral sand-verbena (*Abronia villosa var. aurita*), Coachella Valley milk-vetch (*Astragalus lentiginosus var. coachellae*), Harwood's eriastrum (*Eriastrum hardwoodii*), Latimer's woodland-gilia (*Saltugilia latimeri*), mecca-aster (*Xylorhiza cognata*), and Santa Rosa Mountains leptosiphon (*Leptosiphon floribundus ssp. hallii*), among others. The potential for each species to occur within the BSA was determined by analyzing the habitat requirements of each species, comparing the habitat requirements to available habitat within the BSA and identifying the nearest local occurrences of the species. Natural habitats within and adjacent to the Project's BSA are categorized as roadway, irrigation canal, urban, agricultural, ruderal vegetation, barren, and desert scrub. Desert scrub is the only habitat within and adjacent to the BSA that is likely to support special status species; however, no impacts to this habitat are anticipated. The potential rationale for each special status plant is explained in detail in Table 1. A biological survey and a comparison between habitat requirements and the habitat available within the BSA was conducted and no special status plant species were determined to have potential of occurring within the BSA and no Project-related impacts to special status plant species are anticipated.

4.3 Special Status Wildlife Species

Animals are considered to be of special concern based on (1) federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring on site. Burrowing owl (*Athene cunicularia*), Couch's spadefoot (*Scaphiopus couchii*), and the western yellow bat (*Lasiurus xanthinus*) were the three special status wildlife species determined to have the potential to occur within the BSA however, it is anticipated the project would avoid impact to these species with implementation of species-specific avoidance and minimization measures and no take is anticipated as a result of the Project.

4.3.1 Discussion of Burrowing Owl

The burrowing owl (*Athene cunicularia*) is an underground-nesting owl species listed as a CDFW Species of Special Concern (SSC). It is a small, brown owl with white spotting and bright yellow eyes. The species is found in open habitats, such as grasslands, deserts, agricultural areas, and disturbed open areas. It is often associated with other sparsely vegetated communities such as open shrub stages of pinyon-juniper woodland and pondorosa pine forests. The species nests in burrows from March through August, either constructing new burrows or inhabiting abandoned small mammal burrows. Burrowing owl nests can be identified by the presence of owl excrement, pellets, debris, grass, and feathers in the vicinity of a burrow. Human development threatens burrowing owl populations by reducing available nesting habitat and decreasing rodent populations, which serve as the owl's main food source.

4.3.1.1 Survey Results for Burrowing Owl

No burrowing owls were identified during the June 3, 2020 biological survey. The BSA is adjacent to open areas with desert, agricultural, and disturbed habitats in which the species is known to occur. There are 21 CNDDB occurrences of the species within a 10-mile radius of the Project area. The nearest, most recent documented CNDDB occurrence within a 10-mile radius of the Project area is approximately 2.0 miles northeast of the Project area (2007). This occurrence assumes the existence of a breeding pair in the area, as an adult and juvenile were flushed from their burrow when the occurrence was described. As the Project area contains and is adjacent to open desert and agricultural habitat and the species has been found in similar, nearby areas, the species may be present within the Project area. However, the Project will only

impact the area directly adjacent to a roadway and the species is less likely to nest directly adjacent to a highly trafficked, disturbed area. Due to the proximity of the Project area to a roadway, the species is considered to have a low to moderate potential of occurring within the BSA, despite there being potentially suitable habitat in the area.

4.3.1.2 Project Impacts to Burrowing Owl

There is a low to moderate potential for burrowing owls to occur within the BSA given the surrounding local, recent occurrences and the presence of suitable habitat within and directly adjacent to the BSA. Potential temporary impacts to the species include noise generated from construction activities. Potential permanent impacts to the species include destruction of burrows or burrow entrances and degradation of adjacent foraging habitat.

Typical multi-function trail construction includes clearing and grubbing, grading, paving, and striping. Commonly used construction equipment for multi-function trail construction may include a backhoe, excavator, cement truck, paver, rollers, motor grader, dump truck and light hand tools. Noise impacts will be short-term and are not anticipated to substantially impact the species in a way that would cause take of an individual. The Project would adhere to all local and state noise ordinances.

The Project is adjacent to potential burrowing owl burrow and foraging habitat, however the Project will only require ground disturbance or vegetation removal along the edges of desert scrub habitat, where it is immediately adjacent to the roadway and barren areas. Furthermore, burrows were not observed during general biological surveys in Project impact areas. Avoidance and minimation efforts will be implemented to further ensure that there are no impacts to the species.

Overall, with the incorporation of the following avoidance and minimization measures, **BIO-6** through **BIO-8**, take of the species is not anticipated.

4.3.1.3 Avoidance and Minimization Efforts for Burrowing Owl

The Project is not anticipated to directly impact the burrowing owl. The species has a low to moderate potential to occur within the BSA and minimal vegetation removal would occur within the Project area. The Project has been designed to minimize temporary and permanent impacts to habitat with the implementation of **BIO-1** through **BIO-4**. In addition to these measures, the following avoidance and minimization measures will be incorporated into the Project design to ensure there is not take of burrowing owls.

BIO-6: Every individual working on the Project must attend a biological awareness training session delivered by a qualified biologist prior to working within the Project area. This training program shall include information regarding special status species, including the burrowing owl and Couch's spadefoot.

The training shall include species identification characteristics, BMPs to be implemented, Project-specific avoidance measures that must be followed, and the steps necessary if the species is encountered at any time.

BIO-7: Prior to construction activities beginning, a preconstruction survey for burrowing owl in accordance with CDFW guidelines and the CVMSHCP must be conducted by a qualified biologist. The preconstruction survey should be conducted within a 500-foot buffer zone around the Project impact area and within 30 days before ground disturbing construction begins. If no burrows or burrowing owls are detected, no further avoidance or mitigation measures are required. If burrows are detected but determined to be inactive, exclusion methods will be implemented to prevent owls from occupying the burrows during Project activities. If burrowing owls are detected, a no-disturbance buffer should be established and marked with high visibility Environmentally Sensitive

Area (ESA) fencing. The no-disturbance buffer should be 250 feet during the breeding season (February 1st through August 31st) and 160 feet during the non-breeding season.

