APPENDIX D

BIOLOGICAL TECHNICAL REPORT

ROCKS
BIOLOGICAL CONSULTING

HESPERIA BIG BOX RETAIL PROJECT

BIOLOGICAL TECHNICAL REPORT

San Bernardino County, California

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1 INTRODUCTION

1.1 PROJECT LOCATION

The Hesperia Big Box Retail Project (project or proposed project) consists of approximately 25 acres in the City of Hesperia (City), San Bernardino County, California (Figure 1). The project site is located directly south of the California Aqueduct, east of Cataba Road, northwest of Interstate (I)-15, and north of Main Street. The project site is bisected by a portion of Amargosa Road that will be improved with project implementation. The project site includes Assessor Parcel Numbers (APNs) 040506272, 040506273, 306448106, and 306448107. The general biological survey area for this project referenced throughout this report includes the 24.97-acre project site, a 4.57-acre off-site improvement area, and a 100-foot buffer, totaling 48.7 acres (Figure 2).

1.2 PROJECT DESCRIPTION

The project proposes the development of an approximately 25-acre site bisected by a section of Amargosa Road that is included in the off-site improvements area for this project. A large big box retail center would be constructed north of Amargosa Road and a fuel station and carwash facility would be constructed south of Amargosa Road. The proposed project would also include installation of hardscape, landscaping, lighting, and utility improvements to service both the retail center, fuel station, and car wash. Off-site improvements for the project include improvements within the public right-of-way on Amargosa Road, and construction of an emergency only 26-foot wide access road from the west side of the northern parcel to Cataba Road along White Fox Trail.

Construction of the proposed project is anticipated to occur in two phases over an estimated 12-month period. Phase 1 involves the development of a fuel station and carwash facility on the southern portion with an estimated duration of five months. Phase 2 includes the construction of a big box retail building on the northern portion of the site, lasting approximately nine months. Phase 1 and Phase 2 would overlap. Phase 2 may include nighttime construction of up to five days for concrete pouring.

1.3 SCOPE OF WORK

This Biological Technical Report (BTR) includes a description of existing biological resources within and adjacent to the proposed project footprint; provides a description of methods used to assess existing conditions and results of the project specific biological impacts analysis; and includes potential avoidance, minimization, and mitigation measures to eliminate and/or reduce potential project impacts. This report also includes an impact assessment on biological resources associated with the project in the context of County of San Bernardino Land Use regulations, the California Environmental Quality Act (CEQA), and state and federal regulations, such as the Endangered Species Act (ESA), Clean Water Act (CWA), and California Fish and Game Code (CFGC).

1.4 EXISTING CONDITIONS

The project site is primarily composed of Joshua tree (*Yucca brevifolia*) woodland and disturbed California juniper (*Juniperus californica*) tree woodland. Small areas of disturbed rubber rabbitbrush (*Ericameria nauseosa*) scrub and disturbed land are also present along the interior borders of the project site and dominate the 100-foot survey area buffer. Developed land primarily occurs around Amargosa Road and Key Pointe Drive within the off-site improvements area and survey area buffer. The topography of the project site is generally flat with minimal changes in elevation. Vacant lots surround the project site to the west, and smaller undeveloped areas occur to the north, south, and east. Open spaces abutting the project site are composed of disturbed rubber rabbitbrush scrub, Joshua tree woodland, and disturbed land.

1.5 REGULATORY FRAMEWORK

Federal, state, and local agencies have established several regulations to protect and conserve biological and aquatic resources. The descriptions below provide a brief overview of agency regulations that may be applicable to the project. The regulating agencies make the final determination as to what types of permits are required.

1.5.1 FEDERAL REGULATIONS

Federal Endangered Species Act

The federal ESA of 1973 (16 U.S.C. § 1531 et seq.), as amended, provides for listing of endangered and threatened species of plants and animals and designation of critical habitat for listed species. The ESA regulates the "take" of any endangered fish or wildlife species, per Section 9. As development is proposed, the responsible agency or individual landowner is required to consult with the U.S. Fish and Wildlife Service (USFWS) to assess potential impacts on listed species (including plants) or their critical habitat, pursuant to Sections 7 and 10 of the ESA. USFWS is required to make a determination as to the extent of impact a project would have on a particular species. If it is determined that potential impacts on a species would likely occur, measures to avoid or reduce such impacts must be identified. USFWS may issue an incidental take statement, following consultation and the issuance of a Biological Opinion. This allows for take of the species that is incidental to another authorized activity, provided that the action will not adversely affect the existence of the species. Section 10 of the ESA provides for issuance of an incidental take permit (ITP) to non-federal parties with the development of a habitat conservation plan (HCP); Section 7 provides for permitting of federal projects.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 U.S.C. § 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive and listed at 50 Code of Federal Regulations (CFR) 10.13. The USFWS enforces the MBTA, which prohibits "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation.

Rivers and Harbors Act of 1899

The Rivers and Harbors Act of 1899 (33 U.S.C. § 401 et seq.) prohibits discharge of any material into navigable waters, or tributaries thereof, of the United States without a permit. The act also makes it a misdemeanor to excavate, fill, or alter the course, condition, or capacity of any port, harbor, or channel; or to dam navigable streams without a permit.

Many activities originally covered by the Rivers and Harbors Act are now regulated under the CWA of 1972 (33 U.S.C. § 1251 et seq.), discussed below. However, the 1899 act retains relevance and created the structure under which the U.S. Army Corps of Engineers (Corps) oversees CWA Section 404 permitting.

Clean Water Act

Pursuant to Section 404 of the CWA (33 U.S. Code § 1344), the Corps is authorized to regulate any activity that would result in the discharge of dredged or fill material into waters of the U.S. (including wetlands), which include those waters listed in 33 CFR 328.3 (88 Federal Register [FR] 61964, September 8, 2023; Revised Definition of “Waters of the United States”; Conforming). The Corps, with oversight from the U.S. Environmental Protection Agency (USEPA), has the principal authority to issue CWA Section 404 permits. Substantial impacts on waters of the U.S. may require an Individual Permit. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits.

A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for all Section 404 permitted actions. The Regional Water Quality Control Board (RWQCB), a division of the State Water Resources Control Board, provides oversight of the Section 401 certification process in California. The RWQCBs are required to provide Water Quality Certification for licenses or permits that authorize an activity that may result in a discharge from a point source into a water of the U.S. Water Quality Certification authorization “is limited to assuring that a discharge from a Federally licensed or permitted activity will comply with water quality requirements” (40 CFR 121.3).

The National Pollutant Discharge Elimination System (NPDES) is the permitting program for discharge of pollutants into surface waters of the U.S. under Section 402 of the CWA (33 U.S. Code § 1342).

1.5.2 STATE REGULATIONS

California Environmental Quality Act

The CEQA (California Public Resources Code § 21000 et seq.) was established in 1970 as California’s counterpart to NEPA. CEQA requires state and local agencies to identify significant environmental impacts of their actions and to avoid or mitigate those impacts, where feasible.

CEQA applies to certain activities of state and local public agencies. A public agency must comply with CEQA when it undertakes an activity defined by CEQA as a "project." A project is an activity undertaken by a public agency or a private activity, which must receive some discretionary approval (meaning that the agency has the authority to deny the requested permit or approval) from a government agency that may cause either a direct physical change in the environment or a reasonably foreseeable indirect change in the environment.

California Endangered Species Act and Natural Community Conservation Planning Act

The California Endangered Species Act of 1984 (CESA; CFGC § 2050 et seq.), in combination with the California Native Plant Protection Act of 1977 (CFGC § 1900 et seq.), regulates the listing and take of plant and animal species designated as endangered, threatened, or rare within the state. California also lists species of special concern based on limited distribution; declining populations; diminishing habitat; or unusual scientific, recreational, or educational value. The California Department of Fish and Wildlife (CDFW) is responsible for assessing development projects for their potential to impact listed species and their habitats. State-listed special-status species are addressed through the issuance of a 2081 permit (Memorandum of Understanding).

In 1991, the California Natural Community Conservation Planning (NCCP) Act (CFGC § 2800 et seq.) was approved and the NCCP Coastal Sage Scrub program was initiated in Southern California. The NCCP program was established "to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth." The NCCP Act encourages preparation of plans that address habitat conservation and management on an ecosystem basis rather than one species or habitat at a time.

California Fish and Game Code Sections 1600-1602

Pursuant to Division 2, Chapter 6, Section 1602 of the CFGC, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream or lake that supports fish or wildlife. A Lake or Streambed Alteration Agreement Application must be submitted to CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake" (CFGC § 1602). CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources. CDFW reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the Lake or Streambed Alteration Agreement.

California Fish and Game Code Sections 3503, 3511, 3513, 3801, 4700, 5050, and 5515

CDFW protects and manages fish, wildlife, and native plant resources within California. The California Fish and Game Commission and/or CDFW are responsible for issuing permits for the take or possession of protected species. The following sections of the CFGC address protected species: Section 3511 (birds), Section 4700 (mammals), Section 5050 (reptiles and amphibians), and Section 5515 (fish). In addition, the protection of birds of prey is provided for in Sections 3503, 3513, and 3800 of the CFGC.

California Native Plant Protection Act (California Fish and Game Code §§ 1900–1913)

The California Native Plant Protection Act requires all state agencies to use their authority to carry out programs to conserve endangered and rare native plants. The California Native Plant Protection Act prohibits the take of such plants, with certain exceptions.

California Desert Native Plants Act (California Food and Agriculture Code §§ 80001–80201)

The California Desert Native Plants Act (DNPA) prohibits the removal of certain species of California desert native plants on public and privately owned lands without a valid permit from the sheriff or commissioner of the county where collecting would occur. This act applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.) provides for statewide coordination of water quality regulations. The State Water Resources Control Board was established as the statewide authority and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis.

The RWQCBs have primary responsibility for protecting water quality in California. As discussed above, the RWQCBs regulate discharges to surface waters under the CWA. In addition, the RWQCBs are responsible for administering the Porter-Cologne Water Quality Control Act.

Pursuant to the Porter-Cologne Water Quality Control Act, the state is given authority to regulate waters of the state, which are defined as any surface water or groundwater, including saline waters. As such, any person proposing to discharge waste into a water body that could affect its water quality must first file a Report of Waste Discharge if a Section 404 permit is not required for the activity. “Waste” is partially defined as any waste substance associated with human habitation, including fill material discharged into water bodies.

Western Joshua Tree Conservation Act

The Western Joshua Tree Conservation Act (WJTCA) was established in July 2023 to streamline development in Joshua tree habitat while standardizing conservation efforts to further preserve the species, which is currently a candidate for listing under CESA. The WJTCA facilitates take permits in exchange for payment of in-lieu mitigation fees. Fee magnitude is dependent on multiple variables, including, but not limited to, tree height, condition, and location. Mitigation fees will be placed into the Western Joshua Tree Conservation Fund, used to acquire, manage, and preserve western Joshua tree habitat in perpetuity. The western Joshua tree will receive protection as a candidate species under CESA, in addition to state protections outlined in the WJTCA, pending a listing petition decision by the California Fish and Game Commission.

1.5.3 REGIONAL AND LOCAL PLANS

County of San Bernardino Land Use Services, Planning Division

According to the San Bernardino County Museum Biological Species Database and General Plan, the project site is located within the Burrowing Owl (*Athene cunicularia*) and Mohave Ground Squirrel (*Xerospermophilus mohavensis*) Biotic Resources Overlay Zones (County of San Bernardino 2012). The overlay map shows projected habitat of state listed, federally listed, and other special-status species, in accordance with the biotic resource conservation measures set forth in the County’s General Plan. Per § 82.11.03 of the San Bernardino Municipal Code*,* “If land use is proposed, or an existing land use is increased by more than 25 percent of disturbed area within a BR [Biotic Resources] Overlay, the land use application shall include a biotic resources

report." The burrowing owl is listed as candidate for listing under CESA and the Mohave ground squirrel is listed as threatened under the CESA. The Biotic Resources Overlay Map also indicates that the project site is in an area with sparse populations of the desert tortoise (*Gopherus agassizii*), which is listed as threatened under the ESA and endangered under the CESA. Though the project occurs within the City of Hesperia and will not require any County approvals, the County guidance is useful for habitat assessment purposes and impact analysis.

City of Hesperia Municipal Code

The Desert Native Plant Protection provision, outlined in Chapter 16.24 of the City of Hesperia Municipal Code, prohibits the removal or translocation of specific desert endemics from "private land within the city" and "public land owned by the city, county of San Bernardino or the state of California" without a removal permit (Ord. 250 (part), 1997; SBCC § 811.0401 & 811.0405). The Desert Native Protection provision applies to the following taxa:

1. The following desert native plants with stems two inches or greater in diameter or six feet or greater in height: a. Dalea, Spinosa (smoketree); b. All species of the family Agavaceae (century plants, nolinas, yuccas); c. All species of the genus Prosopis (mesquites).
2. Creosote Rings, ten feet or greater in diameter.
3. All Joshua trees (mature and immature).
4. All plants protected or regulated by the State DNPA (i.e., Food and Agricultural Code 80001 et seq.) shall be required to comply with the provisions of those statues prior to the issuance of any county development permit or land use application approval. The county agricultural commissioner is the responsible agency for the issuance of any required wood tags, seals or permits.

2 METHODS

2.1 DATABASE SEARCH

Prior to conducting field surveys, existing information regarding biological resources present or potentially present within the survey area was obtained through a review of pertinent literature and databases, including, but not limited to:

- CDFW California Natural Diversity Database (CNDDB; CDFW 2025a)
- California Native Plant Society (CNPS) Electronic Inventory (CNPS 2025)
- USFWS Special-Status Species Database (USFWS 2025a)
- USFWS Information for Planning and Consulting (IPaC) Database (USFWS 2025b)
- USFWS National Wetlands Inventory (NWI) Database (USFWS 2025c)
- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) Database (USGS 2025)
- Natural Resources Conservation Service (NRCS) Soils Survey Database (NRCS 2025)

Database results, along with local biological knowledge, were used for assessment of special-status species' potential for occurrence on or adjacent to the survey area. The potential for occurrence tables created for the project include federally and state-listed species, candidate species, and other state-designated special-status species that have been reported within three miles of the project site (CNDDB and USFWS Special-Status Species Database) and determined to be potentially present in the IPaC Database, as well as California Rare Plant Rank (CRPR) 1 and 2 species that occur within the 'Nine Quads' search for the elevational range of the survey area: 3,475 to 3,525 feet above mean sea level (amsl; CNPS 2025a). The CNPS 'Nine Quads' search queries the USGS quadrangle in which the survey area is located and the surrounding eight quadrangles. The potential for special-status species to occur within the survey area was refined by considering the habitat affinities of each species, field habitat assessments, vegetation mapping, and knowledge of local biological resources.

Rocks Biological Consulting (RBC) reviewed the CDFW Biogeographic Information and Observation System (BIOS) database to determine if the survey area is located within an Essential Connectivity Area (as mapped through the California Essential Habitat Connectivity [CEHC] Project), Terrestrial Connectivity Area of Conservation Emphasis (ACE), or other CDFW-recognized wildlife corridor (CDFW 2025c). The CEHC Project Essential Connectivity Areas represent principal connections between the Natural Landscape Blocks within which land conservation and management actions should be prioritized to maintain and enhance ecological connectivity. The Terrestrial Connectivity ACE dataset gathers spatial data on wildlife, vegetation, and habitats from across the state, and then synthesize this information into thematic maps to help inform discussions on the conservation of biodiversity, habitat connectivity, and climate change resiliency (CDFW n.d.). ACE connectivity ranks are ranked 1 – 5 based on the conservation importance of connectivity based on the best-available data, as summarized in Table 1.

Table 1. ACE Connectivity Ranks

5	Irreplaceable and Essential Corridors: This includes channelized areas as identified in The Nature Conservancy's (TNC) Omniscape model, and priority species movement corridors. TNC-mapped channelized areas are those areas where surrounding land use and barriers are expected to funnel or concentrate animal movement. Channelized areas may represent the last available connection(s) between two areas, making them high priority for conservation.
4	Conservation Planning Linkages: These are the habitat connectivity linkages mapped in the CEHC and fine-scale regional connectivity studies. Habitat connectivity linkages are often based on species-specific models and represent the best connections between core natural areas to maintain habitat connectivity. Linkages have more implementation flexibility than irreplaceable and essential corridors.
3	Connections with Implementation Flexibility: These are other areas that have been identified as having connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time.
2	Large Natural Habitat Areas: These are large blocks of natural habitat (>2,000 acres) where connectivity is generally intact. This includes natural landscape blocks from the 2010 CEHC and updated with the 2016 Statewide Intactness dataset.
1	Limited Connectivity Opportunity: Areas where land use may limit options for providing connectivity (e.g., agriculture, urban) or no connectivity importance has been identified in models.

2.2 BIOLOGICAL SURVEYS

RBC biologists conducted vegetation mapping, habitat assessments for special-status species, a constraints-level aquatic resources assessment, and a general biological survey on June 8, 2023. Focused breeding season burrowing owl surveys were conducted between April 8 and June 25, 2024, and between February 24, and June 17, 2025. A Mohave ground squirrel habitat assessment was conducted on April 7, 2024, and live-trapping surveys were conducted between April 20 and June 31, 2024. Focused Crotch's bumble bee surveys were conducted between May 8 and June 11, 2024; and between April 11 and May 23, 2025. Western Joshua tree census surveys were conducted between April 25, 2024 and August 19, 2025. A formal aquatic resources delineation was conducted on February 4, 2025. An additional general biological survey, vegetation mapping, burrowing owl habitat assessment, constraints-level aquatic resource assessment, and western Joshua tree census were completed for the off-site improvement area along White Fox Trail between July 24 to August 8, 2025. Survey dates, times, personnel, and climatic conditions are provided in Table 2, below.

Note that where applicable, buffer areas are included in this analysis to assess the potential for special-status species or resources in areas immediately adjacent to the project site that could be impacted by the project analyzed herein. Such information should not be considered comprehensive for all biological resources or aquatic resources that may occur in buffer areas, and buffer mapping is intended only for the project analysis outlined herein; such information is not intended for impact analysis of any potential future projects within or adjacent to project buffer areas.

The general biological survey, vegetation mapping, habitat assessments, and the formal aquatic resources delineation were conducted within the approximately 25-acre project site and the approximately 4.5-acre off-site improvements area plus a surrounding 100-foot buffer (survey area) for a total survey area of 48.7 acres. The focused burrowing owl surveys were conducted within the project site, the Amargosa Road off-site improvements area, and a surrounding 500-foot buffer for a total burrowing owl survey area of 106.6 acres; note that this excludes the additional off-site improvements area along White Fox Trail. A subsequent burrowing owl habitat assessment and reconnaissance survey was conducted on July 24, 2025 for the additional off-site improvements area along White Fox Trail plus a 500-foot buffer. The focused western Joshua tree census surveys were conducted within the project site, the off-site improvements area, and a surrounding 50-foot buffer for a total western Joshua tree survey area of 39.02 acres. The focused Crotch's bumble bee surveys and Mohave ground squirrel live trapping surveys did not include survey buffers and were conducted solely within the project site.

Table 2. Summary of Surveys Conducted for the Hesperia Big Box Retail Project

Date	Activity	Surveyor(s)	Time (Start-End)	Temp. (F) (Start-End)	Cloud Cover (%) (Start-End)	Wind Range (mph) (Start; End)
6/18/2023	General biological survey, vegetation mapping, constraints-level aquatic resources assessment	KW, SM	0850-1130	61-71	0-0	1-3; 1-3
4/7/2024	Mohave ground squirrel habitat assessment	PB	1200-1500	54-65	25-25	2-5; 2-5
4/8/2024	Burrowing owl survey #1	AG, HS	0715-1015	41-49	0-0	1-3; 3-8
4/20/2024 - 4/26/2024	Mohave ground squirrel live-trapping session #1	PB	Multi-day*	Multi-day*	Multi-day*	Multi-day*
4/25/2024	Western Joshua tree census #1	HS, KW	0830-1600	49-61	15-1	14-24; 15-25
5/7/2024	Burrowing owl survey #2	AG, KW	0700-0945	52-63	0-0	1-3; 0-3
5/8/2024	Crotch's bumble bee survey #1	DF, HS, IH	0900-1215	66-72	0-0	2-5; 3-7
5/24/2024	Crotch's bumble bee survey #2	AG, DF, KW	0930-1200	60-62	15-0	10-15; 10-15
5/27/2024 - 5/31/2024	Mohave ground squirrel live-trapping session #2	PB	Multi-day*	Multi-day*	Multi-day*	Multi-day*
5/30/2024	Burrowing owl survey #3	AG, HS	0745-1000	67-76	0-0	2-4; 0-3
6/11/2024	Crotch's bumble bee survey #3	DF, GM, HS	0830-1200	78-96	0-0	2-7; 1-3
6/25/2024	Burrowing owl survey #4	AG, GM	0845-1030	82-88	10-5	3-5; 3-5

Date	Activity	Surveyor(s)	Time (Start-End)	Temp. (F) (Start-End)	Cloud Cover (%) (Start-End)	Wind Range (mph) (Start; End)
6/27/2024 - 6/31/2024	Mohave ground squirrel live-trapping session #3	PB	Multi-day*	Multi-day*	Multi-day*	Multi-day*
2/4/2025	Aquatic Resources Delineation	TW, KW	0930-1130	53-56	0-0	10-15; 15-18
2/24/2025	Burrowing owl survey #1	IB, MT, HS	1530-1750	74-68	1-1	5-8; 1-3
2/25/2025	Burrowing owl check	IB, MT, HS	1300-1340	75-75	0-0	1-3; 1-3
4/11/2025	Crotch's bumble bee survey #1	IH, MT, OP	0930-1130	70-80	0-5	0-2; 0-2
4/22/2025	Burrowing owl survey #2	AG, MT, OP	0630-0800	52-60	0-0	1-3; 1-3
4/28/2025	Crotch's bumble bee survey #2	IH, MT, IB	0910-1110	52-58	0-0	2-5; 2-5
5/13/2025	Follow-up western Joshua tree census	AG, MT, OP	1610-1640	56-56	40-40	2-5; 2-5
5/22/2025	Burrowing owl survey #3	IB, MT, OP	0600-0720	59-66	10-10	2-5; 1-3
5/23/2025	Crotch's bumble bee survey #3	IH, MT, OP	1000-1130	75-76	0-0	8-15; 8-15
6/17/2025	Burrowing owl survey #4	IB, MT, OP	0720-0920	73-81	0-0	1-3; 2-5
7/24/2025	General biological survey, vegetation mapping, and burrowing owl habitat assessment of additional off-site improvements area	AG	1120-1300	82-84	5-5	5-8; 8-12
8/8/2025	Constraints-level aquatic resources assessment of additional off-site improvements area	SG	0945-1230	92-97	0-0	1-3; 5-8
8/8/2025	Western Joshua tree census of additional off-site improvements area	AG	0945-1230	92-97	0-0	1-3; 5-8
8/19/2025	Western Joshua tree census update	AG, IH	1030-1715	85-88	0-0	8-12; 8-12

AG = Alec Goodman, DF = David Faulkner, GM = Garrett Moss, HS = Hannah Swarthout, IH = Ian Hirschler, KW = Kelsey Woldt, PB = Phil Brylski, SG = Sarah Gulyas, SM = Shannon Mindeman, TW = Travis Whitney, IB = Imran Badar, MT = Melissa Tamarkin, OP = Oliver Putnam
*Please see survey conditions listed in Appendix F

2.2.1 VEGETATION MAPPING

On June 8, 2023 and July 24, 2025, RBC biologists conducted vegetation mapping in the field to provide a baseline of the biological resources that occur or have the potential to occur within the survey area, comprised of the project site and off-site improvements area plus a 100-foot buffer. RBC conducted vegetation mapping by walking throughout the survey area and mapping vegetation communities on aerial photographs at a 1:2400 scale (1 inch = 200 feet).

The extent of each habitat type (delineated as a habitat polygon on the vegetation maps) was calculated using the Geographic Information System (GIS) application ArcGIS Collector. Habitats were classified based on the dominant and characteristic plant species in accordance with vegetation community classifications outlined in Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). The vegetation communities were also crosswalked with *The Manual of California Vegetation, 2nd Edition* (MCV2) (Sawyer et al. 2009), and the equivalent classification is provided.