BIO-8: If work is to occur during the breeding season (February 1st through August 31st), then occupied burrows will be protected by a buffer zone marked by high visibility ESA fencing. The biologist shall consult with CDFW to determine the appropriate buffer size. If construction must occur within the approved buffer zone, then that work must be conducted outside of the breeding season unless the biologist determines that the birds have not begun egg laying or that juveniles have fledged the burrow and are capable of independent survival. The biologist may also coordinate with CDFW to determine if burrow relocation would be viable. If burrow relocation is determined to be appropriate, the biologist must prepare a burrowing owl relocation plan to be approved by CDFW prior to relocation taking place.

4.3.1.4 Compensatory Mitigation for Burrowing Owl

With the inclusion of general measures **BIO-1** through **BIO-4** and measures **BIO-6** through **BIO-8** specific to the burrowing owl, direct impact and take of the species is not anticipated. The Project is not anticipated to impact the burrowing owl; therefore, no compensatory mitigation is proposed at this time.

4.3.1.5 Cumulative Impacts to Burrowing Owl

With the implementation of site-specific and species-specific avoidance, minimization and mitigation measures, the Project is not anticipated to directly impact burrowing owls. In addition, the Project is in compliance with the conservation measures for the burrowing owl outlined in the CVMSHCP, which considers the regional impacts and mitigation necessary for the species. No cumulative impacts to burrowing owls are anticipated.

4.3.2 Discussion of Couch's Spadefoot

The Couch's spadefoot (*Scaphiopus couchii*) is a small nocturnal toad that is listed as a CDFW SSC. It is a terrestrial amphibian, spending most of its life buried in the ground, emerging during spring and summer rains in order to breed in temporary pools. The species inhabits arid and semi-arid areas in the southwest, in association with desert riparian, palm oasis, desert succulent shrub, and desert scrub habitats. The main threats contributing to Couch's spadefoot decline are urbanization and agriculture; however, irrigation can increase the availability of temporary pools that can be used for breeding. Due to this, the species can also be found in agricultural areas.

4.3.2.1 Survey Results for Couch's Spadefoot

No Couch's spadefoot were identified during the June 3, 2020 biological survey. The BSA is adjacent to desert scrub habitat in which the species is known to occur. The nearest, most recent documented CNDDB occurrence of the species is located approximately 1.9 miles east of the Project area (2007). This occurrence is described as one adult found in flooded desert scrub in a mixed disturbed and natural area. There is another CNDDB occurrence of the species within a 10-mile radius of the Project area, approximately 9.9 miles east of the Project area. As the Project area contains and is adjacent to desert scrub habitat and the species has been found in similar, nearby areas, the species may be present within the Project area. However, the Project will only impact the area directly adjacent to a roadway and the species is less likely to inhabit any habitat that is so close to a highly trafficked, disturbed area. Due to the proximity of the Project area to a roadway, the species is considered to have a low to moderate potential of occurring within the BSA, despite there being potentially suitable habitat in the area.

4.3.2.2 Project Impacts to Couch's Spadefoot

There is a low to moderate potential for Couch's spadefoot to occur within the BSA given the surrounding local, recent occurrences and the presence of suitable habitat within and directly adjacent to the BSA.

Potential temporary impacts to the species include noise and vibrations generated from construction activities. Potential permanent impacts to the species include degradation of surrounding vegetation used for breeding or foraging.

Typical multi-function trail construction includes clearing and grubbing, grading, paving and striping. Commonly used construction equipment for multi-function trail construction may include a backhoe, excavator, cement truck, paver, rollers, motor grader, dump truck and light hand tools. Noise and vibration impacts will be short-term and are not anticipated to substantially impact the species in a way that would cause take of an individual. The Project would adhere to all local and state noise ordinances.

The Project will not require ground disturbance or vegetation removal within areas that provide suitable habitat for the species. Furthermore, there have been no recent occurrences of the species within the Project limits and the species was not observed during biological surveys.

Overall, with the incorporation of the following avoidance and minimization measures, **BIO-9** through **BIO-13**, take of the species is not anticipated.

4.3.2.3 Avoidance and Minimization Efforts for Couch's Spadefoot

The Project is not anticipated to directly impact the Couch's spadefoot. The species has a low to moderate potential to occur within the BSA and minimal vegetation removal would occur within the Project area. The Project has been designed to minimize temporary and permanent impacts to habitats with the implementation of **BIO-1** through **BIO-4**. In addition to these measures, as well as **BIO-6**, the following avoidance and minimization measures will be incorporated into the Project design to ensure there is not take of Couch's spadefoot.

BIO-9: Prior to the start of construction activities, the Project limits in the vicinity of desert scrub vegetation associated with the 68th Avenue riverine channel and the 66th Avenue canal shall be marked with high visibility ESA fencing or staking to ensure construction will not further encroach into these habitats. The fencing shall be inspected by the Contractor before the start of each workday and maintained by the Contractor until completion of the Project. The Project biologist will periodically inspect the ESA to ensure sensitive locations remain undisturbed.

BIO-10: If a Couch's spadefoot is identified within Project limits all work must stop in that vicinity until the individual leaves the Project area of its own accord. If the Couch's spadefoot is found buried underground during ground disturbance activities or within water sources impacted during construction, an appropriate buffer and sound restrictions shall be determined in coordination with CDFW and marked with high visibility ESA fencing.

BIO-11: If removal of desert scrub vegetation is necessary for Project activities, vegetation will be trimmed rather than fully removed in areas, where feasible.

BIO-12: If removal of desert scrub vegetation is required for Project activities within the vicinty of water sources, the Project biologist must inspect the vegetation immediately prior to removal and must remain onsite during all vegetation clearing.

BIO-13: The Project biologist will periodically monitor construction within the vicinity of natural habitats, including desert scrub and riverine channels, to ensure that vegetation removal, BMPs, and all avoidance and minimization measures are properly constructed and followed.

4.3.2.4 Compensatory Mitigation for Couch's Spadefoot

With the inclusion of general measures **BIO-1** through **BIO-4** and measures **BIO-9** through **BIO-13** specific to Couch's spadefoot, direct impact and take of the species is not anticipated. The Project is not anticipated to impact the Couch's spadefoot; therefore, no compensatory mitigation is proposed at this time.