2.2.2 GENERAL BIOLOGICAL SURVEY AND HABITAT ASSESSMENTS

RBC biologists conducted a general biological survey for plants and wildlife concurrently with vegetation mapping. Photos taken during the general biological survey are provided in Appendix A. Plant species encountered during the field survey were identified and recorded in field notebooks. Plant species that could not be identified were brought to the laboratory for identification using the dichotomous keys in the *Jepson Manual* (Baldwin et al. 2012). A list of the vascular plant species observed in the survey area is presented in Appendix B.

RBC conducted habitat assessments for special-status plants during the general biological field survey. Special-status plant species include those that are: 1) listed or proposed for listing by federal or state agencies as threatened or endangered; 2) CRPR 1 or 2 species (CNPS 2025a); or 3) considered rare, endangered, or threatened by the CDFW (CDFW 2025a) or other local conservation organizations or specialists.

In the state of California, CNPS is a statewide resource conservation organization that has developed an inventory of California's sensitive plant species. The CRPR system is recognized by the CDFW and essentially serves as an early warning list of potential candidate species for threatened or endangered status. The CRPR system is categorized as outlined in Table 3.

Table 3. CRPR Definitions

CRPR	1A	presumed extirpated in California and rare or extinct elsewhere
	1B	rare, threatened, or endangered in California and elsewhere
	2A	presumed extirpated in California but more common elsewhere
	2B	rare, threatened, or endangered in California but more common elsewhere
	3	plants for which more information needed
	4	plants of limited distribution

CRPR Threat Ranks	0.1	Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
	0.2	Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
	0.3	Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Wildlife species were documented during the field survey by sight, calls, tracks, scat, or other signs, and were recorded in field notebooks. Binoculars (10X42 magnification) were used to aid in the identification of wildlife. In addition to species observed during the surveys, expected wildlife use of the project site was assessed based on known habitat preferences of local species and knowledge of their biogeographic distribution in the region. RBC conducted habitat assessments for special-status wildlife during the general biological field survey. Special-status wildlife species include those that are: 1) listed or proposed for listing by federal or state agencies as threatened or endangered; 2) considered endangered, threatened, or rare by the CDFW (CDFW 2025b); or 3) species recognized by state, local, and/or regional resources agencies as sensitive.

A list of wildlife species observed in the survey area is presented in Appendix B; scientific and common names of wildlife follow CDFW's Complete List of Amphibian, Reptile, Bird and Mammal Species in California (CDFW 2016). Twilight/nighttime surveys were not conducted, therefore crepuscular and nocturnal animals are likely under-represented in the project species list; however, habitat assessments were performed for all potentially occurring special-status species to ensure that such species are adequately addressed herein.

If observed, the location of biological resources designated as special-status by the USFWS, CDFW, and/or CNPS, were recorded in field notebooks, on aerial maps, and/or through the use of Global Positioning System (GPS) units.

2.2.3 SPECIAL-STATUS SPECIES SURVEYS

Western Joshua Tree Census

Western Joshua tree was observed on the project site during the general biological survey on June 18, 2023. As such, an initial focused western Joshua tree census was conducted within the approximately 25-acre project site, off-site improvements area along Amargosa Road, and a 50-foot buffer on April 25, 2024. On May 13, 2025, a follow-up census was conducted in a portion of the 50-foot buffer. On August 8, 2025, a subsequent census was conducted for the additional 1.38-acre off-site improvements area along White Fox Trail plus a 50-foot buffer. The primary survey area (25-acre project site, Amargosa Road off-site improvements area, and a 50-foot buffer) was revisited on August 18, 2025, to update the initial western Joshua tree census.

RBC recorded the location of each western Joshua tree within the approximately 25-acre primary project site, off-site improvements areas, and a 50-foot buffer. Each tree was mapped with a sub-meter GPS and received a unique identification number.

In accordance with the *Western Joshua Tree Conservation Permitting Census Instructions* (CDFW 2024b), trees were classified into the following size classes: A – less than one meter in height; B – one meter or greater but less than five meters in height; and C – five meters or greater in height. Additional information collected included status (live/dead), maturity (branched/not branched), phenological stage (flowers/fruits/none), and proposed impacts (removal, trim, relocation, other, or none). Complete survey methods for the focused western Joshua tree census are presented in Appendix C.

Focused Crotch's Bumble Bee Surveys

Focused Crotch's bumble bee surveys were conducted by RBC biologists two to four weeks apart in May and June of 2024 within the time period when detection of Crotch's bumble bee is greatest (i.e., April through August). Surveys were repeated in 2025 between April 11 and May 23. Three surveys were performed in accordance with the *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (CDFW 2024c). Surveys were conducted by walking transects through the project site focusing on areas where ample nectar sources were present, with a minimum of one person-hour of searching per three acres of suitable habitat. Surveyors were prepared to record the location of any observed Crotch's bumble bee, along with population size and nesting status, and to collect non-lethal photo vouchers captured at various angles to confirm accurate identification. All arthropods and potential nectar sources were identified and recorded. Full survey methods, details, and species lists can be found in Appendix D and Appendix E.

Mohave Ground Squirrel Habitat Assessment and Live-Trapping Surveys

The project site is within the San Bernardino County Mohave Ground Squirrel Overlay Zone (County of San Bernardino 2012); as such, the project site was assessed for the suitability and presence of Mohave ground squirrel. RBC first conducted a habitat assessment and aural/visual survey on April 7, 2024 to assess suitability for Mohave ground squirrel based on the species' ecological requirements. Based on the presence of suitable habitat, RBC conducted focused Mohave ground squirrel surveys, which consisted of three live-trapping sessions between April 20, 2024 and June 31, 2024 within suitable on-site habitat.

One trapping grid was set up throughout the project site in habitat most suitable for Mohave ground squirrel. To supplement live trapping, camera traps were used throughout the trapping grids. Live-trapping and surveillance occurred in accordance with CDFW's 2023 *Mohave Ground Squirrel Survey Guidelines*; a full description of survey methodology can be found in Appendix F.

Focused Breeding Season Burrowing Owl Surveys

The project site is within the San Bernardino County Burrowing Owl Overlay Zone (County of San Bernardino 2012); as such, the project site was assessed for the suitability and presence of burrowing owls. Focused burrowing owl surveys were conducted during the species' breeding season, February 1 – August 31. RBC conducted focused burrowing owl surveys within accessible suitable habitat within the project site, Amargosa Road off-site improvements area, and a surrounding 500-foot buffer between April 8, 2024, and June 25, 2024. Surveys were repeated in

2025 between February 24 and June 17. On July 24, 2025, a subsequent burrowing owl habitat assessment and reconnaissance survey was conducted within the additional off-site improvements area along White Fox Trail plus a 500-foot buffer. Buffer areas not directly accessible were surveyed with binoculars.

Survey methods generally followed the guidelines outlined in the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012; BUOW Guidelines). Presence/absence of burrowing owls within the survey areas were assessed by analyzing the presence of suitable burrows and searching for live burrowing owls and recent burrowing owl sign. Complete survey methodology for the focused burrowing owl surveys is presented in Appendix G and Appendix H. Methodology for the additional habitat assessment and reconnaissance survey is presented in Appendix I.

2.3 CONSTRAINTS–LEVEL AQUATIC RESOURCES ASSESSMENT AND FORMAL JURISDICTIONAL DELINEATION

On May 18, 2023, RBC conducted a constraints-level assessment of the aquatic resources survey area (25-acre project site, Amargosa Road off-site improvements area, and a 100-foot buffer around those areas) to identify areas that may be considered potentially jurisdictional under the Corps pursuant to Section 404 of the CWA; the RWQCB pursuant to Section 401 of the CWA and the Porter-Cologne Act; or CDFW pursuant to CFGC §1602. A subsequent constraints-level assessment was conducted for the additional off-site improvements area along White Fox Trail plus a 100-foot buffer on August 8, 2025. Areas with depressions, drainage patterns, wetland vegetation, or riparian vegetation within the survey area were assessed for potential jurisdictional status, with focus on the presence of defined channels, soils, and hydrology.

A formal jurisdictional delineation was conducted for aquatic resources survey area on February 4, 2025. Prior to the on-site delineation, RBC reviewed USGS NHD and topography data (USGS 2025), USFWS NWI data (USFWS 2025c), and NRCS soils data (NRCS 2025) to further determine the potential locations of aquatic resources within the aquatic resources survey area. RBC also utilized Google Earth to assess current and historic presence or absence of flows and/or ponding in the survey area (Google Earth Pro 2025). Staff evaluated areas with depressions, drainage patterns, and/or wetland vegetation were evaluated within the aquatic resources survey area, with focus on the presence of defined channels and/or wetland vegetation, soils, and hydrology. Field staff examined potential wetland waters of the U.S. using the routine determination methods set forth in Part IV, Section D, Subsection 2 of the Corps 1987 *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (Corps 2008). Complete methods are presented in the *Hesperia Big Box Retail Project Aquatic Resources Delineation Report* (Appendix J).

Desktop review and the constraints-level assessment conducted on August 8, 2025 along the White Fox Trail additional off-site improvements area identified several additional erosional features and one depressional area. No potentially jurisdictional features were observed during this assessment, and thus, an amendment of the Aquatic Resources Delineation Report (Appendix J) was not warranted.

3 RESULTS

This section includes results of the literature review, vegetation mapping, general biological survey, and the constraints-level aquatic resources assessment. Special-status biological resources are also addressed in this section and are defined as follows: 1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened/endangered population sizes; 2) species and their associated habitat types recognized by local and regional resource agencies as sensitive; 3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; 4) wildlife corridors and habitat linkages; and/or 5) biological resources that are otherwise regulated under local, state, and/or federal laws.

3.1 PHYSICAL SETTING

The survey area is relatively flat and supports primarily disturbed native habitat with smaller areas of disturbed and developed land. The survey area includes the project site, off-site improvement areas along Amargosa Road, White Fox Trail, and the Key Pointe Avenue and Main Street intersection, and a 100-foot buffer. Anthropogenic disturbances occur throughout the survey area; Amargosa Road bisects the northern and southern project site parcels, a dirt road intersects the southern parcels, and fencing occurs along the western border of the northern parcel. To the north, east, and west, the survey area borders dirt and paved roads and vacant lots composed of scattered, disturbed native habitat, disturbed land, and developed land. To the south, the project site is surrounded by commercial development and roads including Main Street and I-15.

Elevations within the survey area range from approximately 3,475 to 3,525 feet amsl. Soils mapped within the survey area include Cajon sand, 0 to 2 percent slopes and Hesperia loamy fine sand, 2 to 5 percent slopes (NRCS 2025).

3.2 VEGETATION COMMUNITIES AND LAND COVERS

The survey area supports five vegetation communities and other land covers. Table 4 provides a summary of vegetation/land cover within the survey area, which are depicted on Figure 2.

Table 4. Summary of Vegetation/Land Cover Within the Survey Area

Vegetation (Holland)[1]	Vegetation[2]	Global/ State Rank[3]	Project Site (acres)	Off-Site Improvements Area (acres)	100-foot Buffer (acres)	Total Survey Area (acres)
Developed	Developed/ Disturbed	No Rank	1.44	1.69	4.62	7.75
Disturbed	Developed/ Disturbed	No Rank	0.97	1.23	2.90	5.09
Disturbed California Juniper Woodland	*Juniperus californica* Woodland Alliance	G4/S4	8.40	1.23	7.54	17.18

Vegetation (Holland)[1]	Vegetation[2]	Global/ State Rank[3]	Project Site (acres)	Off-Site Improvements Area (acres)	100-foot Buffer (acres)	Total Survey Area (acres)
Disturbed Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	G5/S5	0.55	0.40	3.92	4.87
Joshua Tree Woodland	*Yucca brevifolia* Woodland Alliance	G4/S3.2	13.61	0.02	0.23	13.86
Total			24.97	4.57	19.20	48.74

[1] *Vegetation communities recognized by Holland (1986)*
[2] *Vegetation communities from Holland (1986) crosswalked to The Manual of California Vegetation (Sawyer et al. 2009)*
[3] *Alliances with ranks of S1-S3 are considered Sensitive Natural Communities jurisdictional under CEQA (CDFW 2024a)*

Natural communities with ranks of S1 through S3 are considered sensitive natural communities by CDFW to be addressed in the environmental review processes of CEQA. The survey area supports one native habitat type, Joshua tree woodland, that is considered a sensitive vegetation community by CDFW (CDFW 2024a), as discussed below.

Developed

Developed land is typically classified as lands regularly utilized by humans that are devoid of natural habitat. Developed land within the project site (1.44 acres) is comprised of a dirt road and dirt truck parking area. Developed land within the off-site improvements area (1.69 acres) consists of the paved Amargosa Road. Developed land within the 100-foot buffer (4.62 acres) includes portions of Cataba Road, Amargosa Road, Key Pointe Drive, and dirt roads. The entire survey area consists of 7.75 acres of developed land.

Developed land is not recognized by CDFW (CDFW 2024a) as a vegetation community; therefore, it is not considered a sensitive natural community.

Disturbed

Disturbed land is typically classified as land on which the native vegetation has been significantly altered by agriculture, construction, or other land-clearing activities, and the species composition and site conditions are not characteristic of the disturbed phase of a plant association (e.g., disturbed Riversidean sage scrub). Disturbed land is typically found in vacant lots, along roadsides, within construction staging areas, and in abandoned fields. The habitat is typically dominated by non-native annual species and perennial broadleaf species.

Disturbed land occurs along the interior of the project site boundary in linear, disjunct segments in the form of dirt roads (0.97 acre). Disturbed land on site is primarily vegetated by non-native species such as short podded mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), and soft brome (*Bromus hordeaceus*). There are a few scattered native species throughout the disturbed land, such as fiddleneck (*Amsinckia* sp.) and yellow rabbitbrush (*Chrysothamnus*

viscidiflorus) however, they are isolated occurrences and do not function as separate vegetation communities or land cover types. Disturbed land also occurs within the off-site improvements area along Amargosa Road, consisting of bare ground and non-native species along the paved roadway, and throughout the off-site improvements area along White Fox Trail (1.23 acres). Disturbed land occurs within the 100-foot buffer as dirt roads (2.9 acres). The entire survey area consists of 5.09 acres of disturbed land.

Disturbed land is not recognized by CDFW (CDFW 2024a) as a vegetation community; therefore, it is not considered a sensitive natural community .

Disturbed California Juniper Woodland

Disturbed California juniper woodland is similar to California juniper woodland; however, it has been substantially physically altered by human disturbance. Disturbed California juniper woodland occurs on ridges, slopes, valleys, alluvial fans, and valley bottoms. It is dominated by California juniper as a scattered tree or shrub. California juniper may be co-dominate with single leaf pinyon (*Pinus monophylla*) and Joshua tree. Shrubs may include big sagebrush (*Artemisia tridentata*), blackbrush (*Coleogyne ramosissima*), ephedra species (*Ephedra* spp.), and chaparral yucca (*Hesperoyucca whipplei*).

Disturbed California juniper woodland primarily occurs on the western side of the northern portion and throughout the majority of the southern portion of the project site (8.40 acres; Figure 2). It also occurs along the southern portion of the off-site improvements area on Amargosa Road and throughout the off-site improvements area along White Fox Trail (1.23 acres) and is the predominant vegetation community within the 100-foot buffer along White Fox Trail (7.54 acres). It is dominated by California juniper and emergent Joshua tree in the tree strata. The shrub layer includes green ephedra (*Ephedra viridis*), Cooper's box thorn (*Lycium cooperi*), rubber rabbitbrush, California buckwheat (*Eriogonum fasciculatum*), yellow rabbitbrush, and Mexican bladder sage (*Scutellaria mexicana*). The herbaceous layer includes soft brome, red brome (*Bromus rubens*), London rocket, annual bursage (*Ambrosia acanthacarpa*), and common storks-bill (*Erodium cicutarium*), among other herbaceous species. Human disturbances, including off-road vehicle tracks and trash dumping, are present throughout this community. The entire survey area consists of 17.18 acres of disturbed California juniper woodland.

California juniper woodland is ranked as G4/S4, meaning it is "apparently secure worldwide/statewide" (CNPS 2024) Based on this ranking, CDFW does not considered it a sensitive natural community .

Disturbed Rubber Rabbitbrush Scrub

Disturbed rubber rabbitbrush scrub is similar to rubber rabbitbrush scrub; however, it has been substantially physically altered by human disturbance. Disturbed rubber rabbitbrush scrub occurs on all topographic settings, especially in disturbed settings and consists of rubber rabbitbrush, big sagebrush, ephedra species, and California buckwheat, with possible emergent trees at low cover.

Disturbed rubber rabbitbrush scrub occurs within the southern portion of the project site as well as along the borders of both portions (0.55 acre); it also occurs within the northern portion of the off-site improvements area on Amargosa Road and the eastern portion of the off-site improvements

area along White Fox Trail (0.40 acre). Disturbed rubber rabbitbrush scrub is primarily in the 100-foot buffer in the north, east, and west borders of the northern parcel (3.92 acres). It is dominated by rubber rabbitbrush, with California buckwheat and annual species also present, including London rocket, common stork's bill, fiddleneck, and annual ambrosia. Human disturbances within this vegetation community include trash dumping and off-road vehicle use. The entire survey area consists of 4.87 acres of disturbed rubber rabbitbrush scrub.

Rubber rabbitbrush scrub is ranked as G5/S5, meaning it is "demonstrably secure because of its worldwide/statewide abundance" (CNPS 2024). Based on this ranking, CDFW does not consider it a sensitive natural community.

Joshua Tree Woodland

Joshua tree woodland occurs on gentle alluvial fans, ridges, and gentle to moderate slopes and consists of scattered Joshua trees in the tree strata with a variety of desert shrubs, such as big sagebrush, blackbrush, ephedra species, California buckwheat, and Cooper's goldenbush (*Ericameria cooperi*).

Joshua tree woodland occurs on the majority of the northern portion of the project site (13.61 acres) and a small portion of the off-site improvements area (0.02 acre). It also occurs in a small portion of the 100-foot buffer on the east border of the northern parcel (0.23 acre). Joshua tree woodland is dominated in the tree strata by Joshua tree and California juniper. Green ephedra, Cooper's box thorn, bladder sage, California buckwheat, and yellow rabbitbrush comprise the shrub layer. The herbaceous layer includes soft brome, red brome, and common stork's-bill, amongst other species. This vegetation community is disturbed by human activities, as evidenced by trash dumping and the presence of invasive herbaceous plants throughout. The entire survey area consists of 13.86 acres of Joshua tree woodland.

Joshua tree woodland is ranked as G4/S3.2, meaning it is "apparently secure worldwide," "vulnerable statewide," and "threatened" (CNPS 2024); therefore, it is considered a sensitive natural community and receives consideration under CEQA.

3.3 PLANTS AND WILDLIFE

The survey area supports a relatively low diversity of wildlife and plant species. A total of 41 plant species (66 percent native, 34 percent non-native) were observed during biological surveys (Appendix B). A total of 19 bird species, two reptile species, four mammal species, and 47 invertebrate species were observed (Appendix B).

3.3.1 SPECIAL-STATUS PLANT SPECIES

One special status plant species, western Joshua tree, was observed during the field survey, as detailed below. No additional federally or state threatened or endangered plant species or other special-status plant species were observed during the field survey, and none have a moderate or high potential to occur within the survey area based on the disturbed nature of the site and lack of suitable habitat (Table 5). Although there are documented occurrences of special-status plant species within three miles of the project site (Figures 3a and 3b), the survey area itself does not support suitable habitat for these species, as detailed further in Table 5, below.

Please note that CRPR 3 and 4 species were omitted from the potential to occur analysis below in accordance with local CEQA thresholds due to their relatively low threat status. Special-status plant species with low potential to occur or not expected to occur are not addressed further in this report. Because these species have low or no potential for occurrence, impacts to these species at a level considered significant under CEQA (i.e. population level effects) are not anticipated.

Table 5. Assessment of Special-Status Plant Species Potential to Occur Within the Survey Area

Species	Status*	Habitat Description	Potential to Occur
Beaver dam breadroot (*Pediomelum castoreum*)	CRPR 1B.2	Perennial herb. Blooms April-June. Creosote bush scrub and Joshua tree woodland. Elevation 2,000-5,000 feet.	**Low.** Disturbed suitable habitat occurs on site; however, this perennial herb was not documented during the general biological survey and the species has not been observed within five miles of the survey area (Calflora 2024).
Black bog-rush (*Schoenus nigricans*)	CRPR 2B.2	Perennial herb. Blooms August-September. Marshes and swamps. Elevation 490-6,560 feet.	**None.** Species is associated with wetlands, which are not present on site.
Booth's evening-primrose (*Eremothera boothii* ssp. *boothii*)	CRPR 2B.3	Annual herb. Blooms April-September. Joshua tree woodland and pinyon and juniper woodland. Elevation 2,675-7,875 feet.	**Low.** Species occurs in sandy or gravelly slopes and washes, which are not present on site.
Desert cymopterus (*Cymopterus deserticola*)	CRPR 1B.2	Perennial herb. Blooms March-May. Joshua tree woodland and Mojavean desert scrub. Elevation 2,065-4,920 feet.	**Low.** Species generally grows in sandy alluvial soils, which are not present on site. Species has not been recorded within 12 miles of the survey area (Calflora 2024).
Greata's aster (*Symphyotrichum greatae*)	CRPR 1B.3	Perennial rhizomatous herb. Blooms June-October. Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland. Elevation 985-6,595 feet.	**None.** Survey area is east of known species range.
Latimer's woodland-gilia (*Saltugilia latimeri*)	CRPR 1B.2	Annual herb. Blooms March-June. Chaparral, Mojavean desert scrub, and pinyon and juniper woodland. Elevation 1,310-6,235 feet.	**Low.** Disturbed suitable habitat occurs on site; however, this species is associated with the San Bernardino Mountains in this region and has not been documented within 15 miles of the survey area (Calflora 2024).

Species	Status*	Habitat Description	Potential to Occur
Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*)	CRPR 1A	Perennial rhizomatous herb. Blooms August-October. Marshes and swamps (freshwater and coastal salt). Elevation 35-5,005 feet.	**None.** Species is primarily associated with wetlands, which are not present on site. Species is presumed extinct.
Mojave milkweed (*Asclepias nyctaginifolia*)	CRPR 2B.1	Perennial herb. Blooms May-June. Mojavean desert scrub and pinyon and juniper woodland. Elevation 2,870-5,580 feet.	**None.** Species range is restricted to the eastern Mojave Desert. The only documented occurrence in the western Mojave Desert region is from 1916.
Mojave monkeyflower (*Diplacus mohavensis*)	CRPR 1B.2	Annual herb. Blooms April-July. Creosote bush scrub and Joshua tree woodland. Elevation 1,970-3,935 feet.	**Low.** Survey area is south of known species range. Primarily found on slopes, which are not present on site.
Mojave tarplant (*Deinandra mohavensis*)	SE; CRPR 1B.3	Annual herb. Blooms (January-May) June-October. Chaparral, coastal scrub, and riparian scrub. Elevation 2,100-5,250 feet.	**None.** No suitable habitat is present on site.
Palmer's mariposa-lily (*Calochortus palmeri* var*. palmeri*)	CRPR 1B.2	Perennial bulbiferous herb. Blooms April-July. Chaparral, lower montane coniferous forest, meadows and seeps. Elevation 2,330-7,840 feet.	**None.** No suitable habitat is present on site.
Rock Creek broomrape (*Aphyllon validum* ssp. *validum*)	CRPR 1B.2	Perennial herb (parasitic). Blooms May-September. Chaparral and pinyon and juniper woodland. Elevation 3,380-6,560 feet.	**None.** No suitable habitat is present on site. Survey area is outside known species range.
Sagebrush loeflingia (*Loeflingia squarrosa* var*. artemisiarum*)	CRPR 2B.2	Annual herb. Blooms April-May. Desert dunes, great basin scrub, and Sonoran desert scrub. Elevation 2,295-5,300 feet.	**None.** Species is strongly associated with dune habitat, which is not present on site. Nearest record of this species is approximately three miles from the survey area (Calflora 2024).
San Bernardino aster (*Symphyotrichum defoliatum*)	CRPR 1B.2	Perennial rhizomatous herb. Blooms July-November. Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland (vernally mesic). Elevation 5-6,695 feet.	**None.** No suitable habitat is present on site; average precipitation at the survey area is less than required for this species.

Species	Status*	Habitat Description	Potential to Occur
Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*)	CRPR 1B.2	Perennial stem. Blooms April-June (August). Chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Elevation 1,395-5,905 feet.	Low. Disturbed suitable habitats occur on site, but the species likely would have been observed if present. Nearest record is approximately two miles from survey area (Calflora 2024).
Southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*)	CRPR 1B.2	Perennial rhizomatous herb. Blooms June-August. Chaparral, cismontane woodland, and lower montane coniferous forest. Elevation 1,395-6,560 feet.	None. Species generally grows in gravelly soils near streambanks, which are not present on site. Suitable habitat not present.
Western Joshua tree (*Yucca brevifolia*)	CSE	Tree. Blooms March-May. Joshua tree woodland and desert scrub. Elevation 1,315-7,545 feet.	Present. Species abundant throughout much of the survey area.
White-bracted spine flower (*Chorizanthe xanti* var*. leucotheca*)	CRPR 1B.2	Annual herb. Blooms April-June. Coastal scrub (alluvial fans), Mojavean desert scrub, and pinyon and juniper woodlands. Elevation 9,85-3,935 feet.	None. No suitable habitat is present on site; survey area is north of known species range.

CRPR: California Rare Plant Rank
CSE: Candidate Endangered Species under the California Endangered Species Act (CESA)
SE: State Endangered
* CRPR definitions provided in Table 3

Threatened and Endangered Plant Species

Western Joshua Tree (Yucca brevifolia)

The western Joshua tree is currently a candidate for listing under CESA based on a 2019 petition submitted by the Center for Biological Diversity (Center for Biological Diversity 2019). In addition, the WJTCA went into effect July 2023, expanding its protection (see Section 1.5.2).

The western Joshua tree is endemic to the Mojave Desert in southern Nevada, southwestern Utah, western Arizona, southeastern California, and northern Baja California Norte (USDA n.d.). Within California, western Joshua tree is associated with juniper, single leaf pinyon, shrub live oak (*Quercus turbinella*), blackbrush, green ephedra, California buckwheat, white burrobrush (*Hymenoclea salsola*), bladder sage, and Mojave desertrue (*Thamnosma montana*) amongst other species (USDA n.d.). Numerous vegetation communities can support western Joshua tree including but not limited to, Joshua tree woodland, California juniper tree woodland, Mojave desert scrub, and Mojave mixed steppe habitats (USDA n.d.). The yucca moth (*Tegeticula synthetica*) is responsible for pollination, and seeds are dispersed by mammals and wind. On average, western Joshua tree's temperature threshold ranges from -13 °F to 120 °F and annual precipitation requirements range from 3.9 to 10.6 inches (USDA n.d.).

Threats to western Joshua tree include climate change, fire, and habitat loss or degradation due to human activities (Center for Biological Diversity 2019). Seed dispersal is greatly inhibited by climate change-induced droughts which stall recruitment and kill adult trees. Development of private lands

containing large stands of western Joshua tree poses a threat to this species (Center for Biological Diversity 2019).

A total of 425 western Joshua trees (including dead individuals) were recorded within the project site, off-site improvements area, and a 50-foot buffer during the focused census on April 25, 2024, and the follow-up census surveys on May 13, August 8, and August 19, 2025. The trees occur throughout the survey area, primarily within Joshua tree woodland habitat but also in the disturbed California juniper woodland vegetation community. On-site western Joshua trees vary in size class, as determined by height, with some plants having heights below one meter (categorized as Class A) and others exceeding five meters (categorized as Class C). Survey results are provided in Appendix C.

3.3.2 SPECIAL-STATUS WILDLIFE SPECIES AND CRITICAL HABITATS

Four special status wildlife species were observed during biological surveys, as detailed below, and seven additional species have a low-to-moderate, moderate, or high potential to occur within the survey area. A full list of special-status wildlife assessed and their potential to occur within the survey area is presented in Table 6, below.

Table 6. Assessment of Special-Status Wildlife Species Potential to Occur Within the Survey Area

Species	Status	Habitat Description	Potential to Occur
INVERTEBRATES			
Crotch's bumble bee (*Bombus crotchii*)	CS	Arid shrublands and grasslands in coastal and foothill areas of southern California. Nectar plants include milkweeds, buckwheat, and lupines.	Not Observed; Moderate. Moderately suitable habitat present, as well as known nectar plants and suitable nesting conditions. No recent observations within project vicinity. Species was not observed during 2024 or 2025 focused surveys.
Monarch butterfly, California overwintering population (*Danaus plexippus plexippus* pop. 1)	FE (Candidate)	Found in a variety of habitats across the United States and Mexico (e.g., grasslands, urban land, mountains, and coastal habitats). Exclusively oviposit on milkweed. Nectivorous adults require flowering plants. Roost in eucalyptus, Monterey pines, and Monterey cypresses in California.	Low. Potential nectar sources observed. No milkweed or eucalyptus observed; thus, the site does not have potential to support reproduction or overwintering.

Species	Status	Habitat Description	Potential to Occur
AMPHIBIANS			
Arroyo toad (*Anaxyrus californicus*)	FE, SSC	Narrow and shallow aquatic and riparian areas with slow moving water as well as nearby upland areas that are not too widely dispersed. Typical aquatic habitats are bordered by low-elevation hills, scattered vegetation, and sandy, fine gravel, and pliable soils accompanied by rocks of varied size	Very Low. Riparian and aquatic areas absent from survey area.
REPTILES			
Desert tortoise (*Gopherus agassizii*)	FT, SE	Burrow in firm sandy or gravelly soils along creosote bush flats, riverbanks, washes, dunes, alluvial fans, hillsides, and canyons, often containing rocky areas.	Very Low. Although this species has been observed within three miles of the survey area, no suitable burrows for desert tortoise were observed and suitable habitat does not occur on site. In addition, the site is largely separated from other areas of native habitat by development.
Coast horned lizard (*Phrynosoma blainvillii*)	SSC	A variety of habitats including sage scrub, chaparral, and coniferous and broadleaf woodlands. Found on sandy or friable soils with open scrub. Requires open areas, bushes, and fine loose soil.	Low. Habitat of low suitability is present on site, particularly along disturbed dirt roads at the boundaries of the survey area; however, the survey area occurs at the eastern extent of this species' range and the species has not been recorded in the vicinity.
Mojave fringe-toed lizard (*Uma scoparia*)	SSC	Sparsely vegetated dunes, flats, riverbanks, and washes containing loose sands for burrowing.	Very Low. Suitable sandy habitat is absent from survey area and soils have been disturbed and compacted.
BIRDS			
Black tailed gnatcatcher (*Polioptila melanura*)	WL	Found in desert brush, ravines, dry washes, and mesquites. Occurs in many dry, scrubby habitats up to 7,000 ft above mean sea level, including creosote scrub.	Low. Prefers habitats with spiny trees and scrubs, which are largely absent from the survey area. California juniper, a tree occasionally utilized for nesting by this species, is present on site.

Species	Status	Habitat Description	Potential to Occur
Bell's sparrow (*Artemisiospiza belli belli*)	WL	Found in sagebrush, alkali desert scrub, and desert scrub in low, dense stands of shrubs. Frequently associated with *Atriplex* spp. in desert habitats.	Observed; Moderate. Observed during a focused burrowing owl survey on May 7, 2024.
Brown-crested flycatcher (*Myiarchus tyrannulus*)	WL	Found in riparian thickets of willows, mesquites, and cottonwoods. Nest in desert oases or riparian habitat.	Very Low. Riparian thickets absent from survey area.
Burrowing owl (*Athene cunicularia*)	CS, BCC	Found in grasslands and open scrub from the coast to foothills. Strongly associated with California ground squirrel (*Otospermophilus beecheyi*) and other fossorial mammal burrows.	Observed; Moderate. Ground squirrel activity and several suitable, unoccupied burrows observed throughout site. Recorded within three miles of survey area. This species was not observed during 2024 focused breeding season surveys; however, one individual was observed during one focused breeding season survey in 2025, and sign was observed during two other focused surveys in 2025.
California gull (*Larus californicus*)	WL, BCC	Found foraging in pastures or parking lots and breeding along inland lakes and rivers.	Observed; no potential for nesting. Species observed during focused burrowing owl surveys. Foraging habitat is present; however, roosting and nesting habitat is absent.
Cooper's hawk (*Accipiter cooperii*)	WL	Usually in oak woodlands but occasionally in willow or eucalyptus woodlands. Also observed in urban or semi-urban areas.	Low-to-Moderate. Preferred habitat not present; however, disturbed California juniper and Joshua tree woodlands within project site are moderately suitable for foraging. Suitable urban environments with documented observations of this species are present in project vicinity.
Costa's hummingbird (*Calypte costae*)	BCC	Breeds in desert scrub. Occurs in Sonoran and Mojave Desert scrub, coastal California chaparral, California sage scrub, deciduous forest, and desert scrub.	High. Suitable disturbed desert scrub and woodlands occurs on site and nectar sources are present. Observations have been made within project vicinity.

Species	Status	Habitat Description	Potential to Occur
Ferruginous hawk (*Buteo regalis*)	WL	Found in grassland, desert, and scrubland habitats and at the edges of low/moderate elevation forests.	Low. Infrequent winter visitor and does not nest in southern California. Prefers to forage in grasslands or other large tracts of open habitat, which are not present on site. Disturbed habitats on site offer minor foraging opportunities.
Golden eagle (*Aquila chrysaetos*)	FP, WL	Found in mountainous canyonlands, deserts, agricultural fields, and semi-open habitats.	Very Low. Survey area does not occur near suitable nesting habitat. Prefers to forage in large tracts of open habitat, which are not present on site. Not known from project vicinity.
Lawrence's goldfinch (*Spinus lawrencei*)	BCC	Found in chaparral, coastal scrub, pinyon pine-juniper woodlands, oak woodlands, riparian, and disturbed habitats. Also found in semi-urban, weedy, and agricultural environments. Generally associated with a water source, especially in drier regions, since goldfinch species need to drink regularly.	Moderate. Disturbed habitats on site contain weedy forbs and grasses that are known seed sources for this species. Nearby California Aqueduct provides a reliable water source.
Le Conte's Thrasher (*Toxostoma lecontei*)	SSC, BCC	Low, sandy, open deserts in mostly flat or rolling landscapes. Associated with saltbush, shadscale, cholla cactus, creosote, yucca, mesquite, and ocotillo over most of their range; sparsely distributed throughout suitable habitat.	Low-to-Moderate. Disturbed desert scrub and desert woodland habitats occur on site, which are moderately suitable but lack plant species preferred for nesting. This species has been documented within the project vicinity.
Least Bell's vireo (*Vireo bellii pusillus*)	FE; SE	Riparian woodland with understory of dense young willows or mulefat and willow canopy. Nests often placed along internal or external edges of riparian thickets.	Very Low. Survey area lacks riparian thickets required by species.
Loggerhead shrike (*Lanius ludovicianus*)	SSC	Found within grassland, chaparral, desert, and desert edge scrub, particularly near dense vegetation used for nesting.	Observed; High. Observed during general biological survey on June 8, 2023, and focused species surveys on April 8, May 30, June 11, and June 25, 2024.

Species	Status	Habitat Description	Potential to Occur
Lucy's warbler (*Leiothlypis luciae*)	SSC	Primarily found in mesquite thickets; opportunistically found in palo verde, tamarisk, cottonwood, ironwood, and willow trees. Nests are placed in tree cavities.	Very Low. Survey area lacks riparian thickets required by species.
Merlin (*Falco columbarius*)	WL	Found in a wide variety of open and semi-open habitats. Primarily found in grasslands when wintering in southern California but will inhabit any habitat except dense woodland.	Low-to-Moderate. Semi-open disturbed desert habitats marginally suitable for foraging are present on site. Species does not nest in southern California. This species has been documented within the vicinity.
Northern harrier (*Circus hudsonius*)	SSC; BCC	Found in meadows, grasslands, open rangelands, desert sinks, and fresh and saltwater emergent wetlands. Nests on the ground, usually near marsh edge, but may also nest in grasslands, grain fields, or sagebrush flats several miles from water.	Low. Suitable breeding habitat is not present. Preferred foraging habitat is not present on site, but species has been documented in the vicinity near Mojave Narrows Regional Park.
Olive-sided flycatcher (*Contopus cooperi*)	SSC, BCC	Found along edges or within openings of semi-open to dense forests, largely composed of conifers in Southern California. Broaden tree genera preferences during migration; desert migrants are found in various habitats containing trees. Nest primarily in conifers, occasionally in willows, oaks, alders, and eucalyptus.	Very Low. Species is primarily associated with montane and riparian forests in the project vicinity, which are not present on site.
Prairie falcon (*Falco mexicanus*)	WL	Open country throughout the West wherever they can find bluffs and cliffs to nest on, including in alpine habitat to about 11,000 feet. Breeding habitats include grasslands, shrub steppe desert, areas of mixed shrubs and grasslands, or alpine tundra, agriculture fields.	Low. Suitable breeding habitat is not present. Tends to forage in areas with lower and sparser vegetation than found on site.

Species	Status	Habitat Description	Potential to Occur
Sharp-Shinned Hawk (*Accipiter striatus*)	WL	Found in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats.	Low-to-Moderate. Preferred habitat not present; however, disturbed California juniper and Joshua tree woodlands within survey area are moderately suitable. Species rarely nests in southern California but has been documented in the vicinity during winter months.
Swainson's hawk (*Buteo swainsoni*)	ST	Found in open habitats for foraging including grasslands, prairies, and sometimes pastures. Nest in solitary trees or sometimes very small groves near water.	Low. Suitable breeding habitat is not present. Preferred foraging habitat is not present on site, but species has been documented in the vicinity near Mojave Narrows Regional Park.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE, SE	Found in dense riparian woodlands and forests. Often nests on or near lakes, streams, and rivers.	Very Low. Survey area lacks riparian habitats required by this species.
Summer tanager (*Piranga rubra*)	SSC	In the Southwest they breed in low-elevation willow and cottonwood woodlands, and in higher-elevation mesquite and saltcedar stands. During migration, Summer Tanagers stop in habitats similar to those of their breeding range, as well as parks, gardens, and beach ridges	Very Low. Survey area lacks suitable riparian habitats.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT; SE	Inhabits riparian areas exclusively, typically nesting in low to moderate elevation riparian woodlands with native broadleaf trees. Generally observed in cottonwood-willow-dominated habitats, although riparian cover can vary. In California, habitat often consists of willow species and Fremont cottonwoods (*Populus fremontii*).	Very Low. Survey area lacks suitable riparian habitats.
Yellow warbler (*Setophaga petechia*)	SSC	Nests in riparian habitats and bordering habitats often containing willows, cottonwoods, and sycamore trees.	Very Low. Survey area lacks suitable riparian habitats.

Species	Status	Habitat Description	Potential to Occur
MAMMALS			
American Badger (*Taxidea taxis*)	SSC	Found in arid, open grasslands, fields, and pastures containing firm soil for burrowing.	Low. The site is largely separated from other areas of native habitat by roads and other development. No recent observations within project vicinity.
Desert kit fox (*Vulpes macrotis arsipus*)	FBM	Found in creosote scrub bush, desert scrub, and grassland communities.	Low. The site is largely separated from other areas of native habitat by roads and other development. No recent observations within project vicinity.
Mohave ground squirrel (*Xerospermophilus mohavensis*)	ST	Prefer sandy soil or sandy gravel mix, with infrequent sage brush (*Artemisia* spp.) growth. Documented in all major scrub habitats in the western Mojave Desert including Mojave creosote scrub, desert saltbush scrub, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodlands.	Not Observed; Low. Suitable disturbed desert scrub and desert woodland habitats occur on site. Documented within three miles of the survey area. Species was absent during 2024 live-trapping surveys.
Pallid bat (*Antrozous pallidus*)	SSC	Found in arid or semi-arid habitats, often in mountainous or rocky areas near water. They are also found over open, sparsely vegetated grasslands. During the daylight hours, pallid bats typically roost in cracks and crevices, which may include tile roofs, exfoliating bark of trees, or rocky outcrops.	Low. Suitable foraging habitat occurs on site in desert scrub and water source available nearby; however, no suitable roosting habitat occurs on site.
Townsend's big-eared bat (*Corynorhinus townsendii*)	SSC	Roosts in caves, mines, tunnels, buildings, and other anthropogenic structures. Found in all habitats excluding subalpine and alpine areas.	Low. Suitable foraging habitat occurs on site; however, suitable roosting habitat is not present.
Western mastiff bat (*Eumops perotis californicus*)	SSC	Found in areas with an abundance of open space for foraging and numerous roost locations provided by crevices in rock outcrops and buildings. Roosts must reach or exceed ten feet in height to permit flight take-off.	None. No suitable roosting habitat occurs on site.

Species	Status	Habitat Description	Potential to Occur
BCC: USFWS Birds of Conservation Concern CS: Candidate Species for listing under the CESA FBM: Furbearing Mammal, protected from take (14 CCR § 460) FE: Federally Endangered Species under the ESA FP: CDFW Fully Protected Species FT: Federally Threatened Species under the ESA SE: State Endangered under the CESA SSC: CDFW Species of Special Concern ST: State Threatened under the CESA WL: CDFW Watch List Species			

Threatened and Endangered Wildlife Species

Burrowing Owl (Athene cunicularia)

On October 10, 2024, the California Fish and Game Commission unanimously approved the listing of burrowing owl as a candidate species for listing under CESA. The species will undergo a one-year review prior to issuance of a final decision on listing. As a candidate for potential listing, the species is temporarily awarded the same protections as a state-listed endangered or threatened species (California Fish and Game Commission 2024).

Suitable burrowing owl habitat can be found in annual and perennial grasslands, deserts, and scrublands characterized by low-growing vegetation (Zarn 1974). Suitable burrowing owl habitat may also include trees and shrubs if the canopy covers less than 30 percent of the ground surface. Burrows are the essential component of burrowing owl habitat; both natural and artificial burrows provide protection, shelter, and nests for burrowing owl (Henny and Blus 1981). Burrowing owls typically use burrows made by fossorial mammals, such as ground squirrels or badgers, but may also use human-made structures, such as concrete culverts, debris piles, or openings beneath concrete or asphalt pavement.

Burrowing owls have declined throughout much of their range because of habitat loss due to urbanization, agricultural conversion, and destruction of ground squirrel colonies (Remsen 1978). The incidental poisoning of burrowing owls and the destruction of their burrows during eradication programs aimed at rodent colonies have also caused their decline (Collins 1979; Remsen 1978). Although burrowing owls are relatively tolerant of lower levels of human activity, human-related impacts, such as shooting and introduction of non-native predators, have negative population impacts. Burrowing owls often nest and perch near roads where they are vulnerable to roadside shooting, fatal car strikes, and general harassment (Remsen 1978).

The project is within the Burrowing Owl Overlay Zone per the San Bernardino County Museum Biological Species Database and General Plan (County of San Bernardino 2012) and focused breeding season surveys were conducted in 2024 and 2025. No burrowing owl individuals or active sign were observed during the general biological survey on June 18, 2023 or during focused surveys for burrowing owl between April 8 and June 25, 2024. However, one burrowing owl was observed during the first breeding season survey in 2025 on February 24. The burrowing owl was observed utilizing a burrow that had been an active coyote den in 2024. New (i.e., fresh) burrowing owl sign was observed at the active burrow a day later on February 25, 2025. No burrowing owls were observed during the second focused survey on April 22, 2025, but old whitewash was

observed near the burrow that may have been from a burrowing owl. No burrowing owls or sign were observed during the third focused burrowing owl survey; however, whitewash was observed during the fourth burrowing owl survey on June 17, 2025. On July 24, 2025, a supplementary burrowing owl habitat assessment and reconnaissance survey was conducted within the additional off-site improvements area and buffer along White Fox Trail. Conditions were consistent with those throughout the site. Suitable habitat and unoccupied burrows were present, but no burrowing owls or sign were observed. The lack of consistent burrowing owl presence on site and the limited amount of sign observed indicates that the site was not used for breeding in 2025, but the site was likely used periodically for roosting or foraging. Burrowing owls could forage, seek refuge, and/or breed within the survey area in the future due to the presence of suitable habitat and burrows throughout the survey area.

Survey results are provided in Appendices G, H, and I. Note that 2024 surveys were conducted before candidacy status, and the report classifies the burrowing owl as a species of special concern, reflecting its status at the time.

Crotch's Bumble Bee (Bombus crotchii)

The Crotch's bumble bee is currently a candidate for listing under the CESA based on a 2018 petition submitted by the Xerces Society for Invertebrate Conservation, Defenders of Wildlife and Center for Food Safety (CDFW 2022). This species has historically ranged from central California to Baja California Del Norte though recent records indicate a reduction at longitudinal extremes, with most detections occurring in southern California (Thorp et al. 1983, NatureServe Explorer 2025, Williams et al. 2014). Largely absent from mountainous regions, Crotch's bumble bee is distributed from the coast, east to the desert edge (Thorp et al. 1983, Williams et al. 2014).

Suitable habitat for this species includes a variety of open shrub and grassland vegetation communities containing ample flowers for nectaring. Due to their short tongue, Crotch's bumble bees tend to nectar on Medicago, Lupinus, Chaenactis, Asclepias, Phacelia, and Salvia, amongst a variety of other genera (Williams et al. 2014). Though Crotch's bumble bee is tolerant of fragmented and/or semi-urban environments, habitat loss, climate change, and pesticide use are considered imminent threats to populations (Williams et al. 2014; CDFW 2022).

Crotch's bumble bee has been recorded within seven miles of the survey area near the Cajon pass (i.e., the intersection of I-15 and State Route-138) and within nine miles of the survey area near the Mojave River Forks Reservoir. Due to the presence of scrub habitat and nectar sources appropriate for Crotch's bumble bee, focused surveys were conducted between May 8 and June 11, 2024, and between April 11 and May 23, 2025. During the focused surveys, no Crotch's bumble bees were documented within the project site. However, due to the presence of suitable habitat, Crotch's bumble bee could forage or nest on site in the future. Survey results are provided in Appendix D and Appendix E.

Mohave Ground Squirrel (Xerospermophilus mohavensis)

Mohave ground squirrel is listed as threatened under CESA. This species occurs in the Mojave Desert and inhabits portions of Inyo, Kern, Los Angeles, and San Bernardino Counties (Laabs 2006). The Mojave River is generally recognized as the Mohave ground squirrel southeastern range

limit; however, the species has occasionally been observed beyond the Mojave River as far as Lucerne Valley (Laabs 2006). Mohave ground squirrel inhabits desert scrub, alkali desert scrub, and Joshua tree woodland habitats (Zeiner et al. 1990).

Mohave ground squirrel predominantly feeds on the leaves and seeds of forbs and shrubs, and less frequently consumes invertebrates. This species typically feeds on annual plant species when available, and perennial shrubs are consumed at a greater rate when annuals are not present (Laabs 2006). Mohave ground squirrel hibernates, and aestivation lasts between five and eleven months (Laabs 2006). Aestivation periods typically vary based on environmental conditions and commence from April to September and emergence from hibernation occurs from January to March (Laabs 2006).

On-site Joshua tree woodland provides moderately suitable habitat for this species; therefore, the potential for Mohave ground squirrel to occur on site is moderate. The survey area is within the Mohave Ground Squirrel Overlay Zone per the San Bernardino County Museum Biological Species Database and General Plan (County of San Bernardino 2012). Mohave ground squirrel has been observed within four miles of the survey area in a residential area near Northstar Avenue and in downtown Hesperia. Focused Mohave ground squirrel surveys were conducted between April 7 and June 31, 2024. The focused Mohave ground squirrel surveys on the project site included visual/aural surveys, live-trapping, and camera station surveys and were negative for Mohave ground squirrels. Detailed survey results are provided in Appendix F.

Wildlife Species of Special Concern and Watch List Species

Bell's Sparrow (Artemisiospiza belli belli)

Bell's sparrow is a CDFW Watch List (WL) species. Bell's sparrow was once considered a subspecies of sage sparrow, which was split into two species, Bell's sparrow and sagebrush sparrow (*Artemisiospiza nevadensis*), by the American Ornithological Society (AOS) in 2013. It is found in desert scrub, alkali desert scrub, chaparral, and coastal sage scrub across cis- and transmontane California. Bell's sparrow is frequently observed in low growing, dense shrubs, and often seeks refuge in *Adenostoma* spp., sagebrush (*Artemisia* spp.), bitterbush (*Purshia* spp.), or saltbush (*Atriplex* spp.), depending on the locality.