4.3.2.5 Cumulative Impacts to Couch's Spadefoot

With the implementation of site-specific and species-specific avoidance, minimization and mitigation measures, the Project is not anticipated to directly impact Couch's spadefoot; therefore, no cumulative impacts to Couch's spadefoot are anticipated.

4.3.3 Discussion of Western Yellow Bat

The western yellow bat (*Lasiurus xanthinus*) is a bat species that is listed as a CDFW SSC. It is known to roost and form maternity colonies in trees and palms. The species has been found in valley foothill riparian, desert riparian, desert wash, and palm oasis communities. Western yellow bats are year-long residents of California, found from Los Angeles to San Bernardino Counties, south to the Mexican border.

4.3.3.1 Survey Results for Western Yellow Bat

No western yellow bats were identified during the June 3, 2020 biological survey. The BSA is adjacent to desert scrub and desert riparian habitat in which the species is known to occur. In addition, the BSA contains and is adjacent to agriculturally grown palm trees. There are no recent (<20 years) CNDDB occurrences within a 10-mile radius of the Project area, and the nearest historic (1976) occurrence of the species is approximately 2.2 miles south of the Project area. There are four more occurrences of the species within a 10-mile radius of the Project area; however, these occurrences are from the years 1976-1987. As the Project area contains and is adjacent to desert scrub habitat and mature palm trees, the species may be present within the Project area. However, due to the agricultural use of the land containing suitable roosting trees and the lack of recent occurrences, the species is considered to have a low to moderate potential of occurring within the BSA.

4.3.3.2 Project Impacts to Western Yellow Bat

There is a low to moderate potential for western yellow bat to occur within the BSA given the surrounding local, recent occurrences and the presence of habitat within and directly adjacent to the BSA. Potential temporary impacts to the species include noise and vibration generated from construction activities. Potential permanent impacts to the species include removal of palm trees that may be used for roosting and potential impacts to water sources.

Typical multi-function trail construction includes clearing and grubbing, grading, paving and striping. Commonly used construction equipment for multi-function trail construction may include a backhoe, excavator, cement truck, paver, rollers, motor grader, dump truck, light hand tools, and survey equipment. Noise impacts will be short-term and are not anticipated to substantially impact the species in a way that would cause take of an individual. The Project would adhere to all local and state noise ordinances.

If Project activities require the removal of any palm trees within the BSA, then measure **BIO-14** will be implemented in order to avoid take and mitigate for any impacts to the western yellow bat. The Project would permanently impact approximately 1.15 acres of agricultural land, and temporarily impact approximately 3.51 acres of agricultural land (Figure 6). The majority of these impacts would occur on the edges of agricultural fields and palm tree farms, and tree removal would be avoided as feasible. If Project activities will not require the removal of any palm trees, then with the inclusion of general measures **BIO-1** through **BIO-4,** take of the species is not anticipated.

4.3.3.3 Avoidance and Minimization Efforts for Western Yellow Bat

The western yellow bat has a low to moderate potential to occur within the BSA and palm tree removal will be avoided to the greatest extent feasible. The Project has been designed to minimize temporary and permanent impacts to sensitive habitats with the implementation of **BIO-1** through **BIO-4**. If palm tree removal is required for the Project, the following measures **BIO-14** and **BIO-15** will be implemented to ensure that there is no take of western yellow bat or other bat maternity colonies that may be utilizing palms trees designated for removal. If palm tree removal is not required for Project activities, implementation of

BIO-14 and **BIO-15** is not required and the Project would result in no impacts to the western yellow bat or other roosting bat species.

BIO-14: If palm tree removal is required, prior to tree removal the project biologist will conduct surveys to determine if the trees designated for removal are potentially suitable bat habitat. Potential "bat habitat trees" typically are mature trees with features such as dead palm fronds, open cavities, crevices or loose bark. If any such trees are to be removed, the project biologist will monitor the two-step tree removal process, as outlined in **BIO-15**. Any "bat habitat trees" identified that are not to be removed will be protected in place with ESA fencing.

BIO-15: To minimize direct mortality to any roosting bats, each date palm/palm tree requiring removal must be trimmed using a two-step process conducted over two consecutive days. Contractor will only trim the outermost fronds for each individual tree on the first day; innermost fronds shall not be trimmed. No more than 50% of the palm fronds will be removed from each tree during day 1. On the second day the remaining fronds on each tree must be removed.

All fronds must be manually removed/trimmed using chainsaws. No use of dozers, backhoes, cranes, or other heavy equipment is permitted. Should bats emerge during the tree trimming, trimming activities must temporarily cease at the individual tree until bats are no longer actively emerging from the tree. A survey within 2 weeks of tree removal will be conducted to detect if bats are using trees for roosting. If bats are using trees for roosting, trees must be removed during March 1 – April 15 or August 31 – October 15.

4.3.3.4 Compensatory Mitigation for Western Yellow Bat

With the inclusion of general measures **BIO-1** through **BIO-4** and measures **BIO-14** and **BIO-15** specific to the western yellow bat, direct impact and take of the species is not anticipated. If palm tree removal does occur, the minimum number of trees possible will be removed, so the Project would result in a minimal loss of potential roosting habitat. In addition, the Project area is adjacent to large palm tree farms that will not be impacted by the Project and will continue to provide potential roosting habitat. No compensatory mitigation is proposed at this time.

4.3.3.5 Cumulative Impacts to Western Yellow Bat

With the implementation of site-specific and species-specific avoidance, minimization and mitigation measures, the Project is not anticipated to directly impact the western yellow bat; therefore, no cumulative impacts to the western yellow bat are anticipated.

Chapter 5 Conclusion and Regulatory Determination

5.1. Federal Endangered Species Act Consultation Summary

A list of federally listed species was acquired from USFWS, and CDFW in January 2020 for the Project (Appendix A, B, and C). Table 2, below, lists all federally listed species, with the potential to occur in the Project vicinity, their FESA status, and the Project determination for effects on those species. No federally threatened species were determined to have a high potential of occurring within the BSA.