This species primarily feeds on insects, spiders, and seeds which they glean from the ground and shrubs. Bell's sparrow is known to nest at the base of or within shrubs, with nests placed up to one meter above the ground. During the winter, Bell's sparrows occupy lower, drier elevations, generally with more open space. Primary threats include habitat loss and vegetation clearing for livestock grazing and other anthropogenic land uses (Holmes and Johnson 2005).

One Bell's sparrow individual was observed perched on a Cooper's box thorn within the survey area on May 7, 2024 during a biological survey (Figure 2).

California Gull (Larus californicus)

The California gull is a CDFW WL species and USFWS Bird of Conservation Concern (BCC) when in a nesting colony. California gulls can be found foraging in pastures, scrublands, and garbage

dumps miles from their nesting colonies which occur primarily on islands and levees in lakes and rivers (Cornell Lab of Ornithology 2019).

California gull was observed flying over the survey area during focused burrowing owl surveys. Suitable foraging habitat is present; however, suitable habitat for nesting colonies does not occur within the survey area.

Cooper's Hawk (Accipiter cooperii)

Cooper's hawk is a CDFW WL species. Cooper's hawk breeds throughout the United States and into Canada and Mexico (Cornell University 2019). In California, Cooper's hawk nests in live oak, riparian, and other forest habitats from sea level to 9,000 feet. The Cooper's hawk is tolerant of human disturbance and habitat fragmentation and nests in suburban and urban settings (Murphy et al. 1988). Cooper's hawk hunt in open woodland and habitat edges, catching avian prey in the air, on the ground, and in vegetation. The Cooper's hawk hunts a variety of small birds and may also hunt small mammals, reptiles, and amphibians. Their nest is typically a platform of sticks and twigs lined with bark (Call 1978) and eggs are laid in February through June with the clutch size of four to five eggs (Brown and Amadon 1968).

Habitat loss, especially in riparian areas, is attributed to declining populations of Cooper's hawk in southern California. Other threats include direct or indirect human disturbance at nest sites, and eggshell thinning from pesticide use, although this threat is largely abated through the change in pesticide chemicals used after the 1970's (Terres 1980).

Though Cooper's hawk was not observed within the survey area during biological surveys, its potential to occur is low-to-moderate based on its ability to inhabit urban environments and the presence of Joshua tree and California juniper tree woodlands within the survey area.

Costa's hummingbird (Calypte costae)

Costa's hummingbird is a USFWS BCC. It is found year-round in southern California, southwestern Arizona, the Baja peninsula, and northwestern Mexico. It's breeding range extends further into the southwestern United States and northwestern Mexico and its wintering range extends south to the western coast of central Mexico. In California, Costa's hummingbird inhabits Sonoran and Mojave desert scrub, chaparral, and sage scrub. In the Mojave they are typically found in scrub and woodland habitats near springs and streams with cottonwoods, brittlebrush, and four-winged saltbush among other trees and shrubs (Baltosser and Scott 1996).

This species feeds on nectar and small flying insects. They nest about three to seven feet above ground in shrubs, often with little vegetative cover (Baltosser and Scott 1996). The greatest threats to Costa's hummingbird are conversion of desert scrub to developed land and livestock grazing.

Suitable nesting and foraging habitat for Costa's hummingbird occurs within trees and shrubs in Joshua tree woodland and California juniper woodland vegetation communities throughout the survey area. The potential for this species to occur within the survey area is high.

Lawrence's Goldfinch (Spinus lawrencei)

Lawrence's goldfinch is a USFWS BCC found in chaparral, open woodlands, riparian, disturbed lands, weedy fields, semi-urban, and agricultural land (Watt et al. 2016). The species breeds in central and southern California, west of the Sierra Nevada and south into Baja California (Cornell University 2019).

Like many goldfinches, the Lawrence's goldfinch eats almost exclusively seeds, mostly from annual plants, and may rarely supplement their diet with insects, buds, or fruits (Watt et al. 2016). This species is gregarious and travels in flocks year-round. Lawrence's goldfinch lays a clutch of three to six eggs in a loose cup of leaves and grass stems placed in a forked branch a tree or shrub (Cornell University 2019). Threats to Lawrence's goldfinch include habitat destruction and degradation, specifically overgrazing and non-native plant colonization (Cornell Lab of Ornithology 2022).

The nearby California canal provides an adequate water source for this species and suitable foraging habitat is present within the survey area throughout all vegetation communities where weedy forbs are present; therefore, the potential for this species to occur within the survey area is moderate.

LeConte's Thrasher (Toxostoma lecontei)

LeConte's thrasher is designated a CDFW SSC and a USFWS BCC, and is primarily found in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats with well-drained soils characteristic of alluvial fans. Though predominately insectivorous, LeConte's thrasher occasionally consumes seeds and small vertebrates. LeConte's thrasher hunts on the ground by prodding leaf litter or soils to flush prey. Nesting occurs in desert washes within dense cactus or spiny shrub cover approximately three feet above ground with sufficient shade (Sheppard 1996).

Habitat loss and degradation threaten LeConte's thrasher populations. Suitable habitat is often manipulated by off-road vehicle use or is converted to agriculture, grazed pasture, or developed land (Shuford et al. 2008). Wildfires which periodically destroy salt bush scrub habitats and soil seed stores further threaten LeConte's thrasher populations.

Desert scrub species often associated with Le Conte's thrasher (e.g., creosote) occur within Joshua tree woodland and California juniper woodland within the survey area, however, plant species suitable for nesting are absent. Le Conte's thrasher has a low-to-moderate potential to occur on the survey area.

Loggerhead Shrike (Lanius ludovicianus)

Loggerhead shrike is a CDFW SSC. This species is a non-migratory year-round resident in southern California. Loggerhead shrikes prefer open habitat, typically with short vegetation and scattered shrubs. This species consumes a diet mainly consisting of insects but also feeds on reptiles, birds, and small mammals. Loggerhead shrikes use a feeding technique where the bird impales prey on spines or thorns of shrubs. Thus, loggerhead shrike suitable habitat requires vegetation with spines or thorns (Yoseff 1996), or artificial objects such as barbed wire.

Leading causes of decline for this species include urban development and ingestion of pesticide-laden prey. Loggerhead shrike numbers are still fairly large across North America; however, the species has dramatically declined over the past century (Yosef 1996).

Foraging habitat suitable for loggerhead shrike occurs on site in disturbed California juniper woodland and Joshua tree woodland vegetation communities. Loggerhead shrike is known from the project vicinity and the habitat on site is highly suitable. Loggerhead shrikes were observed within the survey area during various biological surveys in 2024 and 2025 (Figure 2).

Merlin (Falco columbarius)

Merlin is a CDFW WL species and uncommon winter migrant in the low elevations of California (i.e., less than 3,900 feet). Merlin prefers coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, and herbaceous stage habitats. This species relies on a diet primarily comprised of small birds and occasionally preys on insects and small mammals. Shorelines act as particularly important hunting grounds during winter months.

Merlin experienced stark population declines from pesticide use prior to environmental legislation in 1972. Since the ban on DDT, populations have increased slowly, though sightings in southern California are still considered rare (Zeiner et al. 1990).

The survey area supports woodlands suitable for merlin foraging and is within the elevational range preferred by this species; therefore, the potential for merlin to occur within the survey area is low-to-moderate.

Sharp-Shinned Hawk (Accipiter striatus)

Sharp-shinned hawk is a CDFW WL species. This species breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats in California. Sharp-shinned hawks prefer riparian habitats but are not restricted to these areas. North facing slopes with perches are critical habitat requirements for this species (Zeiner et al. 1988-1900). Nests are generally located near water in a dense, even-aged, single-layered forest canopy (Zeiner et al. 1988-1900).

Sharp-shinned hawks are considered the least common breeding accipiter in California. Pesticide use was a large contributor to the decline of this species in the 1950s (National Audubon Society n.d.). Subsequent declines in the U.S. population of sharp-shinned hawks have been reported, although these declines appear to be due to migratory short-stopping, a phenomenon in which birds select wintering grounds closer to their breeding territories in response to overall climatic changes, rather than overall declines in the species (Bildstein et al. 2020).

Moderately suitable foraging habitat for this species occurs within the survey area as disturbed California juniper woodland and Joshua tree woodland. However, the survey area lacks pine, oak, and riparian habitats preferred for breeding and nesting, and nesting in southern California is rare and typically restricted to mountainous regions with higher elevations; therefore, the potential for sharp-shinned hawk to occur within the survey area is low-to-moderate.

Critical Habitat

The ESA defines critical habitat as a specific geographic area, or areas, that contains features essential for the survival and recovery of federally endangered and/or threatened species. USFWS designates critical habitat for endangered and threatened species and may include sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Critical habitat may also include areas that are not currently occupied by the species, but that will be needed for its recovery.

No USFWS designated critical habitat occurs within or immediately adjacent to the survey area, or within one mile of the survey area.

3.4 WILDLIFE CORRIDORS

A wildlife corridor can be defined as a physical feature that links wildlife habitat, often consisting of native vegetation that joins two or more larger areas of similar wildlife habitat (Ogden Environmental and Energy Services 1996). Corridors enable migration, colonization, and genetic diversity through interbreeding and are therefore critical for the movement of animals and the continuation of viable populations. Corridors can consist of large, linear stretches of connected habitat (such as riparian vegetation) or as a sequence of stepping-stones across the landscape (discontinuous areas of habitat such as wetlands and ornamental vegetation), or corridors can be larger habitat areas with known or likely importance to local fauna.

Regional corridors are defined as those linking two or more large patches of habitat, and local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development (Ogden Environmental and Energy Services 1996). A viable wildlife migration corridor consists of more than an unobstructed path between habitat areas. Appropriate vegetation communities must be present to provide food and cover for both transient species and resident populations of less mobile animals. There must also be a sufficient lack of stressors and threats within and adjacent to the corridor for species to use it successfully.

The survey area does not function as part of a regionally important wildlife corridor. Based on a review of the CDFW BIOS data, no wildlife movement corridors are mapped within the survey area (CDFW 2025c). The land within and around the survey area is designated as Rank 1, “Limited Connectivity Opportunity”, which is the lowest rank within the Terrestrial Connectivity, ACE dataset (CDFW 2025c). In addition, the survey area is not within an Essential Connectivity Area or other connection or landscape block as identified in the CEHC dataset (CDFW 2025c).

The survey area is composed primarily of desert woodland habitats surrounded by roads, vacant lots, and commercial development. The survey area does not facilitate regional wildlife movement due to lack of connectivity with large areas of native vegetation. The survey area may provide movement opportunities for common local wildlife species; however, the project would not result in significant fragmentation of movement corridors as the existing roadways, urbanization, and I-15 already impede movement onto the site from the east, west, and south. Local wildlife movement opportunities are afforded by the Oro Grande Wash to the northwest and undeveloped land adjacent to the wash. Cumulatively, the survey area and other undeveloped isolated lots adjacent

to the project site are unlikely to be used by wildlife species as refuge between larger areas of naturally occurring habitat due to urbanization and anthropogenic influence.

3.5 POTENTIAL FEDERAL AND STATE JURISDICTIONAL AQUATIC RESOURCES

During the project desktop review, no USGS NHD or USFWS NWI features were identified within the survey area. Based on the formal aquatic resources delineation, the aquatic resources survey area supports three aquatic features potentially jurisdictional per the RWQCB and/or CDFW, as shown on Figure 2. With the exception of a small area that will be avoided by the project, these potentially jurisdictional features are not located within the project site (Figure 2).

Non-Wetland Water (NWW-)1 and NWW-2 occur at the northwest corner of the aquatic resources survey area. NWW-1 originates at an unknown point within underground stormwater infrastructure south of the south area, and outlets at a stormwater outfall with grouted rip-rap concrete wing walls and continues for approximately 50 feet as an unvegetated ephemeral channel. NWW-2 is an unvegetated ephemeral feature that originates north of the aquatic resources survey area and flows to a confluence with NWW-1 at a topographic depression (Figure 5A – 5C of Appendix I). NWW-3 occurs along the southeastern boundary of the aquatic resources survey area and is a concrete v-ditch that collects surface flows from the side slope of the I-15 offramp (Figure 5A – 5C of Appendix I).

NWW-1 through NWW-3 are not expected to be jurisdictional by the Corps because they do not exhibit a continuous surface connection to a traditionally navigable water. NWW-1 through NWW-3 displayed clear indicators of an ordinary high-water mark (OHWM), such as a break in bank slope, change in vegetation species, and change in vegetation cover between the drainage and adjacent uplands; however, these features did not meet the hydric soil or hydrophytic vegetation wetland parameters; as such, these features may be considered non-wetland waters of the State jurisdictional by the RWQCB and unvegetated streambed jurisdictional by the CDFW.

The aquatic resources survey area also supports three erosional features, two swales, and five basins that are not expected to be jurisdictional by the Corps, RWQCB, or CDFW (Figures 5A – 5C of Appendix I). During the subsequent assessment conducted on August 8, 2025 for the additional off-site improvements area along White Fox Trail and a 100-foot buffer, four additional erosional features and one additional depressional area were identified. The erosional features occurred on or adjacent to White Fox Trail and were approximately 50-200 feet in length with no upstream or downstream connections. The ruts did not exhibit a defined bed or bank or otherwise indicate an OHWM. The low point in topography is present adjacent to the dirt road that runs through the survey area and contains dead upland shrubs. No hydrologic indicators were observed. The features observed during the August 8, 2025 assessment are not expected to be jurisdictional by the Corps, RWQCB, or CDFW.

Complete results are presented under separate cover in the *Hesperia Big Box Retail Project Aquatic Resources Delineation Report* (RBC 2025; Appendix J).

4 IMPACT ANALYSIS

Direct impacts are caused by the project and occur at the same time and place as the project. Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Direct impacts would include direct losses to native habitats, potential jurisdictional waters, wetlands, and special-status species; and diverting natural surface water flows. Direct impacts could include injury, death, and/or harassment of listed and/or special-status species. Direct impacts could also include the destruction of habitats necessary for species breeding, feeding, or sheltering. Direct impacts on plants can include crushing of adult plants, bulbs, or seeds.

Indirect impacts can result from project-related activities where biological resources are affected in a manner that is not direct. Indirect impacts may occur later in time or at a place that is farther removed in distance from the project than direct impacts, but indirect impacts are still reasonably foreseeable and attributable to project-related activities. Examples include habitat fragmentation; elevated noise, dust, and lighting levels; changes in hydrology, runoff, and sedimentation; decreased water quality; soil compaction; increased human activity; and the introduction of invasive wildlife (domestic cats and dogs) and plants (weeds). As noted in Section 2, the survey area included a 100-foot buffer to identify nearby biological resources and to aid in assessment of potential indirect impacts on protected resources, if present.

Cumulative impacts refer to incremental individual environmental effects of two or more projects when considered together. Such impacts taken individually may be minor but are collectively significant in light of regional impacts.

The significance thresholds as outlined in Appendix G of the state CEQA Guidelines (CCR Title 14, Division 6, Chapter 3, Sections 15000–15387) have been used to determine whether project implementation would result in a significant direct, indirect, and/or cumulative impact. A significant biological resources impact would occur if the project would:

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

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

CEQA Threshold 1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS?

4.1 SPECIAL-STATUS PLANTS AND WILDLIFE IMPACTS

4.1.1 SPECIAL-STATUS PLANT SPECIES

Western Joshua tree, a candidate for listing under CESA and protected by the WJTCA, would be impacted with project implementation. Of the 425 western Joshua trees documented during the census surveys, 378 western Joshua trees may be directly or indirectly impacted as a result of project activities. Trees within the project site and off-site improvements area are proposed for removal and considered to be directly impacted, while western Joshua trees within the 50-foot buffer surrounding the project may be indirectly impacted through disturbance to their root system. A total of 107 Class A trees (less than one meter in height), 250 Class B trees (one meter or greater but less than five meters in height), and 21 Class C trees (five meters or greater in height) are proposed for removal or may have roots impacted by construction activities. The proposed impacts on western Joshua trees are summarized in Table 8, below, and in Appendix C.

Table 7. Western Joshua Tree Census Results and Potential Impacts

Size Class	Total Trees within 50-ft (including dead trees)	Directly Impacted Live Trees	Directly Impacted Dead Trees	Potential Root Impacts on Live Trees	Total Impacted Trees
Class A	130	98	5	4	107
Class B	274	194	43	13	250
Class C	21	14	1	6	21
Total	**425**	**306**	**49**	**23**	**378**

Impacts on western Joshua tree are potentially significant; however, with adherence to the mitigation measures described in Section 5.1, these impacts would be reduced to less than significant. Specifically, an ITP would be obtained from CDFW prior to tree removal. Permitting may occur through the WJTCA or CESA. If a WJTCA ITP is obtained from CDFW, in-lieu fees would be paid into the Western Joshua Tree Conservation Fund, which is used to acquire, manage, and preserve western Joshua tree habitat in perpetuity (BIO-1A). If a CESA ITP is obtained, compensatory habitat mitigation would be provided through purchase of mitigation credits from an agency-approved mitigation bank or protection of western Joshua tree habitat through acquisition of fee title or conservation easement and funding for long-term management of the habitat (BIO-1A).

In addition, best management practices (BMPs) would be implemented to ensure that adjacent western Joshua trees not authorized for removal are not impacted by project activities. These measures include perimeter fencing (BIO-5I), biological monitoring (BIO-1B), and use of prescribed site access routes (BIO-1C).

The proposed project would not impact any additional federally and/or state listed or other special-status plants as no additional species are present or have a moderate to high potential to occur within the project site due to lack of suitable habitat and the overall disturbed nature of the site.

4.1.2 SPECIAL-STATUS WILDLIFE SPECIES AND CRITICAL HABITATS

Threatened and Endangered Wildlife Species

One burrowing owl, candidate species for listing under the CESA, was observed on site during a focused survey on February 24, 2025 and suitable habitat for this species is present on site. Despite negative survey results, suitable habitat for Crotch's bumble bee, also a candidate species for listing under the CESA, is present on site. Impacts on these species may occur with project implementation, as discussed further below.

Mohave ground squirrel is currently absent from the site, as evidenced by the negative results of the visual/aural surveys, live-trapping, and camera station surveys; therefore, impacts on Mohave ground squirrel are not anticipated. The proposed project would not impact any additional federally and/or state listed wildlife species as no additional listed species were observed during general biological surveys or have moderate to high potential to occur on site based on lack of suitable habitat and the disturbed nature of the site.

Burrowing Owl

Project implementation may impact burrowing owl, a candidate for listing under CESA. Burrowing owl was observed during one focused survey in 2025 and suitable burrows and habitat are present throughout the project site. Although a burrowing owl individual was only observed once and sign was only observed twice during the more than 20 biological surveys in 2024 and 2025, burrowing owl may occur on the project site in the future due to their migratory behavior, ability to disperse, and previous use of the site.

Due to the documentation of burrowing owl on the project site, the site is considered occupied by this species; therefore, a CESA ITP would be applied for and obtained prior to the commencement of project activities (BIO-2B). The ITP would include, at a minimum, a description of project activities and equipment, proposed avoidance/buffers, identification of temporary and permanent impacts, monitoring requirements, relocation and/or translocation protocols, and compensatory mitigation measures.

With project implementation, direct impacts on burrowing owl could occur in the form of death, injury, or harassment of nesting birds, their eggs, and their young, if owls are present. Such impacts, if they were to occur, are potentially significant due to the direct reduction in local populations and loss of genetic diversity. Injury or mortality occurs most frequently during the vegetation clearing stage of construction and affects eggs, nestlings, and recently fledged young

that cannot safely avoid equipment. To avoid such impacts on burrowing owls, the following measures would be implemented:

- Pre-construction burrowing owl clearance surveys would be conducted in accordance with the BUOW Guidelines (CDFW 2012) to ensure no occupied burrowing owl burrows within or adjacent to construction areas are directly impacted during ground disturbance (BIO-2A).
- If burrowing owls are detected on site or within a 500-foot buffer of the site, avoidance and minimization measures as outlined in any project-specific permits (i.e., CESA ITP) would be followed to ensure unauthorized take does not occur (BIO-2B).

Direct impacts on burrowing owl could still occur if owls enter the project site or off-site improvements area during active construction. Burrowing owls are particularly susceptible to vehicle strikes because they utilize roadways and adjacent areas for hunting. To avoid such impacts on burrowing owl, speed limits would be set and enforced (BIO-5B). In addition, burrowing owls are known to use manmade materials, such as pipes and culverts, for shelter and nesting. BMPs would be implemented to minimize the potential for burrowing owls to use staged project materials (BIO-5G); thereby reducing the likelihood of burrowing owl being impacted by construction activities.

With the successful implementation of the BMPs listed in Section 5.5, some direct impacts on burrowing owl within the project site would be avoided or minimized. However, project implementation could still result in potential impacts on burrowing owl through destruction or degradation of suitable habitat, including potential burrows. This impact is potentially significant because burrowing owl has been documented intermittently on site. While development of the project site and off-site improvements area would eliminate some suitable roosting burrows and potential food sources, this habitat is already disturbed and of relatively low-quality, as evidenced by absence of breeding activity and only short-term occupation by burrowing owl.

Compensatory mitigation would be provided for removal of burrowing owl habitat (BIO-2B). Exact mitigation shall be determined through consultation with CDFW, and is anticipated to include, but may not be limited to, the following:

- Purchase of burrowing owl suitable habitat credits at a CDFW-approved mitigation bank (minimum 1:1 ratio for high-quality habitat) or
- Off-site acquisition and preservation of land suitable to support western burrowing owl (minimum 1:1 ratio for high-quality habitat).

With implementation of BIO-2B and the adherence to any project-specific permit conditions (i.e., CESA ITP), direct impacts on burrowing owl are anticipated to be less than significant.

Indirect impacts on burrowing owl could occur if burrowing owl is present within suitable habitat west of the project site and construction occurs at night using lighting. Such impacts are potentially significant because lights could reduce burrowing owls' hunting success and make burrowing owls easier targets for predators. To avoid impacts on burrowing owl from nighttime construction and lighting, construction would occur during the day (BIO-5C). In addition, indirect impacts on burrowing owl, if present, in suitable habitat west of the project site, could during construction due

to elevated noise, vibration, and dust levels generated by equipment. These disturbances are temporary and relatively short in duration, thus unlikely to affect burrowing owl behavior. In addition, burrowing owl pre-construction surveys would include a 500-foot buffer around the project site; therefore, burrowing owls occurring near to the site would be detected, if present (BIO-2A). If burrowing owls are detected within 500-feet of the project site during the construction phase of the project, ITP conditions of approval would be followed to avoid unauthorized take of the species (BIO-2B). As such, indirect impacts during project construction are anticipated to be less than significant.

With the adherence of mitigation measures as discussed in Section 5, impacts on burrowing owls resulting from the project would be less than significant.

Crotch's Bumble Bee

Crotch's bumble bee was not documented during focused surveys or general biological surveys; however, suitable nectar sources and marginally suitable habitat is present on the project site and the potential for this species to occur is low-to-moderate. Although Crotch's bumble bee was not observed on site, the project could result in direct impacts on Crotch's bumble bee in the form of death, injury, or harassment if Crotch's bumble bee were to occur within the project site or off-site improvements area in the future. Such impacts on foraging bees are not anticipated to be significant since adult Crotch's bumble bee would likely flush during active construction activities. However, direct impacts on nesting sites could result in significant direct take of Crotch's bumble bee. The analysis conservatively assumed that significant impacts to the species could occur as a result of direct impacts to nesting sites.

Potential impacts on Crotch's bumble bee would be avoided or minimized through implementation of project mitigation measures outlined in Section 5.3. Surveys would be conducted to identify active colonies within the project site or off-site improvements area prior to initial ground disturbing activities (BIO-3A). If active nests are documented within the project site or off-site improvements area, an appropriate non-disturbance buffer area would be established immediately prior to the start of construction activities to avoid direct take (BIO-3B). If no nests are found but the species is present during pre-construction surveys, biological monitoring would be conducted during vegetation removal and ground disturbing activities during Crotch's bumble bee active periods (BIO-3C). Potential direct impacts on Crotch's bumble bee would be less than significant with implementation of pre-construction surveys, avoidance buffers, and biological monitoring.

Potential indirect impacts on this species could occur through destruction of viable nectar sources or occupied habitat. To determine if Crotch's bumble bee is present and therefore impacts could occur on occupied habitat, pre-construction surveys would be conducted prior to ground disturbing activities (BIO-3A). If present, destruction of nectar sources or removal of occupied habitat could be potentially significant because a reduction in essential resources could put strain on populations already experiencing declines (CDFW 2024c). If Crotch's bumble bees are present during pre-construction surveys, on-site revegetation with suitable nectar sources would be implemented following completion of construction activities to mitigate for such potential impacts (BIO-3D).

With adherence to the mitigation measures described in Section 5.3, potential impacts on Crotch's bumble bee would be reduced to less than significant. If Crotch's bumble bee is no longer a candidate or listed species under CESA at the time of project construction, then mitigation measures shall not be required.

Other Special-Status Wildlife Species

Bell's sparrow and loggerhead shrike were observed during 2024 and 2025 biological surveys (Appendix B). Six additional special-status wildlife species, Costa's hummingbird, Cooper's hawk, Lawrence's goldfinch, Le Conte's thrasher, merlin, and sharp-shinned hawk have a low-to-moderate, moderate, or high potential to occur on the project site. The proposed project has the potential to impact these special-status species, as discussed below. California gull was observed flying over the project site during 2025 surveys; however, suitable habitat for nesting colonies does not occur within the project site and impacts on this species are not anticipated to occur with project implementation.

Bell's Sparrow, Costa's Hummingbird, Lawrence's Goldfinch, LeConte's Thrasher, and Loggerhead Shrike

Bell's sparrow and loggerhead shrike were observed within and adjacent to the project site and Costa's hummingbird, Lawrence's goldfinch, and LeConte's thrasher have potential to occur; therefore, direct impacts through loss of suitable foraging habitat could occur with project implementation. However, the aforementioned avian species inhabit a wide variety of habitats. Suitable foraging habitat for these species is present within proximity to the project site and is abundant throughout the region. In addition, compensatory mitigation for impacts on burrowing owl and western Joshua tree would be provided, as discussed above, and conserved habitat is anticipated to be suitable for these other special-status avian species. As such, removal of suitable foraging habitat would be less than significant.

Project construction activities could result in direct impacts on nesting Bell's sparrow, Costa's hummingbird, Lawrence's goldfinch, and loggerhead shrike, if nests are present. Suitable nesting habitat for LeConte's thrasher is not present on site. Vegetation trimming or removal of suitable habitat within an active breeding territory could result in harassment, injury, damage or destruction of an active nest, and/or death of adults, eggs, and/or young during construction activities. Impacts that result in injury or death of Bell's sparrow, Costa's hummingbird, Lawrence's goldfinch, or loggerhead shrike, and/or loss of genetic diversity of these special-status species is potentially significant.

To avoid or minimize such impacts on Bell's sparrow, Costa's hummingbird, Lawrence's goldfinch, and loggerhead shrike, the following measures would be implemented:

- Vegetation trimming and removal, grading, and other construction activities within suitable nesting habitat would occur outside of typical avian breeding season (typically February 15 through August 31), if feasible (BIO-4A).
- Pre-construction surveys for nesting birds would be conducted prior to construction within suitable nesting habitat regardless of the time of year (BIO-4B).

- If nesting Bell's sparrow, Costa's hummingbird, Lawrence's goldfinch, loggerhead shrike, or any other species are documented, no-work exclusion buffers would be established and maintained around each nest until fledglings, if present, are no longer dependent on the nest and disperse from the area (BIO-4C).

With successful implementation of the mitigation measures described in Section 5.4, direct impacts on nesting Bell's sparrow, Costa's hummingbird, Lawrence's goldfinch, and loggerhead shrike during project construction would be less than significant. Additionally, a biologist would flush adult avian species from the project site and off-site improvements area prior to initial ground disturbing activities (BIO-5A). Thus, direct impacts on Bell's sparrow, Costa's hummingbird, Lawrence's goldfinch, LeConte's thrasher, and loggerhead shrike would be avoided.

Indirect impacts on Bell's sparrow, Costa's hummingbird, Lawrence's goldfinch, LeConte's thrasher, and loggerhead shrike, if present adjacent to the project site or off-site improvements area, could occur during construction due to elevated noise, vibration, and dust levels generated by equipment. These disturbances are temporary and relatively short in duration, thus unlikely to affect behavior of the aforementioned avian species. As such, indirect impacts during project construction are anticipated to be less than significant.

Cooper's Hawk, Merlin, and Sharp-Shinned Hawk

Cooper's hawk, merlin, and sharp-shinned hawk were not observed during general biological or focused species surveys; however, these species have potential to occur on site. Cooper's hawk, merlin, and sharp-shinned hawk have been recorded in the project vicinity and habitat on site is suitable for foraging. Cooper's hawk is a year-round resident, and merlin and sharp-shinned hawk are found in the region during the winter. These raptor species inhabit a wide variety of habitats, and ample suitable foraging habitat for these species is present within the greater region. In addition, compensatory mitigation for impacts on burrowing owl and western Joshua tree would be provided, as discussed above, and conserved habitat is anticipated to be suitable for these other special-status raptor species. As such, removal of suitable foraging habitat would be less than significant.

Suitable nesting habitat is not present within the project site for any of these species. Merlin and sharp-shinned hawk do not typically nest in Southern California and are generally only present in the region during the non-breeding season. Trees preferred by Cooper's hawks for nesting are not present on site. Thus, impacts on nesting Cooper's hawk, merlin, and sharp-shinned hawk resulting from the project would be less than significant.

CEQA Threshold 2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS?

4.2 NATIVE VEGETATION IMPACTS

The proposed project would result in impacts on five land covers/vegetation communities - developed land, disturbed land, disturbed California juniper woodland, disturbed rubber

rabbitbrush scrub, and Joshua tree woodland (Figure 5; Table 7). Disturbed and developed land are not considered native vegetation communities; however, impacts on 24.15 acres of isolated native upland habitat (i.e., disturbed California juniper woodland, Joshua tree woodland, and disturbed rubber rabbitbrush scrub), would occur with project implementation.

Disturbed California juniper woodland and disturbed rubber rabbitbrush scrub are not considered sensitive natural communities and impacts on these communities are not anticipated to be significant due to their abundance in the region. Joshua tree woodland is considered a sensitive natural community and impacts on the on-site Joshua tree woodland may be considered potentially significant. However, with adherence to the mitigation measures described in Section 5.1, these impacts would be reduced to less than significant. By obtaining a WJTCA or CESA ITP, the project would contribute in-lieu fees to acquire, manage, and preserve western Joshua tree habitat in perpetuity, purchase western Joshua tree mitigation credits from a conservation bank, or protect western Joshua tree habitat through land acquisition and long-term management. (BIO-1A). Required fees or compensatory mitigation would be proportional to the project's take of western Joshua trees and would therefore adequately mitigate impacts on Joshua tree woodland. Thus, impacts on native vegetation communities resulting from the project would be less than significant with the implementation of mitigation as proposed in Section 5.

Table 8. Vegetation Communities/Land Cover Project Impacts

Vegetation (Holland)[1]	Vegetation (MCV)[2]	Impacts* (acres)
Developed	Developed/Disturbed	3.13
Disturbed	Developed/Disturbed	2.19
Disturbed California Juniper Woodland	*Juniperus californica* Woodland Alliance	9.64
Disturbed Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	0.93
Joshua Tree Woodland	*Yucca brevifolia* Woodland Alliance	13.58
Total		29.47

[1] Vegetation communities recognized by Holland (1986)
[2] Vegetation communities from Holland (1986) crosswalked to The Manual of California Vegetation (Sawyer et al. 2009)
**Total impacts on project site plus off-site improvements*

CEQA Threshold 3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

4.3 POTENTIAL JURISDICTIONAL AQUATIC RESOURCES IMPACTS

Three aquatic features potentially jurisdictional per the RWQCB and CDFW were delineated during the formal aquatic resources delineation (Figure 2). A minor portion of one non-wetland

water/streambed occurs within the northern project site boundary but will be avoided by the proposed project and therefore not within the impact footprint (Figure 5). All remaining potentially jurisdictional aquatic features are not located within the project site boundary nor the off-site improvements area and would not be impacted by the proposed project. BMPs would be implemented during construction to minimize erosion, runoff, and stormwater contaminants to potentially jurisdictional aquatic resources (BIO-5J). Additionally, the project impact footprint would be demarcated with construction fencing to prevent unauthorized impacts on sensitive biological resources beyond the project site, including aquatic resources (BIO-5I). Note that if the project footprint expands and impacts are proposed in or near the mapped potentially jurisdictional aquatic resources, further coordination with the RWQCB and CDFW may be required. Permitting through the RWQCB and CDFW would be required if impacts on non-wetland waters of the state jurisdictional per the RWQCB and streambed jurisdictional per the CDFW are proposed. The project applicant would be responsible for acquiring the necessary authorizations required by the RWQCB and CDFW and associated compensatory mitigation requirements, if applicable. Based on the current impacts displayed on Figure 5, RBC does not believe such consultation and permitting is warranted for this site under the current site plan unless requested by the local jurisdiction or the regulatory agencies.

CEQA Threshold 4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

4.4 NESTING BIRD IMPACTS

The proposed project has the potential to impact active bird nests if vegetation is removed or ground disturbing activities are initiated when nests are present on site. Disturbed land, disturbed California juniper woodland, Joshua tree woodland, and disturbed rubber rabbitbrush scrub within the project site and off-site improvements area have the potential to support avian nests and impacts on nesting birds are prohibited by the MBTA and/or CFGC §3503. However, with the adherence to mitigation measures proposed in Section 5.4, impacts on nesting birds resulting from the project would be less than significant.

4.5 WILDLIFE CORRIDOR IMPACTS

CDFW categorizes the project site as Rank 1, “Limited Connectivity Opportunity”, the lowest rank in the Terrestrial Connectivity, ACE dataset (CDFW 2025c). Existing barriers, including the I-15, residential development, and other roadways, already impede movement onto the site from the east, west, and south. Thus, the project site does not serve as part of a regional wildlife corridor nor is it likely to be used by wildlife species as refuge between larger areas of naturally occurring habitat. Regionally important wildlife movement areas, such as the Oro Granda Wash, would not be impacted by the proposed project. As such, the proposed project would not result in significant impacts on wildlife movement and regional corridors.

CEQA Threshold 5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy, or ordinance?

4.6 LOCAL POLICIES AND ORDINANCES IMPACTS

4.6.1 COUNTY OF SAN BERNARDINO BURROWING OWL AND MOHAVE GROUND SQUIRREL OVERLAY ZONES

As previously discussed, the project site is within the Burrowing Owl Overlay Zone and Mohave Ground Squirrel Overlay Zone and suitable habitat occurs on site for these species. Focused surveys were conducted for both species and survey reports are included as Appendices F, G, and H. Focused surveys were negative for Mohave ground squirrel. One focused survey for burrowing owl conducted in 2025 was positive. Considering the location of the project site, the presence of suitable habitat, and the positive survey results for burrowing owl, a CESA ITP would be applied for and obtained prior to the commencement of project activities and all conditions of the ITP would be fully implemented to avoid unauthorized take. As such, the project would not conflict with the San Bernardino County Biotic Resources Overlay Zones.

4.6.2 CITY OF HESPERIA MUNICIPAL CODE

Western Joshua tree occurs throughout the project site and off-site improvements area and is protected by the Desert Native Plant Protection provision, outlined in Chapter 16.24 of the City of Hesperia Municipal Code. Removal of western Joshua tree from the project site and off-site improvements area requires a plant or tree removal permit. According to Chapter 16.24.040 of the code:

> *A land use application, a building permit and all other development permits (e.g., grading, mobile home set downs, etc.), shall consider and include a review of any proposed native tree or plant removal. Any approved land use application and/or development permit shall be a permit for the removal of native trees or plants, if such land use application or development permit specifically reviews and approves such removals.*

Therefore, acquisition of a WJTCA or CESA ITP for western Joshua tree and implementation of the mitigation measures and BMPs described in Section 5 would fulfill the requirements of this provision.

Additionally, silver cholla (*Cylindropuntia echinocarpa*) was documented on the project site and is a species covered under the DNPA. Adequate mitigation for DNPA/City-protected plants may include the payment of permit fees as required by the City and/or salvage of plants for translocation to a suitable recipient site if removal cannot be avoided. In the case of translocation, a Desert Native Plant Salvage Plan may be prepared for review and approved by the City. The plan may include a description and map showing plants to be salvaged, salvage and transport methods, the proposed recipient site, and disposition of the plant specimens at the recipient site. Recipient sites may include existing conservation areas, botanical preserves, museums and zoological societies, among other conservation organizations that provide adequate habitat and

management of desert native plants. Coordination with the City regarding permitting requirements for DNPA species will fulfill compliance with this local ordinance.

CEQA Threshold 6: Conflict with the provisions of an adopted Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state habitat conservation plan?

4.7 HABITAT CONSERVATION PLAN; NATURAL COMMUNITY CONSERVATION PLAN; OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN IMPACTS

The project site is not located with an active HCP or NCCP area; therefore, the project would not result in impacts on HCPs or NCCPs.

4.8 INDIRECT IMPACTS ON BIOLOGICAL RESOURCES

In the context of biological resources, indirect impacts are those effects associated with developing areas adjacent to native open space. Potential indirect effects associated with development include water quality impacts from site drainage into adjacent open space/downstream aquatic resources; lighting effects; noise effects; invasive plant species from landscaping; and effects from human access into adjacent open space, such as recreational activities (including off-road vehicles and hiking), pets, dumping, etc. Temporary, indirect effects may also occur as a result of construction-related activities.

The project site has been disturbed by human activities and is surrounded by roads, vacant lots of similar habitat quality and composition, and commercial development. The project site is also not considered a wildlife corridor, as detailed in Section 3.4. Project activities would not significantly change the conditions on adjacent lands or result in indirect effects on biological resources. The project would implement BMPs to avoid and minimize potential impacts on adjacent habitat (BIO-5) and pre-construction surveys would include buffers to document any potentially occurring sensitive resources adjacent to the project impact footprint (BIO-2 and BIO-4). Therefore, indirect impacts would be less than significant.

4.9 CUMULATIVE IMPACTS ON BIOLOGICAL RESOURCES

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered potentially significant. ‘Related projects’ refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed project.

The project, in combination with past, current, and probable future projects within proximity to the project, has potential to result in significant cumulatively considerable biological impacts. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probably future projects (CEQA § 21083). Cumulatively considerable

impacts for the project could include temporary and/or permanent loss or degradation of terrestrial and aquatic habitats for sensitive species, aquatic resources, and/or sensitive natural communities; introduction of non-native plants; habitat fragmentation and restrictions to wildlife movement which could result in decreased gene flow and genetic diversity within species; increased likelihood of wildlife collisions with vehicles; and increased light pollution.

However, through the environmental review process, all projects in the region would be individually required to reduce their own impacts through compensatory mitigation, as well as other project-specific mitigation measures and avoidance and minimization measures. Compensatory mitigation (BIO-1A and BIO-2B) would be subject to agency approval and would be planned with consideration to other open space preserved in perpetuity to create large, undisturbed habitat blocks. Because the impacts associated with the project would be fully mitigated, the cumulative contribution to region-wide impacts on biological resources would be less than significant.

5 MITIGATION MEASURES

The following discussion provides project-specific mitigation measures; adherence with these mitigation measures is necessary to avoid and minimize and/or mitigate for impacts on biological resources resulting from the project.

5.1 WESTERN JOSHUA TREE

BIO-1A: Prior to the issuance of grading permits, the project proponent shall obtain an ITP from CDFW. If a WJTCA ITP is obtained, the project proponent shall pay statutorily prescribed fees defined in the WJTCA to offset proposed impacts western Joshua trees as a result of the project, as well as prepare and implement a Relocation Plan, if required by CDFW. If a CESA ITP is obtained, compensatory habitat mitigation shall be provided through purchase of mitigation credits from an agency-approved mitigation bank or protection of western Joshua tree habitat through acquisition of fee title or conservation easement and funding for long-term management of the habitat.

BIO-1B: A designated biological monitor, knowledgeable in the biology of western Joshua tree, shall be responsible for monitoring project activities through the end of construction to minimize disturbance to western Joshua tree habitat off site; prevent unlawful take of the species; and ensure that project activities are confined to authorized impact areas only. The biological monitor shall have authority to immediately stop any activity that does not comply with the anticipated ITP and/or to order any reasonable measure to avoid the unauthorized take of western Joshua tree.

BIO-1C: Project-related personnel shall access the project site using existing routes and shall not cross western Joshua tree habitat outside of or in route to the project site. If construction of routes for travel is determined necessary outside of the project site, the biological monitor shall coordinate with CDFW to obtain written approval prior to initiating such activity.

5.2 BURROWING OWL

BIO-2A: No less than 14 days prior to the onset of construction activities, a qualified biologist shall conduct a survey of the project site and a 500-foot buffer to identify the presence of burrowing owls or occupied burrows. A second survey shall be conducted within 24 hours prior to the onset of construction activities. The surveys shall be conducted in accordance with the most current CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012 or as updated).

At least one burrowing owl pre-construction survey report shall be submitted to the City to document compliance with this mitigation measure. For the purposes of this measure, 'qualified biologist' is a biologist who meets the requirements set forth in the CDFW BUOW Guidelines (CDFW 2012).

BIO-2B: Suitable burrowing owl habitat and burrowing owl presence has been confirmed on the site; therefore, a CESA ITP shall be applied for and obtained prior to

the commencement of project activities. The ITP shall include, at a minimum, a description of project activities and equipment, proposed avoidance/buffers, identification of temporary and permanent impacts, monitoring requirements, relocation and/or translocation protocols, and compensatory mitigation measures. ITP compensatory mitigation shall be satisfied by preserving suitable habitat for burrowing owl at a minimum mitigation to impact ratio of 1:1 through one or more of the following mechanisms: 1) purchase of credits at a CDFW-approved conservation or mitigation bank (if available); 2) execution of a Mitigation Credit Agreement; or 3) Permittee-responsible mitigation land acquisition.

If burrowing owl is documented within the project site or the 500-foot buffer during pre-construction surveys or construction-phase biological monitoring, the biological monitor shall notify CDFW within 48 hours of the observation. All applicable conditions of the ITP shall be fully implemented to avoid unauthorized take.

5.3 CROTCH'S BUMBLE BEE

BIO-3A: At a minimum, two pre-construction nesting surveys shall be conducted prior to project implementation. Surveys shall occur within: 1) one week; and 2) within 24-hours prior to any vegetation removal or ground-disturbing activities if commencement of construction is scheduled to occur during the Crotch's bumble bee flight season (February through October). If construction begins outside of the flight season (November through January), pre-construction surveys shall not be conducted; however, if areas of suitable habitat remain unimpacted when the flight season commences, additional surveys shall be conducted within those areas prior to any vegetation removal or ground disturbance. Surveys shall follow the guidelines provided in the CDFW's *Survey Considerations for CESA Candidate Bumble Bee Species* (2024c) and shall occur within the project site and areas adjacent to the project site where suitable habitat exists. The surveyors shall be qualified biologists familiar with Crotch's bumble bee identification and life history.

BIO-3B: If an active Crotch's bumble bee nest is detected, CDFW shall be contacted and an appropriate no disturbance buffer zone (including foraging resources and flight corridors essential for supporting the colony) shall be established around the nest to reduce the risk of disturbance or accidental take. If avoidance buffers are not feasible, or if complete avoidance of Crotch's bumble bee cannot be achieved, project activities shall be postponed until appropriate authorization (i.e., a finalized CESA ITP under Fish and Game Code section 2081) is obtained.

BIO-3C: If no active nests are found but the Crotch's bumble bee is present, a qualified biological monitor shall conduct full-time monitoring during vegetation removal or ground disturbing activities that are scheduled to occur during the queen flight period (February through March), colony active period (March through September), and/or gyne flight period (September through October). The monitor shall have authority to halt or redirect activities to avoid impacts.

BIO-3D: If occupied foraging habitat for Crotch's bumble bee is present within project impact areas, a Revegetation Plan shall be prepared that includes native shrubs and native seed mixes that contain known nectar sources for Crotch's bumble bee. The Revegetation Plan shall be developed in consultation with a qualified Crotch's bumble bee biologist and implemented following project construction.

BIO-3E: If avoidance of Crotch's bumble bee is not feasible, the applicant shall obtain an ITP from CDFW under Fish and Game Code section 2081 prior to the start of project activities.

If, at the time of project construction, Crotch's bumble bee is no longer a listed or candidate under CESA, then the requirements of Mitigation Measures BIO-3A through BIO-3E shall no longer apply.

5.4 NESTING BIRDS

BIO-4A: To ensure compliance with CFGC sections 3503, 3503.5, and 3513 and to avoid potential impacts to nesting birds, vegetation clearing and ground-disturbing activities shall be conducted outside of the typical bird nesting season (February 15 through August 31), if feasible.

BIO-4B: Regardless of the time of year, a qualified biologist shall conduct a pre-construction nesting bird survey within three (3) days prior to the start of vegetation clearing, disking, demolition activities, grading, or other ground disturbance.

BIO-4C: If active nests are identified, the biologist shall establish species-appropriate buffer zones based on the level of activity within the buffer and species observed. The buffer areas shall be avoided until the nests are no longer occupied, and the juvenile birds can survive independently from the nests. During construction activities, the qualified biologist shall conduct monitoring at a frequency recommended by the qualified biologist using their best professional judgment. If nesting birds are documented and at risk of disturbance, the biologist may modify avoidance and minimization measures, and shall have authority to stop or redirect construction activities as needed using their best professional judgement to avoid take of nesting birds.

If no active nests are documented during the pre-construction survey, no further nesting bird mitigation measures shall be required.

5.5 BEST MANAGEMENT PRACTICES

BIO-5A: A qualified biologist shall flush special-status wildlife species (i.e., avian or other mobile species) from suitable habitat areas within the project development footprint to the maximum extent practicable immediately (e.g., within 24 hours) prior to initial vegetation removal activities. The biologist shall flush wildlife by walking through habitat to be imminently removed.

BIO-5B: Construction vehicles shall not exceed 15 miles per hour on unpaved roads adjacent to the project site or the right-of-way accessing the site.

BIO-5C: Construction activities shall occur during daytime hours unless otherwise approved by the lead agency and biological monitor.

BIO-5D: If trash and debris need to be stored overnight during maintenance activities, fully covered trash receptacles that are animal-proof and weather-proof shall be used by the maintenance contractor to contain all food, food scraps, food wrappers, beverage containers, and other miscellaneous trash. Alternatively, standard trash receptacles may be used during the day, but must be removed each night.

BIO-5E: The operator shall not permit pets on or adjacent to construction sites.

BIO-5F: At the end of each workday during construction, the applicant, or its contractors, shall cover all excavated, steep-sided holes or trenches more than eight inches deep and that have sidewalls steeper than 1:1 (45 degree) slope with plywood or similar materials, or provide a minimum of one escape ramp per 100 feet of trenching (with slopes no greater than 3:1) constructed of earth fill or wooden planks. The project biologist shall thoroughly inspect holes and trenches for trapped animals during biological monitoring.

BIO-5G: The applicant, or its contractors, shall screen, cover, or elevate at least one (1) foot above ground, all construction pipe, culverts, or similar structures with a diameter of three (3) inches or greater that are stored on site overnight. These pipes, culverts, and similar structures shall be inspected by the project biologist for wildlife before such material is moved, buried, or capped.

BIO-5H: The applicant, or its contractors, shall avoid the use of invasive plant species in the associated landscaping.

BIO-5I: To prevent inadvertent disturbance to areas outside the limits of work, the construction limits shall be clearly demarcated (e.g., installation of flagging or temporary visibility construction fence) prior to ground-disturbance activities, and all construction activities, including equipment staging and maintenance, shall be conducted within the marked disturbance limits. The work limit delineation shall be maintained throughout project construction.