Table 2. Federally Threatened/Endangered Species Potentially Occurring within the Project Vicinity

Common Name	Scientific Name	Potential	Fed. Status	Determination
Desert slender salamander	*Batrachoseps major aridus*	Presumed Absent	Endangered	No Effect
Least Bell's vireo	*Vireo bellii pusillus*	Presumed Absent	Endangered	No Effect
Southwestern willow flycatcher	*Empidonax traillii extimus*	Presumed Absent	Endangered	No Effect
Yuma clapper rail	*Rallus longirostris yumanensis*	Presumed Absent	Endangered	No Effect
Desert pupfish	*Cyprinodon macularius*	Presumed Absent	Endangered	No Effect
Razorback sucker	*Xyrauchen texanus*	Presumed Absent	Endangered	No Effect
Casey's June beetle	*Dinacoma caseyi*	Presumed Absent	Endangered	No Effect
Peninsular bighorn sheep	*Ovis canadensis nelson*	Presumed Absent	Endangered	No Effect
Coachella Valley fringe-toed lizard	*Uma inornate*	Presumed Absent	Endangered	No Effect
Desert tortoise	*Gopherus agassizii*	Presumed Absent	Threatened	No Effect

This project is located outside of NOAA Fisheries jurisdiction; therefore a NOAA Fisheries species list is not required and no effects to NOAA Fisheries species are anticipated.

No special status species listed as endangered, threatened, or candidate under FESA have the potential to occur within the BSA, so the Project will have no impact on federally listed species. No further FESA consultation will be necessary.

5.2. California Endangered Species Act Consultation Summary

No special status species listed as endangered, threatened, or candidate under CESA have the potential to occur within the BSA. Therefore, impacts to CESA listed species, as a result of the Project, are not anticipated. No consultation with CDFW regarding CESA listed species is required.

5.3. Essential Fish Habitat Consultation Summary

No essential fish habitat occurs within the BSA; therefore, no NMFS consultation is required.

5.4. Wetlands and Other Waters Coordination Summary

The Project will have impacts to the 68th Avenue Riverine Channel and the 66th Avenue Canal which will require permitting from regulatory agencies. The Project would obtain a §401 Clean Water Certification from the Colorado River RWQCB, a §404 permit from the USACE, and a §1602 Streambed Alteration Agreement from CDFW.

5.5. Invasive Species

In February 1999, EO 13112 was signed, requiring Federal agencies to work on preventing and controlling the introduction and spread of invasive species. The following protective measures will be included in the Project plans to ensure that invasive species are not introduced or spread:

BIO-16: Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds.

BIO-17: If hydroseed and plant mixes are used during or post-construction, plant species must consist of a biologist approved plant palate seed mix of native species sourced locally to the Project area.

5.6. Other

5.6.1 Migratory Bird Treaty Act

Native birds, protected under the Migratory Bird Treaty Act and similar provisions under CFG Code, currently nest or have the potential to nest within the BSA (see Appendix F for list of species observed). During biological surveys, habitat for nesting birds was identified within the BSA, including desert scrub habitat. Avoidance and minimization measure **BIO-18** has been incorporated into the Project design to avoid impacts to protected migratory birds to the greatest extent practicable.

BIO-18: Prior to vegetation removal or initial ground disturbance during the nesting bird season (February 1st through August 31st) a pre-construction nesting bird survey must be conducted by a Project biologist prior to the start of work. The nesting bird survey must include the Project area plus a 300-foot buffer. Within 2 weeks of the nesting bird survey, all areas surveyed by the biologist must be cleared by the contractor or a supplemental nesting bird survey is required.

A minimum 300-foot no work buffer will be established around any active nests of a raptor species. A 100-foot no work buffer will be established around any active nests for other migratory birds. If an active nest is discovered during construction, the contractor must immediately stop work in the nesting area until the appropriate buffer is established. The contractor is prohibited from conducting work that could disturb the birds (as determined by a project biologist and in coordination with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by a project biologist and approved by CDFW.

5.6.2 General Wildlife

To prevent harm to local wildlife, such as those observed during biological survey efforts (Appendix E), the Project will implement the following measures:

BIO-19: The contractor must dispose of all food-related trash in closed containers and must remove it from the Project area each day during construction. Construction personnel must not feed or attract wildlife to the Project area.

BIO-20: The contractor must not apply rodenticide or herbicide within the BSA during construction.

BIO-21: All construction crew members will allow subterranean wildlife enough time to escape initial clearing and grubbing activities.

Chapter 6 References

Calflora. 2020. Calflora: Information on wild California plants for conservation, education, and appreciation. Available at: <calflora.org> (accessed: July 6, 2020).

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County of Riverside. 2019. General Plan. Available at: < https://planning.rctlma.org/General-Plan-Zoning> (accessed: July 9, 2020).

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Historical Aerials. 2020. Thermal Available at: < https://www.historicaerials.com/viewer> (accessed: July 31, 2020).

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Jepson eFlora. 2020. University of California Press, Berkeley. Available at <http://ucjeps.berkeley.edu/IJM.html> (accessed: July 6, 2020).

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NRCS. 2020. Custom Soil Resources Report for Riverside County, Coachella Valley Area, Thermal Oasis Active Transportation Project. Available at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm> (accessed July 2, 2020).

USACE. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Available at: <https://www.spk.usace.army.mil/Missions/Regulatory/Jurisdiction/Aquatic-Resources-Delineation/> (accessed: July 8, 2020).

US Climate Data. City of Carlsbad. Available at: <https://www.usclimatedata.com/climate/santa-ana/california/united-states/usca1016> (accessed: July 2, 2020).

USFWS. 2021. Official Species List: U.S. Department of the Interior – Fish and Wildlife Service: Sacramento Fish and Wildlife Office. Consultation Code 08ECAR00-2021-SLI-0137 (requested: March 22, 2021).