BIO-5J: Prior to construction mobilization activities, the implementing entity shall prepare a Storm Water Pollution Prevention Plan in conformance with California Construction Stormwater General Permit Order 2022-0057-DWQ requirements to avoid and minimize impacts associated with erosion, runoff, and storm water contaminants. The Storm Water Pollution Prevent Plan shall include BMPs to avoid and minimize impacts on adjacent potentially jurisdictional aquatic resources including, but not limited to:

- Vehicles and equipment should not be operated in ponded or flowing water.

- Water containing mud, silt, or other pollutants from grading or other activities should not be allowed to enter jurisdictional waters adjacent to the project or be placed in locations that may be subjected to high storm flows.
- Spoil sites should not be located within 30 feet from the boundaries of potentially jurisdictional waters or in locations that may be subject to high storm flows, where spoils might be washed back into potentially jurisdictional aquatic resources adjacent to the project.
- Raw cement/concrete or washings thereof; asphalt, paint or other coating material; oil or other petroleum products; or any other substances that could be hazardous to vegetation or wildlife resources, resulting from project construction, should be prevented from contaminating the soil and/or entering potentially jurisdictional waters adjacent to the project.
- No equipment maintenance or fueling should be performed within 100 feet of potentially jurisdictional aquatic resources adjacent to the project, where petroleum products or other pollutants from the equipment may enter these areas.
- Temporary structures, storage of construction materials, and staging/storage of construction equipment should be located outside potentially jurisdictional aquatic resources.

5.6 DESERT NATIVE PLANTS

BIO-6: The applicant shall consult with the City regarding permitting requirements for DNPA species documented on site, namely silver cholla. The applicant shall comply with all conditions imposed by the City, which may include payment of permit fees and/or salvage of plants for translocation to a suitable recipient site. If translocation is required, a Desert Native Plant Salvage Plan shall be prepared for City review and approval. At a minimum, the plan shall identify and map plants to be salvaged, describe salvage and transport methods, and specify the proposed recipient site and final disposition salvaged specimens. Acceptable recipient sites include conservation areas, botanical preserves, museums, zoological societies, or other conservation organizations that provide suitable habitat and management of desert native plants.

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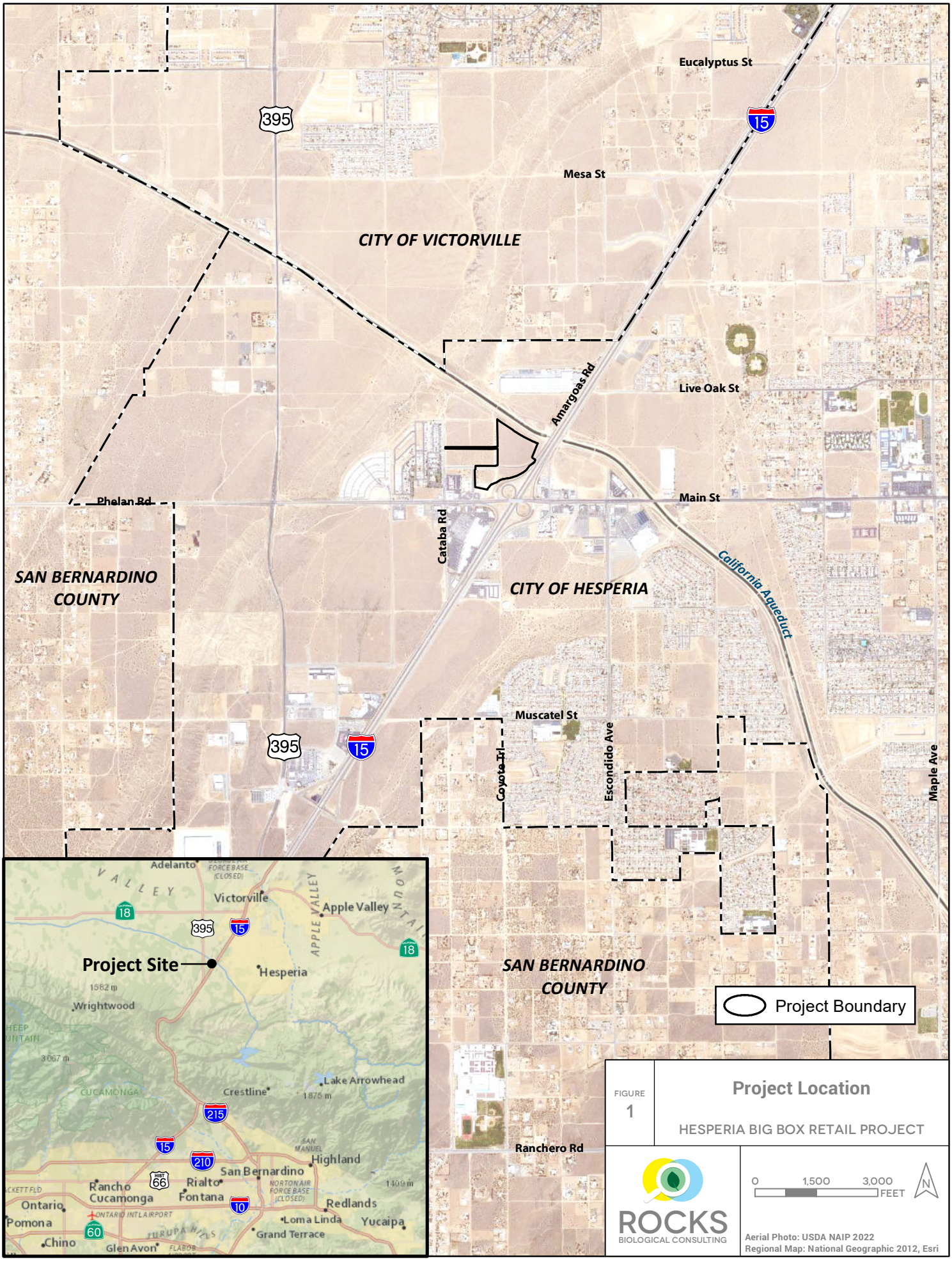


FIGURE 1

Project Location

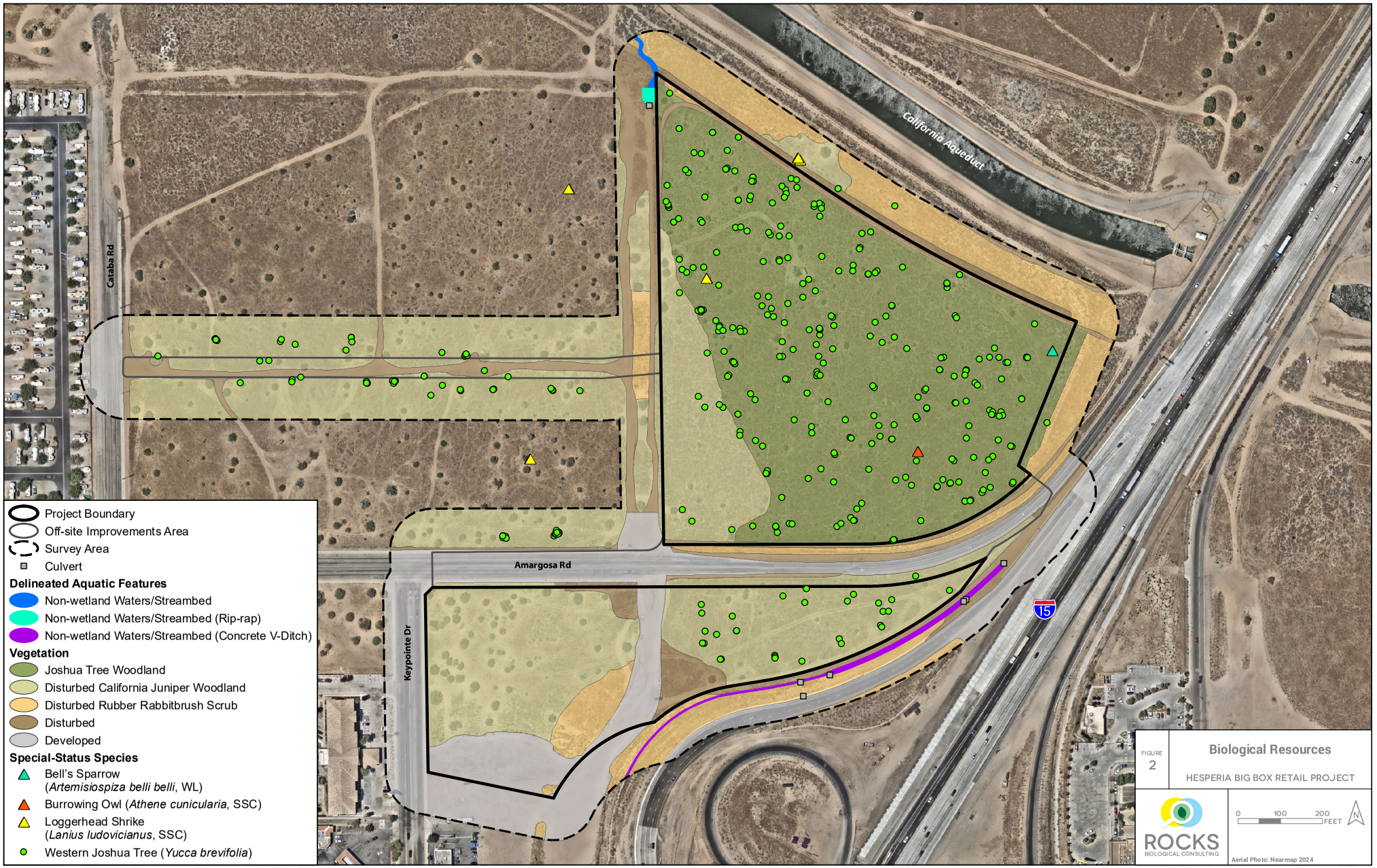
HESPERIA BIG BOX RETAIL PROJECT

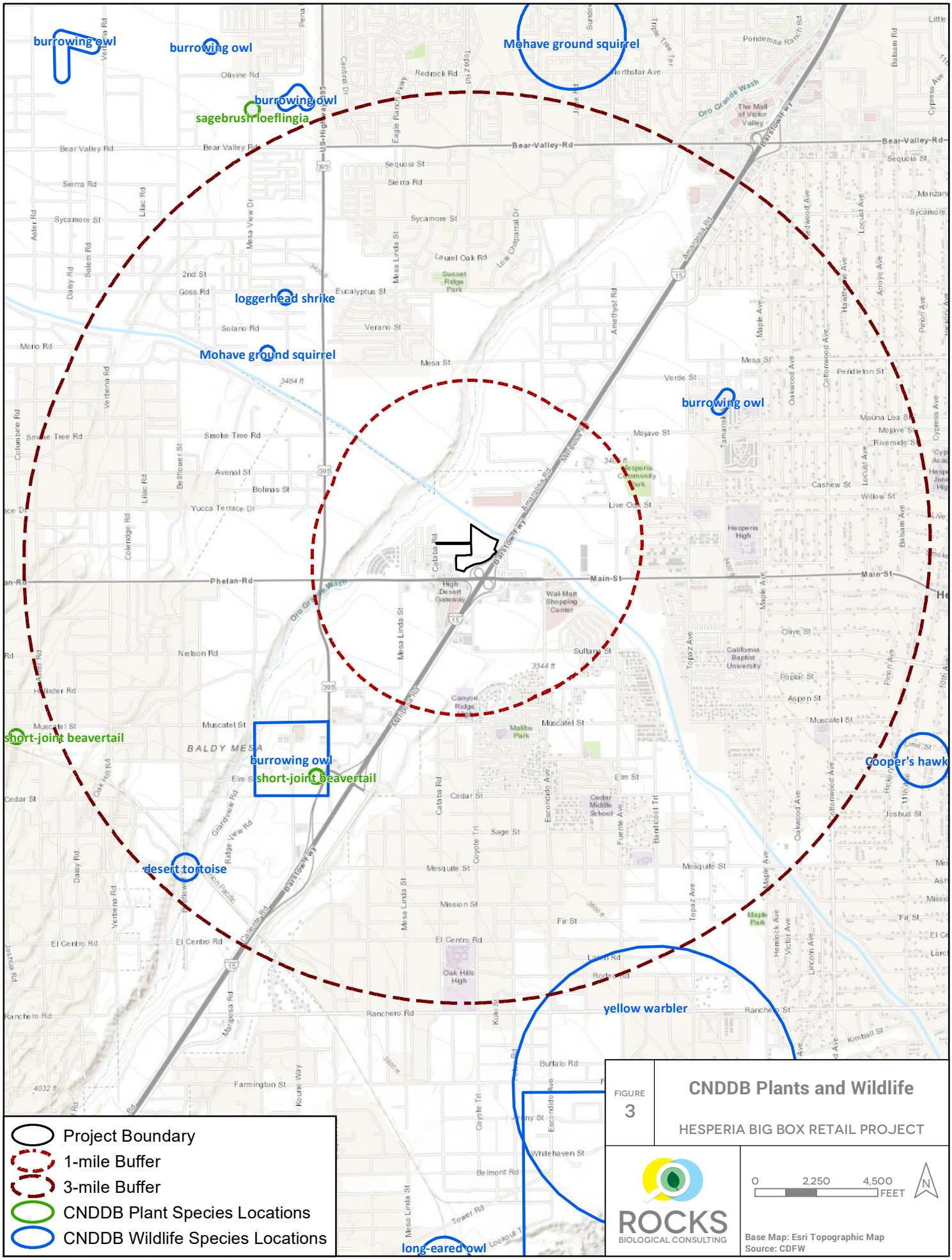
ROCKS BIOLOGICAL CONSULTING

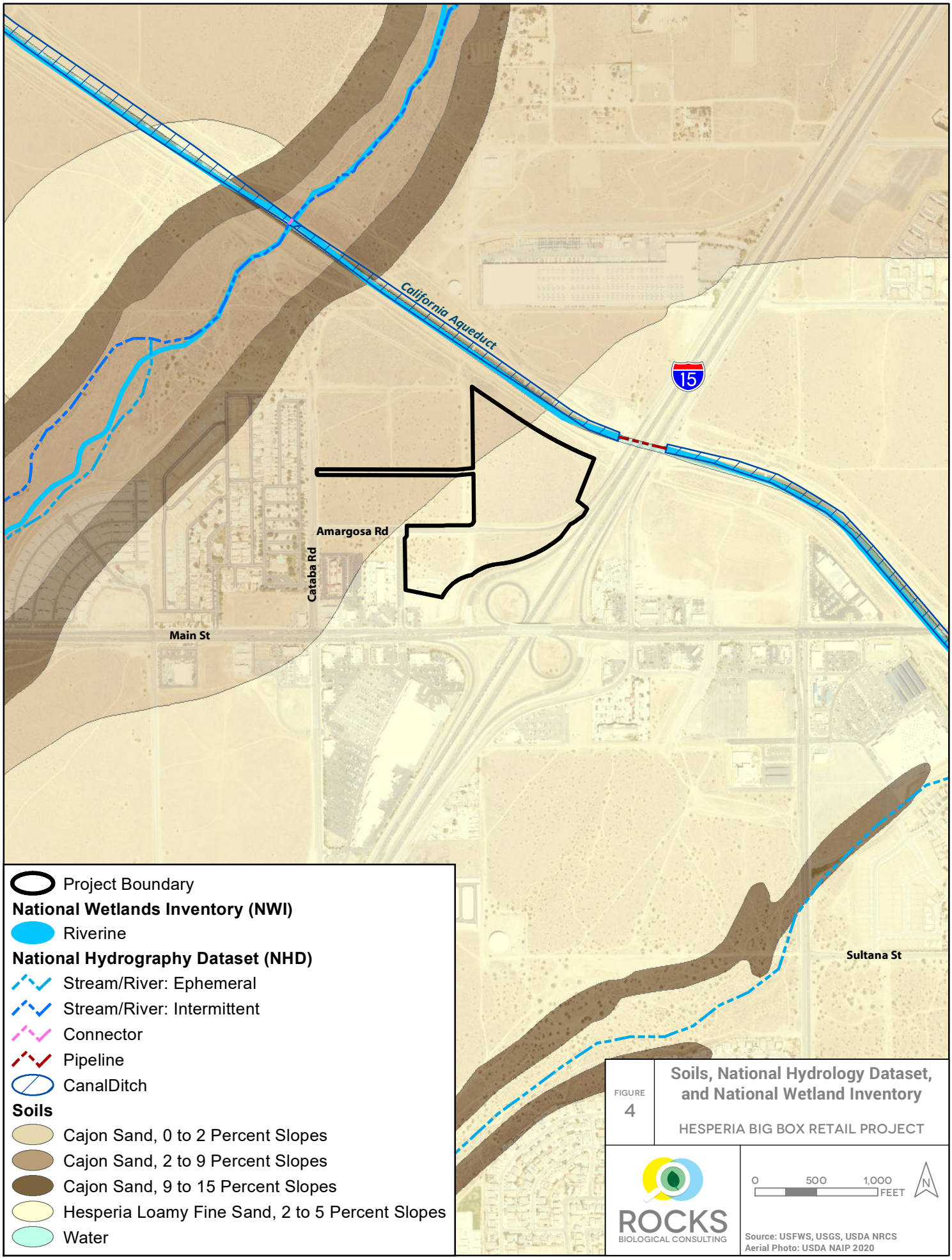
0 1,500 3,000 FEET

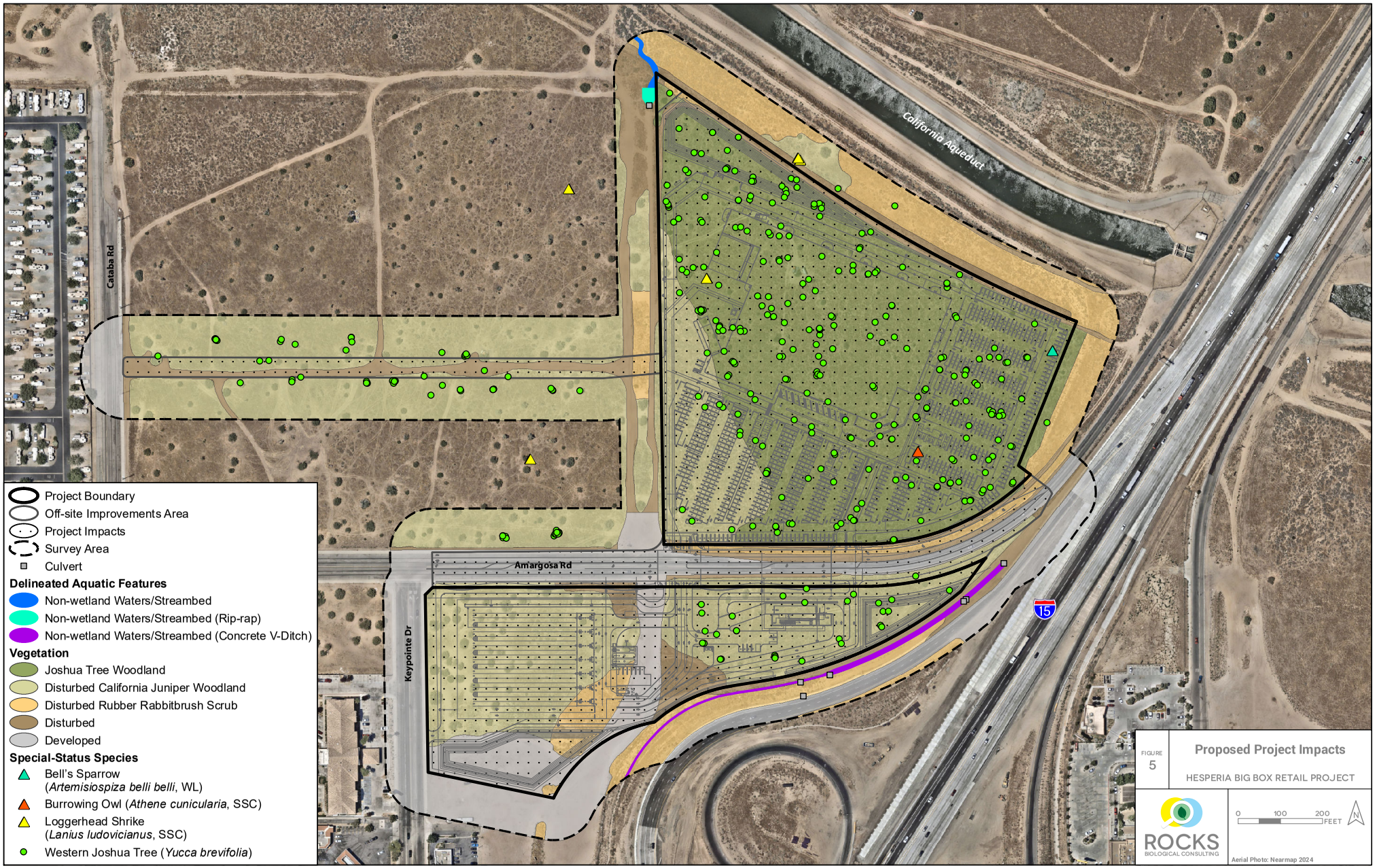
N

Aerial Photo: USDA NAIP 2022
Regional Map: National Geographic 2012, Esri


California Aqueduct
Cataba Rd
Amargosa Rd
Keypointe Dr
15
Project Boundary
Off-site Improvements Area
Survey Area
Culvert
Delineated Aquatic Features
Non-wetland Waters/Streambed
Non-wetland Waters/Streambed (Rip-rap)
Non-wetland Waters/Streambed (Concrete V-Ditch)
Vegetation
Joshua Tree Woodland
Disturbed California Juniper Woodland
Disturbed Rubber Rabbitbrush Scrub
Disturbed
Developed
Special-Status Species
Bell's Sparrow (Artemisiospiza belli belli, WL)
Burrowing Owl (Athene cunicularia, SSC)
Loggerhead Shrike (Lanius ludovicianus, SSC)
Western Joshua Tree (Yucca brevifolia)
FIGURE 2
Biological Resources
HESPERIA BIG BOX RETAIL PROJECT
ROCKS BIOLOGICAL CONSULTING
0 100 200 FEET
N
Aerial Photo: Nearmap 2024


burrowing owl
burrowing owl
Mohave ground squirrel
burrowing owl
sagebrush loeflingia
loggerhead shrike
Mohave ground squirrel
burrowing owl
short-joint beavertail
burrowing owl
short-joint beavertail
desert tortoise
yellow warbler
long-eared owl
cooper's hawk
BALDY MESA
Project Boundary
1-mile Buffer
3-mile Buffer
CNDDB Plant Species Locations
CNDDB Wildlife Species Locations
FIGURE 3
CNDDB Plants and Wildlife
HESPERIA BIG BOX RETAIL PROJECT
ROCKS BIOLOGICAL CONSULTING
0 2,250 4,500 FEET
N
Base Map: Esri Topographic Map
Source: CDFW


California Aqueduct
15
Amargosa Rd
Cataba Rd
Main St
Sultana St
Project Boundary
National Wetlands Inventory (NWI)
Riverine
National Hydrography Dataset (NHD)
Stream/River: Ephemeral
Stream/River: Intermittent
Connector
Pipeline
CanalDitch
Soils
Cajon Sand, 0 to 2 Percent Slopes
Cajon Sand, 2 to 9 Percent Slopes
Cajon Sand, 9 to 15 Percent Slopes
Hesperia Loamy Fine Sand, 2 to 5 Percent Slopes
Water
FIGURE 4
Soils, National Hydrology Dataset, and National Wetland Inventory
HESPERIA BIG BOX RETAIL PROJECT
ROCKS BIOLOGICAL CONSULTING
0 500 1,000 FEET
N
Source: USFWS, USGS, USDA NRCS
Aerial Photo: USDA NAIP 2020


California Aqueduct
Cataba Rd
Amargosa Rd
Keypointe Dr
15
Project Boundary
Off-site Improvements Area
Project Impacts
Survey Area
Culvert
Delineated Aquatic Features
Non-wetland Waters/Streambed
Non-wetland Waters/Streambed (Rip-rap)
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Burrowing Owl (Athene cunicularia, SSC)
Loggerhead Shrike (Lanius ludovicianus, SSC)
Western Joshua Tree (Yucca brevifolia)
FIGURE 5
Proposed Project Impacts
HESPERIA BIG BOX RETAIL PROJECT
ROCKS BIOLOGICAL CONSULTING
0 100 200 FEET
N
Aerial Photo: Nearmap 2024

APPENDIX A

SITE PHOTOGRAPHS

Appendix A
Site Photographs

Photo 1. Overview of eastern side of southern portion of the project site, showing disturbed California juniper woodland, facing east. June 8, 2022.

Photo 2. View of Joshua tree woodland (background) on the eastern side of the northern portion of the project site, facing southwest. June 8, 2022.

Photo 3. View of disturbed habitat (center) surrounded by disturbed rubber rabbitbrush scrub in the northeastern buffer of the northern portion of the project site, facing west. June 8, 2022.

Photo 4. View of Joshua tree woodland in the north-central area of the northern portion of the project site, facing southwest. June 8, 2022.

Photo 5. View of disturbed rubber rabbitbrush scrub in northeastern buffer, facing east. June 8, 2022.

Photo 6. View of disturbed California juniper woodland on western side of southern portion of the project site, facing west. June 8, 2022.

Photo 7. View of swale in the center of the northern portion of the project site, facing north. June 8, 2022.

Photo 8. View of off-site concrete culvert outlet and earthen drainage (yellow arrow) in the northeastern buffer of the northern portion of the project site, facing north. June 8, 2022.

Photo 9. View of concrete culvert in northwestern buffer of northern portion of the project site, facing southeast. June 8, 2022.

Photo 10. View of concrete v-ditch and concrete culvert (yellow arrow) in the southern buffer of the southern portion of the project site, facing east. June 8, 2022.

Photo 11. View of two culverts beneath I-15 ramp draining into concrete v-ditch in the southern buffer of the southern portion of the project site, facing south. June 8, 2022.

Photo 12. View of unoccupied California ground squirrel (*Otospermophilus beecheyi*) burrow, suitable for burrowing owl (*Athene cunicularia*), facing south. June 8, 2022.

Photo 13. View from the center of the project site, facing north. May 7, 2024.

Photo 14. View of the disturbed California juniper woodland in the southern portion of the project site (south of Amargosa Rd), facing northeast. May 30, 2024.

Photo 15. View of the disturbed California juniper woodland in the southern portion of the project site (south of Amargosa Rd), facing northwest. June 25, 2024.

Photo 16. View of the developed land (left) and disturbed California juniper woodland (right) in the southern portion of the project site, facing southwest. June 25, 2024.

Photo 17. View of disturbed access road and disturbed California juniper woodland in the western portion of the project site along White Fox Trail, facing east. August 8, 2025.

Photo 18. View of disturbed access road and disturbed California juniper woodland in the western portion of the project site along White Fox Trail, facing west. August 8, 2025.

APPENDIX B

PLANT AND WILDLIFE SPECIES OBSERVED

Appendix B
Plant and Wildlife Species Observed

Family	Scientific Name	Common Name
Plants		
Amaranthaceae	*Salsola* sp.	Tumbleweed*
Asparagaceae	*Yucca brevifolia brevifolia*	Western Joshua tree (CSE)
Asteraceae	*Acamptopappus sphaerocephalus*	Desert goldenhead
Asteraceae	*Ambrosia acanthacarpa*	Annual bursage
Asteraceae	*Ambrosia salsola*	Burrobrush
Asteraceae	*Chrysothamnus viscidiflorus*	Sticky-leaf rabbitbrush
Asteraceae	*Ericameria cooperi*	Cooper's goldenbush
Asteraceae	*Ericameria linearifolia*	Interior goldenbush
Asteraceae	*Ericameria nauseosa*	Rubber rabbitbrush
Asteraceae	*Ericameria teretifolia*	Green rabbitbrush
Asteraceae	*Eriophyllum confertiflorum*	Golden yarrow
Asteraceae	*Heterotheca grandiflora*	Telegraph weed
Asteraceae	*Lasthenia gracilis*	Common goldfields
Asteraceae	*Oncosiphon pilulifer*	Stinknet*
Asteraceae	*Tetradymia stenolepis*	Mojave cottonthorn
Boraginaceae	*Amsinckia* sp.	Fiddleneck
Brassicaceae	*Brassica nigra*	Black mustard*
Brassicaceae	*Brassica tournefortii*	Sahara mustard*
Brassicaceae	*Hirschfeldia incana*	Short-pod mustard*
Brassicaceae	*Sisymbrium altissimum*	Tumble/Jim Hill mustard*
Brassicaceae	*Sisymbrium irio*	London rocket*
Cactaceae	*Cylindropuntia echinocarpa*	Silver cholla
Chenopodiaceae	*Grayia spinosa*	Hop sage
Chenopodiaceae	*Krascheninnikovia lanata*	Winter fat
Convolvulaceae	*Cuscuta campestris*	Field dodder
Cupressaceae	*Juniperus californica*	California juniper
Ephedraceae	*Ephedra viridis*	Green ephedra
Euphorbiaceae	*Euphorbia albomarginata*	White-margin sandmat
Fabaceae	*Medicago sativa*	Alfalfa*

Family	Scientific Name	Common Name
Fabaceae	*Parkinsonia aculeata*	Mexican palo verde*
Geraniaceae	*Erodium cicutarium*	Red stemmed filaree*
Hydrophyllaceae	*Phacelia distans*	Common phacelia
Lamiaceae	*Scutellaria mexicana*	Bladder-sage
Nyctaginaceae	*Mirabilis laevis*	Wishbone plant
Poaceae	*Bromus diandrus*	Ripgut brome*
Poaceae	*Bromus hordeaceus*	Soft chess*
Poaceae	*Bromus rubens*	Red brome*
Poaceae	*Schismus barbatus*	Mediterranean grass*
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Polygonaceae	*Eriogonum gracillimum*	Rose-and-white buckwheat
Solanaceae	*Lycium cooperi*	Peach thorn
Invertebrates		
Acrididae	n/a	Band-winged grasshopper
Aphididae	n/a	Aphid
Apidae	*Apis mellifera*	European honey bee
Apidae	*Ceratina* sp.	Small carpenter bee
Apidae	*Melissodes* sp.	Long-horned bee
Apinae	*Diadasia* sp.	Turret bee
Asilidae	*Efferia* sp.	Robber fly
Bombyliidae	*Phthiria* sp.	Bee fly
Bombyliidae	*Poecilanthrax* sp.	Bee fly
Carabidae	*Calosoma semilaeve*	Black calosoma
Cerambycidae	n/a	Long horn beetle
Chrysomelidae	*Saxinis* sp.	Case-bearing leaf beetle
Coccinellidae	*Coccinella septempunctata*	Seven-spotted lady beetle
Coccinellidae	*Hippodamia convergens*	Convergent lady beetle
Crabronidae	*Bembix americana comata*	Western sand wasp
Curulionidae	n/a	Weevil beetle
Diadasia	n/a	Cactus bee
Formicidae	*Pogonomyrmex* sp.	Red harvester ant

Family	Scientific Name	Common Name
Halictidae	n/a	Sweat bee
Hesperiidae	*Burnsius communis*	Common checkered-skipper
Lycaenidae	*Hemiargus ceraunus*	Ceraunus blue
Lycaenidae	*Icaricia acmon*	Acmon blue
Lycaenidae	*Strymon melinus*	Gray hairstreak
Megachilidae	*Megachile* sp.	Leafcutter bee
Meloidae	*Lytta auriculata*	Red-eared blister beetle
Nymphalidae	*Junonia coenia*	Common buckeye
Nymphalidae	*Vanessa cardui*	Painted lady
Odonata	n/a	Predatory flying insect
Pentatomidae	*Brochymena* sp.	Rough stink bug
Pentatomidae	*Chlorochroa ligata*	Conchuela bug
Pentatomidae	*Chlorochroa sayi*	Say's stink bug
Pentatomidae	*Murgantia histrionica*	Harlequin cabbage bug
Pieridae	*Abaeis nicippe*	Sleepy orange
Pieridae	*Pieris rapae*	Cabbage white
Pieridae	*Pontia protodice*	Checkered white
Pompilidae	*Pepsis sp.*	Spider wasp
Reduviidae	*Zelus* sp.	Assassin bug
Salticidae	*Phidippus* sp.	Jumping spider
Sarcophagidae	n/a	Flesh fly
Sphecidae	*Ammophila sp.*	Thread-waisted wasp
Sphecidae	*Prionyx parkeri*	Prionyx wasp
Syrphidae	n/a	Hoverfly
Tachinidae	n/a	Tachinid fly
Tenebrionidae	*Eleodes* sp.	Darkling beetle
Theridiidae	*Latrodectus hesperus*	Western black widow
Tiphiidae	*Tiphia* sp.	Tiphiid wasp
Vespidae	*Polistes exclamans*	Guinea paper wasp
Reptiles		
Phrynosomatidae	*Uta stansburiana*	Side-blotched lizard

Family	Scientific Name	Common Name
Teiidae	*Aspidoscelis tigris tigris*	Great basin whiptail
Birds		
Accipitridae	*Buteo jamaicensis*	Red-tailed hawk
Alaudidae	*Eremophila alpestris*	Horned lark
Cathartidae	*Cathartes aura*	Turkey vulture
Charadriidae	*Charadrius vociferus*	Killdeer
Columbidae	*Columba livia*	Rock pigeon*
Columbidae	*Zenaida macroura*	Mourning dove
Corvidae	*Corvus corax*	Common raven
Fringillidae	*Heamorhous mexicanus*	House finch
Laniidae	*Lanius ludovicianus*	Loggerhead shrike (SSC)
Laridae	*Larus californicus*	California gull (WL)
Mimidae	*Mimus polyglottos*	Northern mockingbird
Odontophoridae	*Callipepla californica*	California quail
Passerellidae	*Artemisiospiza belli*	Bell's sparrow (WL)
Passerellidae	*Zonotrichia leucophrys*	White-crowned sparrow
Passeridae	*Passer domesticus*	House sparrow*
Strigidae	*Athene cunicularia*	Burrowing owl (CSE, SSC)
Trochilidae	*Calypte anna*	Anna's hummingbird
Troglodytidae	*Campylorhynchus brunneicapillus*	Cactus wren
Tyrannidae	*Sayornis saya*	Say's phoebe
Mammals		
Canidae	*Canis familiaris*	Domestic dog*
Leporidae	*Sylvilagus audubonii*	Desert cottontail
Sciuridae	*Ammospermophilus leucurus*	White-tailed antelope squirrel
Sciuridae	*Otospermophilus beecheyi*	California ground squirrel

* Non-Native/Introduced Species
CSE: Candidate State Endangered under California Endangered Species Act
SSC: California Department of Fish and Wildlife (CDFW) Species of Special Concern
WL: California Department of Fish and Wildlife Watch List Species

APPENDIX C

HESPERIA BIG BOX RETAIL PROJECT WESTERN JOSHUA TREE CENSUS REPORT

ROCKS
BIOLOGICAL CONSULTING

HESPERIA BIG BOX RETAIL PROJECT

WESTERN JOSHUA TREE CENSUS REPORT

San Bernardino County, California

December 2, 2024

Revised May 23, 2025 & September 22, 2025

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Appendix A. Western Joshua Tree Census Results Table
Appendix B. Western Joshua Tree Individual Photographs

1 Summary

This report is a summary of the western Joshua tree (WJT; *Yucca brevifolia*) census conducted by Rocks Biological Consulting (RBC) for the Hesperia Big Box Retail Project (project) in the City of Hesperia, San Bernardino County, California. During the general biological survey conducted in 2023, numerous WJTs were documented; therefore, focused census surveys were conducted in 2024 and 2025. A total of 425 WJTs were documented within the project site and a surrounding 50-foot buffer (census area) during the focused WJT census surveys conducted between April 2024 and August 2025.

2 Introduction

2.1 PROJECT LOCATION

The project is located in the City of Hesperia, San Bernardino County, California. The project site is located directly south of the California Aqueduct, east of Cataba Road, northwest of Interstate (I)-15, and north of Main Street (Figure 1). The project site is bisected by Amargosa Road. The site Assessor Parcel Numbers (APNs) include 040506272, 040506273, 306448105, 306448106, and 306448107.

2.2 PROJECT DESCRIPTION

The project proposes the development of an approximately 25-acre site consisting of two parcels separated by Amargosa Road. A large big box retail center would be constructed on the northern parcel and a fuel station would be constructed on the southern parcels. The proposed project would also include installation of hardscape, landscaping, and utility improvements to service both the retail center and fuel station. The off-site improvements along White Fox Road will consist of an asphalt emergency access road connecting Cataba Road to Amargosa Road.

3 Western Joshua Tree

3.1 REGULATORY FRAMEWORK

The WJT is currently a candidate for listing under the California Endangered Species Act (CESA) based on a 2019 petition submitted by the Center for Biological Diversity (CBD). In addition, WJT is protected under the Western Joshua Tree Conservation Act (WJTCA), which went into effect July 2023 to streamline development in WJT habitat while standardizing conservation efforts to further preserve the species. The WJTCA facilitates take permits in exchange for in-lieu mitigation fee

payment. Fee magnitude is dependent on multiple variables, including, but not limited to, tree height, condition, and location. Mitigation fees are placed into the WJT Conservation Fund, used to acquire, manage, and preserve WJT habitat in perpetuity. The WJT receives protection as a candidate species under CESA, in addition to state protections outlined in the WJTCA, pending a listing petition decision by the California Fish and Game Commission.

3.2 NATURAL HISTORY

The WJT is endemic to the Mojave Desert in southern Nevada, southwestern Utah, western Arizona, southeastern California, and northern Baja California (U.S. Department of Agriculture [USDA] n.d.). Within California, WJT is associated with juniper (*Juniperus californica*), singleleaf pinyon (*Pinus monophylla*), shrub live oak (*Quercus turbinella*), blackbrush (*Coleogyne ramosissima*), green ephedra (*Ephedra viridis*), eastern Mojave buckwheat (*Eriogonum fasciculatum*), white burrobrush (*Hymenoclea salsola*), bladdersage (*Salazaria mexicana*), and Mojave desertrue (*Thamnosma montana*) amongst additional species (USDA n.d.). Numerous vegetation communities can support WJT including but not limited to, Joshua tree woodland, California juniper tree woodland, Mojave desert scrub, and Mojave mixed steppe habitats (USDA n.d.). The yucca moth (*Tegeticula synthetica*) is responsible for pollination, and seeds are dispersed by mammals and wind. On average, WJT's temperature threshold ranges from -13 °F (-25 °C) to 120 °F (51 °C) and annual precipitation requirements range from 3.9 to 10.6 inches (98-268 mm; USDA n.d.).

Threats to WJT include climate change, fire, and habitat loss or degradation due to human activities (CBD 2019). Seed dispersal is greatly inhibited by climate change-induced droughts which stall recruitment and kill adult trees. In addition, development of private lands containing large stands of WJT poses a threat to this species (CBD 2019).

4 Methods

On April 25, 2024, RBC biologists Hannah Swarthout and Kelsey Woldt conducted a census of WJT within the project site and surrounding 50-foot buffer pursuant to the *Western Joshua Tree Conservation Permitting Census Instructions* (California Department of Fish and Wildlife [CDFW] 2024a). A follow up census was conducted on May 13, 2025 within a small portion of the 50-foot buffer along Amargosa Road to the west of the project site. RBC biologists Alec Goodman and Sarah Gulyas conducted an additional census for an extended portion of the survey area along White Fox Trail on August 8, 2025. On August 19, 2025, RBC biologists Ian Hirschler and Alec Goodman verified and updated WJT data for the entire census area, with the exception of the recently surveyed White Fox Trail portion.

Associate Biologist Hannah Swarthout has over four years of professional experience in southern California field biology, including the Mojave and Sonoran deserts, and is familiar with desert fauna and flora survey methods, including desert tortoise (*Gopherus agassizii*), Mojave fringe-toed lizard (*Uma scoparia*), Mohave ground squirrel (*Xerospermophilus mohavensis*), and WJT. Ms. Swarthout has conducted eight focused surveys for WJT. Biologist Kelsey Woldt has five years of professional experience in southern California field biology, including the Mojave and Sonoran deserts, and is familiar with desert fauna and flora survey methods including Barstow woolly-sunflower (*Eriophyllum mahavense*), beaver dam breadroot (*Pediomelum castoreum*), crucifixion thorn (*Castela emoryi*), desert tortoise, Mojave fringe-toed lizard, Mojave monkey flower (*Diplacus mohavensis*), Parish's phacelia (*Phacelia parishii*), and WJT. Biologist Alec Goodman has over eight years of professional experience in southern California field biology, including the Mojave and Sonoran deserts, and is familiar with desert fauna and flora methods, including rare plant surveys, vegetation mapping, and WJT. Associate Biologist Sarah Gulyas has over four years of professional experience in southern California field biology, including the Mojave and Sonoran deserts, and is familiar with desert fauna and flora survey methods, including burrowing owl (*Athene cunicularia*) and WJT.

During the census surveys, a unique tree identification number was assigned to each WJT and mapped using a sub-meter Geographic Positioning System (GPS) device. Trees were classified into the following size classes: A – less than one meter in height; B – one meter or greater but less than five meters in height; and C – five meters or greater in height. Additional, information collected included status (live/dead), maturity (branched/not branched), phenological stage (flowers/fruits/none), and proposed impacts (removal, trim, relocation, other, or none). Detailed information for each tree is provided in Attachment A and photos for each WJT are provided in Attachment B.

5 Results

A total of 425 WJTs (including dead individuals) were documented within the census area (Figure 1), including 130 Class A, 274 Class B, and 21 Class C WJTs.

Of the 425 WJTs documented in the census area, 306 live WJTs may be directly impacted, 49 dead trees may be directly impacted, and 47 live trees may be indirectly impacted. Trees within the project impacts boundary are proposed for removal and considered to be directly impacted, while WJTs within the surrounding 50-foot buffer may be indirectly impacted through disturbance to their root system, depending on the size of the tree. Class A trees within 10 feet, Class B trees within 25 feet, and Class C trees within 50 feet of project impacts are considered to have potential root impacts. A total of 107 Class A, 250 Class B, and 21 Class C are proposed for removal or may

have roots impacted by construction activities. Two dead WJTs are located within the project buffer and will not be impacted, and 45 live WJTs are located far enough from the project site to not be indirectly impacted (23 Class A WJTs over 10' from project impacts and 22 Class B WJTs over 25' from project impacts). The proposed impacts on WJTs are summarized in Table 1, below.

Table 1. Western Joshua Tree Census Results and Potential Impacts

Size Class	Total Trees within 50-ft	Directly Impacted Live Trees	Directly Impacted Dead Trees	Potential Root Impacts on Trees	Total Impacted Trees
Class A	130	98	5	4	107
Class B	274	194	43	13	250
Class C	21	14	1	6	21
Total	**425**	**306**	**49**	**23**	**378**

6 Permitting and Mitigation

A total of 378 WJTs would be impacted by the project; therefore, issuance of an incidental take permit (ITP) from CDFW would be required prior to grading permit approval. The project would pursue an ITP through the WJTCA; hence, the Applicant would be required to pay statutorily prescribed fees to offset proposed impacts on WJTs. The proposed project falls within the CDFW Standard Mitigation Fee Area (CDFW 2024b). Effective January 1, 2025, mitigation fees within the standard area for each size class per individual are as follows: Class A – $346.00; Class B – $509.00; and Class C – $2,544.75. A summary of the proposed impacts and associated mitigation fees are provided in Table 2, below.

Table 2. Proposed Impacts and Mitigation Fees

Size Class	Total Impacted Trees	Fees (Standard Area)
Class A	107	$37,022.00
Class B	250	$127,250.00
Class C	21	$53,439.75
Total	**378**	**$217,711.75**

In addition, CDFW may require avoidance and minimization measures as conditions of the ITP. Measures may include, but are not limited to, the following:

1. The entire project site including any off-site improvements, shall be demarcated with construction fencing to prevent unauthorized impacts on sensitive biological resources beyond the project site, including WJT. The fencing shall remain intact until the end of project completion.

2. A designated biological monitor, knowledgeable in the biology of WJT, shall be responsible for monitoring project activities through the end of construction to help minimize disturbance to WJT habitat off site; prevent unlawful take of the species; and ensure that project activities are confined to authorized impact areas only. The biological monitor shall have authority to immediately stop any activity that does not comply with the anticipated ITP and/or to order any reasonable measure to avoid the unauthorized take of WJT.

3. Project-related personnel shall access the project site using existing routes and shall not cross WJT habitat outside of or in route to the project site. If construction of routes for travel is determined necessary outside of the project site, the biological monitor shall contact CDFW for written approval before carrying out such an activity.

In addition to avoidance and minimization measures and mitigation fees, CDFW may require WJT relocation in accordance with the *Western Joshua Tree Relocation Guidelines and Protocols* (CDFW 2024c). If relocation is required, a Relocation Plan must be prepared and approved by CDFW prior to issuance of a WJTCA ITP. The number of trees relocated would be dependent on the number of live individuals lethally taken and the relocation method used, as summarized in Table 3, below.

Table 3. Potential Relocation Requirements

Size Class	Total Live Trees Lethally Impacted	Tree Spade Method[1]	Bare Root Method[2]
Class A	98	9	18
Class B	194	12	23
Class C	14	1	1

[1] Method for relocating a living WJT by using a tree spade to dig, transport, and replant a WJT and its' root ball. The expected success rate of tree spade relocation is greater than 90 percent.

[2] Method for relocating a living WJT by excavating around the root ball of the tree to dislodge the tree from the ground. The expected success rate of bare root relocation is between 50 and 90 percent.

Note that percent of trees to be relocated is based on informal consultation with Julia Karo, CDFW Region 6, on May 23, 2025.

If relocation is deemed necessary by CDFW, relocation would be overseen by a qualified desert native plant specialist, and a three-year maintenance and monitoring period with associated reporting would also be required. For more detailed information regarding relocation guidelines, please refer to the *Western Joshua Tree Relocation Guidelines and Protocols* (CDFW 2024c).

7 Conclusion

The project would directly and indirectly impact WJT with implementation. As a candidate for listing under CESA, take of WJT is prohibited without authorization from CDFW. The project would pursue an ITP through the WJTCA for 378 WJTs. The project would pay the statutorily prescribed in-lieu fees and abide by all required conditions of the permit.

Please note that any updates to the project site boundary including any off-site improvements or staging areas would require a follow-up census survey, and mitigation fees and requirements may be revised.

8 References

[CDFW] California Department of Fish and Wildlife. (2024a). Western Joshua Tree Conservation Permitting Census Instructions. Retrieved September 2025, from https://wildlife.ca.gov/Conservation/Environmental-Review/WJT/Permitting/Census-Instructions.