Appendix A: USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901
http://www.fws.gov/carlsbad/

In Reply Refer To: March 22, 2021
Consultation Code: 08ECAR00-2021-SLI-0137
Event Code: 08ECAR00-2021-E-01723
Project Name: Thermal Oasis Active Transportation Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Project Summary

Consultation Code: 08ECAR00-2021-SLI-0137
Event Code: 08ECAR00-2021-E-01723
Project Name: Thermal Oasis Active Transportation Project
Project Type: TRANSPORTATION
Project Description: Thermal Oasis Active Transportation Project
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.5417044993619,-116.14961681318425,14z

Counties: Riverside County, California

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Peninsular Bighorn Sheep *Ovis canadensis nelsoni* Population: Peninsular CA pop. There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4970	Endangered

Birds

NAME	STATUS
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yuma Ridgways (clapper) Rail *Rallus obsoletus [=longirostris] yumanensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3505	Endangered

Reptiles

NAME	STATUS
Coachella Valley Fringe-toed Lizard *Uma inornata*	Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2069	
Desert Tortoise *Gopherus agassizii*	Threatened
Population: Wherever found, except AZ south and east of Colorado R., and Mexico There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4481	

Fishes

NAME	STATUS
Desert Pupfish *Cyprinodon macularius*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7003	
Razorback Sucker *Xyrauchen texanus*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/530	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix B: CDFW CNDDB Species List

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Myoma (3311673) OR West Berdoo Canyon (3311672) OR Rockhouse Canyon (3311671) OR La Quinta (3311663) OR Indio (3311662) OR Thermal Canyon (3311661) OR Martinez Mtn. (3311653) OR Valerie (3311652) OR Mecca (3311651))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abrams' spurge *Euphorbia abramsiana*	PDEUP0D010	None	None	G4	S2	2B.2
Algodones euparagia *Euparagia unidentata*	IIHYMBC010	None	None	G1G2	S1S2	
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
Arizona spurge *Euphorbia arizonica*	PDEUP0D060	None	None	G5	S3	2B.3
black skimmer *Rynchops niger*	ABNNM14010	None	None	G5	S2	SSC
black-crowned night heron *Nycticorax nycticorax*	ABNGA11010	None	None	G5	S4	
black-tailed gnatcatcher *Polioptila melanura*	ABPBJ08030	None	None	G5	S3S4	WL
Booth's evening-primrose *Eremothera boothii ssp. boothii*	PDONA03052	None	None	G5T4	S3	2B.3
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California ayenia *Ayenia compacta*	PDSTE01020	None	None	G4	S3	2B.3
California ditaxis *Ditaxis serrata var. californica*	PDEUP08050	None	None	G5T3T4	S2?	3.2
California marina *Marina orcuttii var. orcuttii*	PDFAB2F031	None	None	G2G3T1T2	S2?	1B.3
Casey's June beetle *Dinacoma caseyi*	IICOLX5010	Endangered	None	G1	S1	
chaparral sand-verbena *Abronia villosa var. aurita*	PDNYC010P1	None	None	G5T2?	S2	1B.1
cheeseweed owlfly (cheeseweed moth lacewing) *Oliarces clara*	IINEU04010	None	None	G1G3	S2	
Coachella giant sand treader cricket *Macrobaenetes valgum*	IIORT22020	None	None	G1G2	S1S2	
Coachella Valley fringe-toed lizard *Uma inornata*	ARACF15010	Threatened	Endangered	G1Q	S1	
Coachella Valley milk-vetch *Astragalus lentiginosus var. coachellae*	PDFAB0FB97	Endangered	None	G5T1	S1	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Colorado Valley woodrat *Neotoma albigula venusta*	AMAFF08031	None	None	G5T3T4	S1S2	
Couch's spadefoot *Scaphiopus couchii*	AAABF01020	None	None	G5	S2	SSC
Cove's cassia *Senna covesii*	PDFAB491X0	None	None	G5	S3	2B.2
Crissal thrasher *Toxostoma crissale*	ABPBK06090	None	None	G5	S3	SSC
Deep Canyon snapdragon *Pseudorontium cyathiferum*	PDSCR2R010	None	None	G4G5	S1	2B.3
desert bighorn sheep *Ovis canadensis nelsoni*	AMALE04013	None	None	G4T4	S3	FP
Desert Fan Palm Oasis Woodland *Desert Fan Palm Oasis Woodland*	CTT62300CA	None	None	G3	S3.2	
desert pupfish *Cyprinodon macularius*	AFCNB02060	Endangered	Endangered	G1	S1	
desert slender salamander *Batrachoseps major aridus*	AAAAD02042	Endangered	Endangered	G4T1	S1	
desert spike-moss *Selaginella eremophila*	PPSEL010G0	None	None	G4	S2S3	2B.2
desert tortoise *Gopherus agassizii*	ARAAF01012	Threatened	Threatened	G3	S2S3	
Earthquake Merriam's kangaroo rat *Dipodomys merriami collinus*	AMAFD03144	None	None	G5T2?	S1S2	
ferruginous hawk *Buteo regalis*	ABNKC19120	None	None	G4	S3S4	WL
flat-seeded spurge *Euphorbia platysperma*	PDEUP0D1X0	None	None	G3	S1	1B.2
flat-tailed horned lizard *Phrynosoma mcallii*	ARACF12040	None	None	G3	S2	SSC
glandular ditaxis *Ditaxis claryana*	PDEUP080L0	None	None	G3G4	S2	2B.2
gravel milk-vetch *Astragalus sabulonum*	PDFAB0F7R0	None	None	G4G5	S2	2B.2
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
great egret *Ardea alba*	ABNGA04040	None	None	G5	S4	
gull-billed tern *Gelochelidon nilotica*	ABNNM08010	None	None	G5	S1	SSC
Harwood's eriastrum *Eriastrum harwoodii*	PDPLM030B1	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
jackass-clover *Wislizenia refracta ssp. refracta*	PDCPP09013	None	None	G5T5?	S1	2B.2
juniper metallic wood-boring beetle *Juniperella mirabilis*	IICOLX9010	None	None	G1	S1	
Knull's metallic wood-boring beetle *Trichinorhipis knulli*	IICOLX1100	None	None	G1	S1	
Lancaster milk-vetch *Astragalus preussii var. laxiflorus*	PDFAB0F721	None	None	G4T2	S1	1B.1
Latimer's woodland-gilia *Saltugilia latimeri*	PDPLM0H010	None	None	G3	S3	1B.2
Le Conte's thrasher *Toxostoma lecontei*	ABPBK06100	None	None	G4	S3	SSC
little-leaf elephant tree *Bursera microphylla*	PDBUR01020	None	None	G4	S2	2B.3
loggerhead shrike *Lanius ludovicianus*	ABPBR01030	None	None	G4	S4	SSC
Mecca-aster *Xylorhiza cognata*	PDASTA1010	None	None	G2	S2	1B.2
narrow-leaf sandpaper-plant *Petalonyx linearis*	PDLOA04010	None	None	G4	S3?	2B.3
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
pallid San Diego pocket mouse *Chaetodipus fallax pallidus*	AMAFD05032	None	None	G5T34	S3S4	SSC
Palm Springs pocket mouse *Perognathus longimembris bangsi*	AMAFD01043	None	None	G5T2	S2	SSC
Palm Springs round-tailed ground squirrel *Xerospermophilus tereticaudus chlorus*	AMAFB05161	None	None	G5T2Q	S2	SSC
Peninsular bighorn sheep DPS *Ovis canadensis nelsoni pop. 2*	AMALE04012	Endangered	Threatened	G4T3Q	S2	FP
pocketed free-tailed bat *Nyctinomops femorosaccus*	AMACD04010	None	None	G4	S3	SSC
prairie falcon *Falco mexicanus*	ABNKD06090	None	None	G5	S4	WL
purple stemodia *Stemodia durantifolia*	PDSCR1U010	None	None	G5	S2	2B.1
Rau's jaffueliobryum moss *Jaffueliobryum raui*	NBMUS97010	None	None	G4	S2	2B.3
razorback sucker *Xyrauchen texanus*	AFCJC11010	Endangered	Endangered	G1	S1S2	FP
red-diamond rattlesnake *Crotalus ruber*	ARADE02090	None	None	G4	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
San Bernardino milk-vetch *Astragalus bernardinus*	PDFAB0F190	None	None	G3	S3	1B.2
San Diego desert woodrat *Neotoma lepida intermedia*	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Santa Rosa Mountains leptosiphon *Leptosiphon floribundus ssp. hallii*	PDPLM090J3	None	None	G4T1T2	S1S2	1B.3
singlewhorl burrobrush *Ambrosia monogyra*	PDAST50010	None	None	G5	S2	2B.2
slender cottonheads *Nemacaulis denudata var. gracilis*	PDPGN0G012	None	None	G3G4T3?	S2	2B.2
slender-stem bean *Phaseolus filiformis*	PDFAB330P0	None	None	G5	S1	2B.1
snowy egret *Egretta thula*	ABNGA06030	None	None	G5	S4	
southwestern willow flycatcher *Empidonax traillii extimus*	ABPAE33043	Endangered	Endangered	G5T2	S1	
spear-leaf matelea *Matelea parvifolia*	PDASC0A0J0	None	None	G5	S3	2B.3
spotted bat *Euderma maculatum*	AMACC07010	None	None	G4	S3	SSC
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G3G4	S2	SSC
triple-ribbed milk-vetch *Astragalus tricarinatus*	PDFAB0F920	Endangered	None	G2	S2	1B.2
vermilion flycatcher *Pyrocephalus rubinus*	ABPAE36010	None	None	G5	S2S3	SSC
wavyleaf twinvine *Funastrum crispum*	PDASC0F020	None	None	G4	S1	2B.2
western mastiff bat *Eumops perotis californicus*	AMACD02011	None	None	G5T4	S3S4	SSC
western yellow bat *Lasiurus xanthinus*	AMACC05070	None	None	G5	S3	SSC
white-faced ibis *Plegadis chihi*	ABNGE02020	None	None	G5	S3S4	WL
yellow-breasted chat *Icteria virens*	ABPBX24010	None	None	G5	S3	SSC
Yuma Ridgway's rail *Rallus obsoletus yumanensis*	ABNME0501A	Endangered	Threatened	G5T3	S1S2	FP

Record Count: 79

Appendix C: CNPS Species List

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

40 matches found. *Click on scientific name for details*

Search Criteria
Found in Quads 3311673, 3311672, 3311671, 3311663, 3311662, 3311661, 3311653 3311652 and 3311651;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	1B.1	S2	G5T2?
Ambrosia monogyra	singlewhorl burrobrush	Asteraceae	perennial shrub	Aug-Nov	2B.2	S2	G5
Astragalus bernardinus	San Bernardino milk-vetch	Fabaceae	perennial herb	Apr-Jun	1B.2	S3	G3
Astragalus lentiginosus var. borreganus	Borrego milk-vetch	Fabaceae	annual herb	Feb-May	4.3	S4	G5T5?
Astragalus lentiginosus var. coachellae	Coachella Valley milk-vetch	Fabaceae	annual / perennial herb	Feb-May	1B.2	S1	G5T1
Astragalus preussii var. laxiflorus	Lancaster milk-vetch	Fabaceae	perennial herb	Mar-May	1B.1	S1	G4T2
Astragalus sabulonum	gravel milk-vetch	Fabaceae	annual / perennial herb	Feb-Jun	2B.2	S2	G4G5
Astragalus tricarinatus	triple-ribbed milk-vetch	Fabaceae	perennial herb	Feb-May	1B.2	S2	G2
Ayenia compacta	California ayenia	Malvaceae	perennial herb	Mar-Apr	2B.3	S3	G4
Bursera microphylla	little-leaf elephant tree	Burseraceae	perennial deciduous tree	Jun-Jul	2B.3	S2	G4
Chorizanthe leptotheca	Peninsular spineflower	Polygonaceae	annual herb	May-Aug	4.2	S3	G3
Ditaxis claryana	glandular ditaxis	Euphorbiaceae	perennial herb	Oct,Dec,Jan,Feb,Mar	2B.2	S2	G3G4
	California ditaxis	Euphorbiaceae	perennial herb	Mar-Dec	3.2	S2?	G5T3T4

Ditaxis serrata var. californica							
Eremothera boothii ssp. boothii	Booth's evening-primrose	Onagraceae	annual herb	Apr-Sep	2B.3	S3	G5T4
Eriastrum harwoodii	Harwood's eriastrum	Polemoniaceae	annual herb	Mar-Jun	1B.2	S2	G2
Eschscholzia androuxii	Joshua Tree poppy	Papaveraceae	annual herb	Feb-May(Jun)	4.3	S3	G3
Euphorbia abramsiana	Abrams' spurge	Euphorbiaceae	annual herb	(Aug)Sep-Nov	2B.2	S2	G4
Funastrum crispum	wavyleaf twinevine	Apocynaceae	perennial herb	May-Aug	2B.2	S1	G4
Hecastocleis shockleyi	prickle-leaf	Asteraceae	perennial evergreen shrub	May-Jul	3	S4	G4
Heuchera hirsutissima	shaggy-haired alumroot	Saxifragaceae	perennial rhizomatous herb	(May)Jun-Jul	1B.3	S3	G3
Jaffueliobryum raui	Rau's jaffueliobryum moss	Grimmiaceae	moss		2B.3	S2?	G4?
Johnstonella costata	ribbed cryptantha	Boraginaceae	annual herb	Feb-May	4.3	S4	G4G5
Johnstonella holoptera	winged cryptantha	Boraginaceae	annual herb	Mar-Apr	4.3	S4	G4G5
Juncus acutus ssp. leopoldii	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	4.2	S4	G5T5
Leptosiphon floribundus ssp. hallii	Santa Rosa Mountains leptosiphon	Polemoniaceae	perennial herb	May-Jul(Nov)	1B.3	S1S2	G4T1T2
Lycium torreyi	Torrey's box-thorn	Solanaceae	perennial shrub	(Jan-Feb)Mar-Jun(Sep-Nov)	4.2	S3	G4G5
Marina orcuttii var. orcuttii	California marina	Fabaceae	perennial herb	May-Oct	1B.3	S2?	G2G3T1T2
Mentzelia tridentata	creamy blazing star	Loasaceae	annual herb	Mar-May	1B.3	S3	G3
Nemacaulis denudata var. gracilis	slender cottonheads	Polygonaceae	annual herb	(Mar)Apr-May	2B.2	S2	G3G4T3?
Petalonyx linearis	narrow-leaf sandpaper-plant	Loasaceae	perennial shrub	(Jan-Feb)Mar-May(Jun-Dec)	2B.3	S3?	G4
Phaseolus filiformis	slender-stem bean	Fabaceae	annual herb	Apr	2B.1	S1	G5
Pseudorontium cyathiferum	Deep Canyon snapdragon	Plantaginaceae	annual herb	Feb-Apr	2B.3	S1	G4G5
Saltugilia latimeri	Latimer's woodland-gilia	Polemoniaceae	annual herb	Mar-Jun	1B.2	S3	G3
Selaginella eremophila	desert spike-moss	Selaginellaceae	perennial rhizomatous herb	(May)Jun(Jul)	2B.2	S2S3	G4
Senna covesii	Coves' cassia	Fabaceae	perennial herb	Mar-Jun(Aug)	2B.2	S3	G5

Stemodia durantifolia	purple stemodia	Plantaginaceae	perennial herb	(Jan)Apr,Jun,Aug,Sep,Oct,Dec	2B.1	S2	G5
Thelypteris puberula var. sonorensis	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	2B.2	S2	G5T3
Wislizenia refracta ssp. palmeri	Palmer's jackass clover	Cleomaceae	perennial deciduous shrub	Jan-Dec	2B.2	S1	G5T3T5
Wislizenia refracta ssp. refracta	jackass-clover	Cleomaceae	annual herb	Apr-Nov	2B.2	S1	G5T5?
Xylorhiza cognata	Mecca-aster	Asteraceae	perennial herb	Jan-Jun	1B.2	S2	G2

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Appendix D: NRCS Soil Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Riverside County, Coachella Valley Area, California

Thermal Oasis Active Transportation Project

July 2, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


116° 11' 18" W
116° 6' 19" W
33° 35' 15" N
33° 29' 44" N
576000
577000
578000
579000
580000
581000
582000
583000
3716000
3715000
3714000
3713000
3712000
3711000
3710000
3709000
3708000
3707000
GbA
GcA
It
GfA
Sb
CrA
CsA
CpA
Map Scale: 1:49,800 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 500 1000 2000 3000
Feet
0 2000 4000 8000 12000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 12, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 14, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CpA	Coachella fine sand, 0 to 2 percent slopes	3.0	1.6%
CrA	Coachella fine sand, wet, 0 to 2 percent slopes	2.5	1.4%
CsA	Coachella fine sandy loam, 0 to 2 percent slopes	14.9	8.0%
GbA	Gilman fine sandy loam, 0 to 2 percent slopes	68.5	36.6%
GcA	Gilman fine sandy loam, wet, 0 to 2 percent slopes	25.1	13.4%
GdA	Gilman fine sandy loam, moderately fine substratum, 0 to 2 percent slopes	1.0	0.5%
GfA	Gilman silt loam, wet, 0 to 2 percent slopes	5.8	3.1%
It	Indio very fine sandy loam, wet	37.3	19.9%
Sb	Salton silty clay loam	29.1	15.5%
Totals for Area of Interest		**187.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Riverside County, Coachella Valley Area, California

CpA—Coachella fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hkvc
Elevation: 40 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Coachella and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Coachella

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous rock

Typical profile

H1 - 0 to 11 inches: fine sand
H2 - 11 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Myoma

Percent of map unit: 5 percent
Hydric soil rating: No

Indio

Percent of map unit: 5 percent
Hydric soil rating: No

Gilman

Percent of map unit: 5 percent
Hydric soil rating: No

CrA—Coachella fine sand, wet, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hkvf
Elevation: 40 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Coachella and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Coachella

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous rock

Typical profile

H1 - 0 to 11 inches: fine sand
H2 - 11 to 60 inches: stratified sand to loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Indio

Percent of map unit: 5 percent
Hydric soil rating: No

Gilman

Percent of map unit: 5 percent
Hydric soil rating: No

Myoma

Percent of map unit: 5 percent
Hydric soil rating: No

CsA—Coachella fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hkvg
Elevation: 40 feet
Mean annual precipitation: 2 to 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Coachella and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Coachella

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous rock

Typical profile

H1 - 0 to 10 inches: fine sandy loam
H2 - 10 to 40 inches: sand
H3 - 40 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Gilman

Percent of map unit: 5 percent
Hydric soil rating: No

Indio

Percent of map unit: 5 percent
Hydric soil rating: No

Myoma

Percent of map unit: 5 percent
Hydric soil rating: No

GbA—Gilman fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hkvl
Elevation: 1,080 to 1,600 feet
Mean annual precipitation: 2 to 10 inches
Mean annual air temperature: 72 to 73 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Gilman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilman

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 60 inches: stratified loamy sand to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Coachella

Percent of map unit: 4 percent
Hydric soil rating: No

Indio

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, sandy surface

Percent of map unit: 4 percent
Hydric soil rating: No

Salton

Percent of map unit: 3 percent
Hydric soil rating: No

GcA—Gilman fine sandy loam, wet, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hkvn
Elevation: 400 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 250 to 350 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Gilman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilman

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 60 inches: stratified loamy sand to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Unnamed, sandy surface
Percent of map unit: 5 percent
Hydric soil rating: No

Coachella
Percent of map unit: 5 percent
Hydric soil rating: No

Indio
Percent of map unit: 3 percent
Hydric soil rating: No

Salton
Percent of map unit: 2 percent
Hydric soil rating: No

GdA—Gilman fine sandy loam, moderately fine substratum, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hkvp
Elevation: 500 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 250 to 350 days
Farmland classification: Prime farmland if irrigated and reclaimed of excess salts and sodium

Map Unit Composition
Gilman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilman

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile
H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 40 inches: stratified loamy sand to silty clay loam
H3 - 40 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Slightly saline to moderately saline (4.0 to 8.0 mmhos/cm)
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Indio

Percent of map unit: 5 percent
Hydric soil rating: No

Coachella

Percent of map unit: 5 percent
Hydric soil rating: No

Salton

Percent of map unit: 5 percent
Hydric soil rating: No

GfA—Gilman silt loam, wet, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hkvr
Elevation: 400 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 250 to 350 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Gilman and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilman

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 60 inches: stratified loamy sand to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Indio

Percent of map unit: 8 percent
Hydric soil rating: No

Salton

Percent of map unit: 4 percent
Hydric soil rating: No

Coachella

Percent of map unit: 3 percent
Hydric soil rating: No

It—Indio very fine sandy loam, wet

Map Unit Setting

National map unit symbol: hkw1
Elevation: 300 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Indio and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Indio

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: very fine sandy loam
H2 - 10 to 60 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Gilman
Percent of map unit: 5 percent
Hydric soil rating: No

Salton
Percent of map unit: 5 percent
Hydric soil rating: No

Coachella
Percent of map unit: 5 percent
Hydric soil rating: No

Sb—Salton silty clay loam

Map Unit Setting
National map unit symbol: hkwh
Elevation: 300 feet
Mean annual precipitation: 4 inches
Mean annual air temperature: 72 degrees F
Frost-free period: 270 to 320 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Salton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Salton

Setting
Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium

Typical profile
H1 - 0 to 9 inches: silty clay loam
H2 - 9 to 42 inches: silty clay loam
H3 - 42 to 60 inches: clay

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 24 to 60 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Slightly saline to strongly saline (4.0 to 16.0 mmhos/cm)
Available water storage in profile: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): 4w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Indio

Percent of map unit: 5 percent
Hydric soil rating: No

Gilman

Percent of map unit: 5 percent
Hydric soil rating: No

Imperial

Percent of map unit: 5 percent
Hydric soil rating: No

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Appendix E: List of Species Observed

Plant Species Observed within the BSA

Common Name	Scientific Name	Native (N)/ Non-Native (X) [Cal-IPC Invasive Rank]
Grasses & Herbs		
Alkali heliotrope	*Heliotropium curassavicum var. oculatum*	N
Bush seepweed	*Suaeda nigra*	N
California sunflower	*Helianthus californicus*	N
Common Mediterranean grass	*Schismus barbatus*	X [Limited]
Crimson fountaingrass	*Pennisetum setaceum*	X [Moderate]
Flix weed	*Descurainia sophia*	X [Limited]
Johnsongrass	*Sorghum halepense*	X
Narrow leaf cattail	*Typha angustifolia*	X
Nettle leaf goosefoot	*Chenopodium murale*	X
Pigweed amaranth	*Amaranthus albus*	X
Prickly lettuce	*Lactuca serriola*	X
Puncture vine	*Tribulus terrestris*	X [Limited]
Rabbit's foot grass	*Polypogon* sp.	X
Russian thistle	*Salsola tragus*	X [Limited]
Salt grass	*Distichlis spicata*	N
Western sea purslane	*Sesuvium verrucosum*	N
White sweetclover	*Melilotus albus*	X
Shrubs		
Arrow weed	*Pluchea sericea*	N
Big saltbush (Dominant species)	*Atriplex lentiformis*	N
Bougainvillea	*Bougainvillea spectabilis*	X
Iodine bush (Dominant species)	*Allenrolfea occidentalis*	N
Oleander	*Nerium oleander*	X
Trees		
Catclaw acacia	*Senegalia greggii*	N
Date palm	*Phoenix* sp.	X
Desert willow	*Chilopsis linearis*	N
Fremont cottonwood	*Populus fremontii*	N
Honey mesquite	*Prosopis glandulosa*	N
Mexican fan palm	*Washingtonia robusta*	X [Moderate]
Mexican palo verde	*Parkinsonia aculeata*	X
Orange tree	*Citrus* X *sinensis*	X
Tamarisk	*Tamarix* sp.	X

Animal Species Observed within the BSA

Common Name	Scientific Name	Native (N) / Non-Native (X)
Amphibians		
American bullfrog	*Lithobates catesbeianus*	X
Pacific chorus frog	*Pseudacris sierra*	N
Birds		
American kestrel	*Falco sparverius*	N
California towhee	*Melozone crissalis*	N
Eurasian collard dove	*Streptopelia decaocto*	X
Great blue heron	*Ardea herodias*	N
Great tailed grackle	*Quiscalus mexicanus*	N
House finch	*Haemorhous mexicanus*	N

House sparrow	*Passer domesticus*	X
Killdeer	*Charadrius vociferus*	N
Lesser nighthawk	*Chordeiles acutipennis*	N
Mourning dove	*Zenaida macroura*	X
Northern mockingbird	*Mimus polyglottos*	N
Song sparrow	*Melospiza melodia*	N
Mammals		
Cottontail	*Sylvilagus* sp.	N
Coyote	*Canis latrans*	N

Appendix F: Representative Photographs

Representative Photograph 1. Representative of Pierce Street at 66th Avenue, facing north, taken June 2020.

Representative Photograph 2. Representative of an irrigational canal along Pierce Street, facing north taken June 2020.

Representative Photograph 3. Representative of desert scrub habitat at the corner of Pierce Street and 66th Avenue, facing west, taken June 2020.

Representative Photograph 4. Representative of the crossing at Harrison Street, facing east, taken June 2020.

Representative Photograph 5. Representative of the palm orchards present within the BSA, facing south, taken June 2020.