__. (2024b) Western Joshua Tree Conservation Act Mitigation Fee Map. Retrieved September 2025, from https://experience.arcgis.com/experience/40690ac231124bccb07cbce42fc95ebd/

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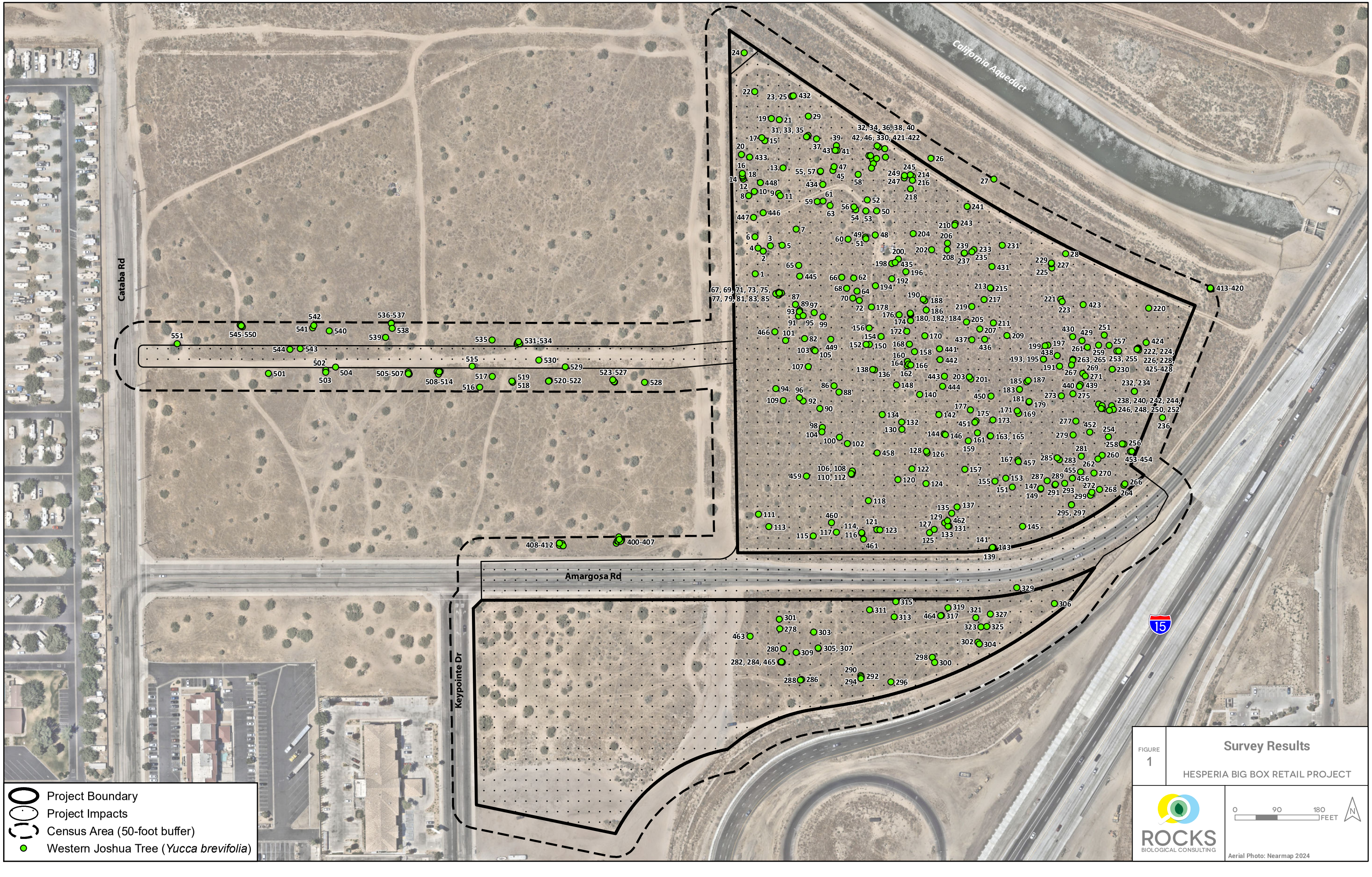
[CBD] Center for Biological Diversity. 2019. A Petition to List the Western Joshua Tree (*Yucca brevifolia*) as Threatened under the California Endangered Species Act (CESA). Retrieved September 2025, from https://www.biologicaldiversity.org/species/plants/pdfs/CESA-petition-Western-Joshua-Tree-10-15-19.pdf

[USDA] U.S. Department of Agriculture. No date (n.d.). Fire Effects Information System (FEIS): *Yucca brevifolia*. Retrieved September 2025, from https://www.fs.usda.gov/database/feis/plants/tree/yucbre/all.html#DistributionAndOccurrence.


California Aqueduct
Cataba Rd
Amargosa Rd
Keypointe Dr
15
Project Boundary
Project Impacts
Census Area (50-foot buffer)
Western Joshua Tree (Yucca brevifolia)
FIGURE 1
Survey Results
HESPERIA BIG BOX RETAIL PROJECT
ROCKS BIOLOGICAL CONSULTING
0 90 180 FEET
N
Aerial Photo: Nearmap 2024

Project Boundary
Project Impacts
Census Area (50-foot buffer)
Western Joshua Tree (*Yucca brevifolia*)

Cataba Rd

551
545-550
541
542
540
537
536
538
539
544
543
535
532
534
533
531
530
529
515
502
504
503
501
506
507
505
508-514
517
519
518
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520-522
408
410
412
409
411

Amargosa Rd

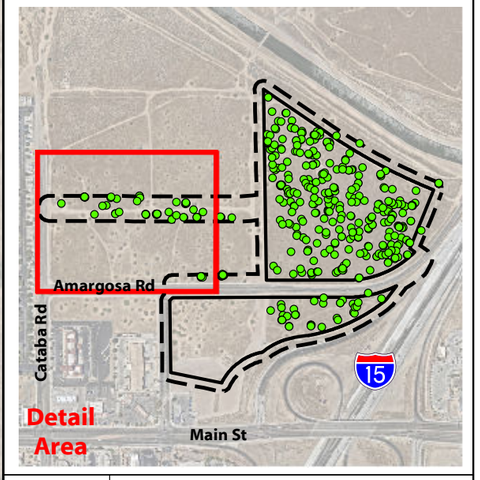

FIGURE 1A

Survey Results

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 40 80 FEET
1 INCH = 80 FEET

N

Aerial Photo: USDA NAIP 2022

Project Boundary
Project Impacts
Census Area (50-foot buffer)
Western Joshua Tree (*Yucca brevifolia*)

California Aqueduct

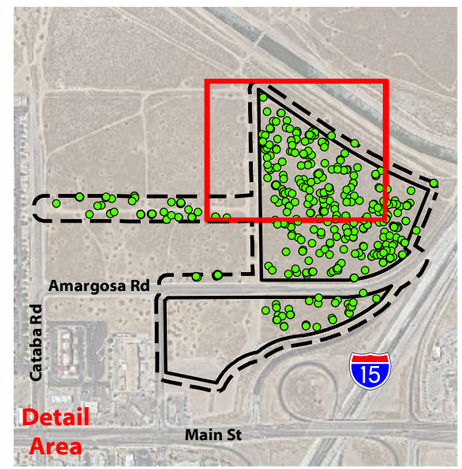

FIGURE 1B

Survey Results

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 40 80 FEET
1 INCH = 80 FEET

Aerial Photo: USDA NAIP 2022

Project Boundary
Project Impacts
Census Area (50-foot buffer)
Western Joshua Tree (*Yucca brevifolia*)

Amargosa Rd

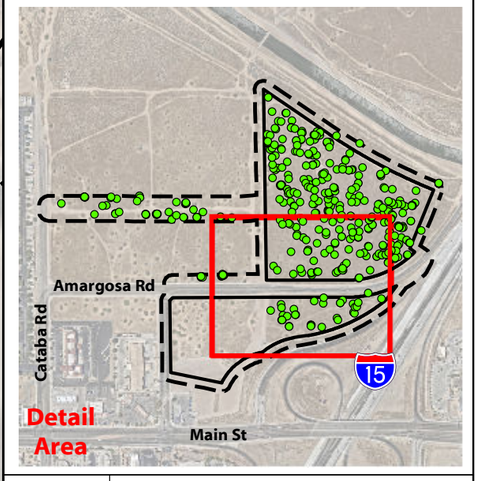

FIGURE 1C

Survey Results

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 40 80 FEET
1 INCH = 80 FEET

Aerial Photo: USDA NAIP 2022

Project Boundary
Project Impacts
Census Area (50-foot buffer)
Western Joshua Tree (*Yucca brevifolia*)

Amargosa Rd

15

28
413-420
423
220
430
251
429
424
261
259
257
224
226
425-428
255
222
228
253
263
265
230
267
269
271
439
232
275
440
234
248
250
238
246
244
252
240
242
236
277
452
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258
256
454
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272
299
295
297

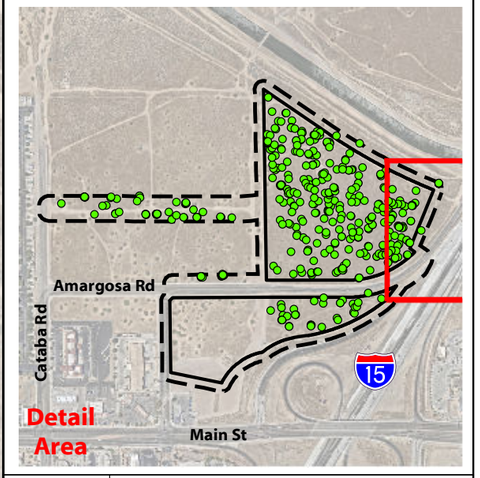

FIGURE 1D

Survey Results

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 40 80 FEET
1 INCH = 80 FEET

N

Aerial Photo: USDA NAIP 2022

APPENDIX A

WESTERN JOSHUA TREE CENSUS RESULTS TABLE

Tree ID	Latitude	Longitude	Surveyor	Size Class	Mature Tree	Live or Dead	Impact to Tree	Impact Location
1	34.430802	-117.381638	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
2	34.430936	-117.381582	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
3	34.430966	-117.381530	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
4	34.430953	-117.381617	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
5	34.430968	-117.381447	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
6	34.431019	-117.381639	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
7	34.431063	-117.381346	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
8	34.431262	-117.381682	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
9	34.431273	-117.381469	Kelsey Woldt	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
10	34.431286	-117.381642	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
11	34.431260	-117.381458	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
12	34.431359	-117.381719	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
13	34.431424	-117.381436	Kelsey Woldt	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
14	34.431370	-117.381724	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
15	34.431584	-117.381565	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
16	34.431908	-117.381389	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
17	34.431602	-117.381585	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
18	34.431379	-117.381725	Hannah Swarthout	Class A (<1 m)	No	Dead	Removal	Tree within project impacts
19	34.431714	-117.381518	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
20	34.431503	-117.381732	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
21	34.431707	-117.381461	Kelsey Woldt	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
22	34.431872	-117.381634	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
23	34.431843	-117.381372	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
24	34.432101	-117.381706	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
25	34.431845	-117.381371	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
26	34.431474	-117.380388	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
27	34.431359	-117.379943	Kelsey Woldt	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
28	34.430908	-117.379437	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
29	34.431727	-117.381255	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
31	34.431613	-117.381258	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
32	34.431542	-117.380757	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
33	34.431605	-117.381267	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
34	34.431532	-117.380714	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
35	34.431605	-117.381269	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
36	34.431483	-117.380710	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
37	34.431592	-117.381197	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
38	34.431469	-117.380801	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
39	34.431553	-117.381057	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
40	34.431492	-117.380828	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
41	34.431525	-117.381052	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
42	34.431444	-117.380796	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
43	34.431524	-117.381066	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
45	34.431406	-117.381083	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts

46	34.431419	-117.380810	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
47	34.431429	-117.381075	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
48	34.431026	-117.380786	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
49	34.431014	-117.380855	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
50	34.431167	-117.380775	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
51	34.431005	-117.380852	Kelsey Woldt	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
52	34.431232	-117.380840	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
53	34.431167	-117.380852	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
54	34.431174	-117.380923	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
55	34.431401	-117.381172	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
56	34.431192	-117.380936	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
57	34.431403	-117.381171	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
58	34.431383	-117.380904	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
59	34.431224	-117.381195	Kelsey Woldt	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
60	34.431002	-117.380979	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
61	34.431227	-117.381154	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
62	34.430774	-117.380940	Hannah Swarthout	Class A (<1 m)	Yes	Live	Removal	Tree within project impacts
63	34.431201	-117.381104	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
64	34.430696	-117.380917	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
65	34.430850	-117.381330	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
66	34.430778	-117.381025	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
67	34.430686	-117.381460	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
68	34.430714	-117.380991	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
69	34.430682	-117.381471	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
70	34.430656	-117.380948	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
71	34.430689	-117.381454	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
72	34.430642	-117.380901	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
73	34.430676	-117.381472	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
75	34.430677	-117.381476	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
77	34.430685	-117.381493	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
79	34.430693	-117.381473	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
81	34.430687	-117.381466	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
82	34.430419	-117.381292	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
83	34.430689	-117.381468	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
85	34.430689	-117.381469	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
86	34.430142	-117.381085	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
87	34.430620	-117.381354	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
88	34.430104	-117.381051	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
89	34.430585	-117.381326	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
90	34.430009	-117.381186	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
91	34.430552	-117.381333	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
92	34.430054	-117.381303	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
93	34.430578	-117.381327	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
94	34.430127	-117.381497	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts

95	34.430554	-117.381300	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
96	34.430073	-117.381331	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
97	34.430573	-117.381222	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
98	34.429897	-117.381169	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
99	34.430548	-117.381161	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
100	34.429838	-117.381048	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
101	34.430409	-117.381425	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
102	34.429801	-117.380993	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
103	34.430353	-117.381225	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
104	34.429871	-117.381172	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
105	34.430348	-117.381217	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
106	34.429632	-117.380957	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
107	34.430255	-117.381266	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
108	34.429640	-117.380959	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
109	34.430057	-117.381445	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
110	34.429620	-117.380962	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
111	34.429390	-117.381626	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
112	34.429624	-117.380967	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
113	34.429316	-117.381552	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
114	34.429273	-117.380893	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
115	34.429259	-117.381239	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
116	34.429278	-117.380895	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
117	34.429280	-117.381075	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
118	34.429465	-117.380845	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
120	34.429588	-117.380635	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
121	34.429295	-117.380787	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
122	34.429650	-117.380535	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
123	34.429293	-117.380765	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
124	34.429564	-117.380438	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
125	34.429275	-117.380414	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
126	34.429743	-117.380427	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
127	34.429295	-117.380382	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
128	34.429753	-117.380432	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
129	34.429332	-117.380305	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
130	34.429884	-117.380606	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
131	34.429313	-117.380275	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
132	34.429926	-117.380607	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
133	34.429313	-117.380283	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
134	34.429970	-117.380744	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
135	34.429387	-117.380256	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
136	34.430234	-117.380798	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
137	34.429425	-117.380217	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
138	34.430236	-117.380809	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
139	34.429186	-117.379963	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts

140	34.430087	-117.380478	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
141	34.429180	-117.379975	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
142	34.429969	-117.380343	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
143	34.429186	-117.379968	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
144	34.429854	-117.380306	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
145	34.429309	-117.379754	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
146	34.429850	-117.380297	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
147	34.429526	-117.379624	Kelsey Woldt	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
148	34.430144	-117.380642	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
149	34.429531	-117.379624	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
150	34.430384	-117.380832	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
151	34.429540	-117.379826	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
152	34.430383	-117.380855	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
153	34.429592	-117.379871	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
154	34.430429	-117.380749	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
155	34.429575	-117.379948	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
156	34.430479	-117.380833	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
157	34.429646	-117.380161	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
158	34.430338	-117.380512	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
159	34.429814	-117.380135	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
160	34.430282	-117.380562	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
161	34.429860	-117.380070	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
162	34.430256	-117.380564	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
163	34.429840	-117.379980	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
164	34.430267	-117.380555	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
165	34.429841	-117.379977	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
166	34.430260	-117.380540	Hannah Swarthout	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
167	34.429699	-117.379785	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
168	34.430383	-117.380549	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
169	34.429973	-117.379778	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
170	34.430432	-117.380439	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
171	34.429988	-117.379787	Kelsey Woldt	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
172	34.430459	-117.380567	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
173	34.429935	-117.379959	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
174	34.430521	-117.380540	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
175	34.429931	-117.380080	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
176	34.430557	-117.380621	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
177	34.429995	-117.380118	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
178	34.430603	-117.380816	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
179	34.430038	-117.379703	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
180	34.430556	-117.380537	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
181	34.430043	-117.379703	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
182	34.430560	-117.380542	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
183	34.430114	-117.379770	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts

184	34.430565	-117.380540	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
185	34.430158	-117.379719	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
186	34.430583	-117.380428	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
187	34.430166	-117.379708	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
188	34.430638	-117.380437	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
190	34.430646	-117.380448	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
191	34.430248	-117.379485	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
192	34.430768	-117.380670	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
193	34.430290	-117.379598	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
194	34.430728	-117.380787	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
195	34.430291	-117.379599	Kelsey Woldt	Class A (<1 m)	No	Dead	Removal	Tree within project impacts
196	34.430809	-117.380571	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
197	34.430373	-117.379567	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
198	34.430858	-117.380670	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
199	34.430368	-117.379587	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
200	34.430884	-117.380623	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
201	34.430176	-117.380114	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
202	34.430938	-117.380386	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
203	34.430189	-117.380125	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
204	34.431033	-117.380518	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
205	34.430512	-117.380144	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
206	34.430975	-117.380274	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
207	34.430470	-117.380048	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
208	34.430937	-117.380276	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
209	34.430430	-117.379856	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
210	34.431080	-117.380223	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
211	34.430506	-117.379952	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
213	34.430708	-117.379969	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
214	34.431369	-117.380520	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
215	34.430711	-117.379973	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
216	34.431347	-117.380520	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
217	34.430642	-117.380018	Kelsey Woldt	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
218	34.431295	-117.380534	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
219	34.430603	-117.380104	Kelsey Woldt	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
220	34.430586	-117.378851	Hannah Swarthout	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
221	34.430642	-117.379474	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
222	34.430348	-117.378934	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
223	34.430628	-117.379464	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
224	34.430346	-117.378926	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
225	34.430826	-117.379536	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
226	34.430353	-117.378927	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
227	34.430850	-117.379538	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
228	34.430345	-117.378932	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
229	34.430854	-117.379538	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts

230	34.430228	-117.379112	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
231	34.430960	-117.379886	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
232	34.430099	-117.378955	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
233	34.430936	-117.380086	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
234	34.430097	-117.378956	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
235	34.430924	-117.380102	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
236	34.429942	-117.378757	Hannah Swarthout	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
237	34.430915	-117.380156	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
238	34.430014	-117.379118	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
239	34.430916	-117.380155	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
240	34.429992	-117.379105	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
241	34.431190	-117.380134	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
242	34.429987	-117.379134	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
243	34.431091	-117.380218	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
244	34.429999	-117.379182	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
245	34.431378	-117.380535	Kelsey Woldt	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
246	34.430013	-117.379196	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
247	34.431359	-117.380577	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
248	34.430025	-117.379209	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
249	34.431374	-117.380577	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
250	34.430015	-117.379185	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
251	34.430429	-117.379167	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
252	34.429998	-117.379193	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
253	34.430335	-117.379078	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
254	34.429832	-117.379141	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
255	34.430336	-117.379065	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
256	34.429788	-117.379033	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
257	34.430368	-117.379132	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
258	34.429790	-117.379044	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
259	34.430370	-117.379207	Kelsey Woldt	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
260	34.429724	-117.379187	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
261	34.430359	-117.379286	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
262	34.429701	-117.379218	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
263	34.430289	-117.379390	Kelsey Woldt	Class A (<1 m)	No	Dead	Removal	Tree within project impacts
264	34.429547	-117.379034	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
265	34.430284	-117.379392	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
266	34.429555	-117.379027	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
267	34.430255	-117.379401	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
268	34.429523	-117.379207	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
269	34.430204	-117.379321	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
270	34.429620	-117.379246	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
271	34.430189	-117.379303	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
272	34.429506	-117.379262	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
273	34.430073	-117.379474	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts

275	34.430085	-117.379392	Kelsey Woldt	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
277	34.429925	-117.379371	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
278	34.428716	-117.381480	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
279	34.429844	-117.379392	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
280	34.428599	-117.381455	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
281	34.429719	-117.379336	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
282	34.428520	-117.381462	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
283	34.429699	-117.379492	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
284	34.428520	-117.381475	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
285	34.429710	-117.379505	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
286	34.428416	-117.381328	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
287	34.429575	-117.379579	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
288	34.428414	-117.381336	Hannah Swarthout	Class A (<1 m)	No	Dead	Removal	Tree within project impacts
289	34.429551	-117.379524	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
290	34.428438	-117.380907	Hannah Swarthout	Class A (<1 m)	No	Live	Removal	Tree within project impacts
291	34.429554	-117.379519	Kelsey Woldt	Class A (<1 m)	Yes	Live	Removal	Tree within project impacts
292	34.428430	-117.380904	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
293	34.429560	-117.379453	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
294	34.428420	-117.380907	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
295	34.429435	-117.379406	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
296	34.428399	-117.380695	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
297	34.429433	-117.379407	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
298	34.428542	-117.380401	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
299	34.429489	-117.379271	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
300	34.428512	-117.380384	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
301	34.428773	-117.381482	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
302	34.428630	-117.380077	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
303	34.428696	-117.381239	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
304	34.428620	-117.380067	Hannah Swarthout	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
305	34.428599	-117.381206	Kelsey Woldt	Class A (<1 m)	No	Dead	Removal	Tree within project impacts
306	34.428855	-117.379533	Hannah Swarthout	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
307	34.428601	-117.381208	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
309	34.428576	-117.381364	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
311	34.428824	-117.380841	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
313	34.428781	-117.380669	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
315	34.428871	-117.380657	Kelsey Woldt	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
317	34.428789	-117.380334	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
319	34.428833	-117.380287	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
321	34.428775	-117.380089	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
323	34.428720	-117.380054	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
325	34.428722	-117.380013	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
327	34.428795	-117.379986	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
329	34.428948	-117.379798	Kelsey Woldt	Class B (1-4.9 m)	No	Live	Removal	Tree within project impacts
330	34.431549	-117.380768	Hannah Swarthout	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts

400	34.429224	-117.382635	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
401	34.429236	-117.382628	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
402	34.429261	-117.382617	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
403	34.429235	-117.382620	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
404	34.429246	-117.382596	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
405	34.429241	-117.382598	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
406	34.429237	-117.382604	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
407	34.429247	-117.382613	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
408	34.429228	-117.383038	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
409	34.429215	-117.383038	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
410	34.429224	-117.383017	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
411	34.429211	-117.383012	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
412	34.429226	-117.383039	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
413	34.430699	-117.378409	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
414	34.430697	-117.378410	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
415	34.430696	-117.378412	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
416	34.430696	-117.378415	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
417	34.430698	-117.378416	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
418	34.430700	-117.378416	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
419	34.430703	-117.378413	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
420	34.430701	-117.378413	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
421	34.431476	-117.380773	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
422	34.431492	-117.380816	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
423	34.430609	-117.379315	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
424	34.430385	-117.378870	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
425	34.430349	-117.378926	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
426	34.430341	-117.378924	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
427	34.430347	-117.378930	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
428	34.430345	-117.378935	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
429	34.430398	-117.379324	Alec Goodman	Class A (<1 m)	Yes	Live	Removal	Tree within project impacts
430	34.430421	-117.379391	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
431	34.430836	-117.379960	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
432	34.431846	-117.381360	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
433	34.431488	-117.381673	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
434	34.431325	-117.381155	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
435	34.430863	-117.380647	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
436	34.430409	-117.380015	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
437	34.430407	-117.380106	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
438	34.430310	-117.379502	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
439	34.430140	-117.379338	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
440	34.430135	-117.379358	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
441	34.430355	-117.380334	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
442	34.430291	-117.380332	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
443	34.430193	-117.380302	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts

444	34.430134	-117.380315	Alec Goodman	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
445	34.430787	-117.381323	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
446	34.431160	-117.381579	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
447	34.431134	-117.381647	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
448	34.431338	-117.381598	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
449	34.430414	-117.381106	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
450	34.430076	-117.379972	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
451	34.429922	-117.380088	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
452	34.429860	-117.379274	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
453	34.429744	-117.378986	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
454	34.429746	-117.378976	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
455	34.429627	-117.379340	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Removal	Tree within project impacts
456	34.429590	-117.379398	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
457	34.429689	-117.379782	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
458	34.429746	-117.380783	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
459	34.429611	-117.381283	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
460	34.429337	-117.381108	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
461	34.429239	-117.380882	Kelsey Woldt	Class A (<1 m)	No	Live	Removal	Tree within project impacts
462	34.429344	-117.380286	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
463	34.428672	-117.381690	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
464	34.428787	-117.380339	Alec Goodman	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
465	34.428522	-117.381470	Alec Goodman	Class A (<1 m)	No	Live	Removal	Tree within project impacts
466	34.430460	-117.381502	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
501	34.430234	-117.385094	Alec Goodman	Class C (≥5 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
502	34.430252	-117.384686	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
503	34.430239	-117.384688	Alec Goodman	Class A (<1 m)	No	Live	Root Impacts	Tree within 25' of project impacts
504	34.430269	-117.384618	Alec Goodman	Class C (≥5 m)	Yes	Dead	Removal	Tree within project impacts
505	34.430226	-117.384095	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
506	34.430238	-117.384102	Alec Goodman	Class A (<1 m)	No	Live	Root Impacts	Tree within 25' of project impacts
507	34.430227	-117.384102	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25' of project impacts
508	34.430238	-117.383891	Alec Goodman	Class C (≥5 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
509	34.430240	-117.383897	Alec Goodman	Class B (1-4.9 m)	No	Live	Root Impacts	Tree within 25' of project impacts
510	34.430232	-117.383886	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
511	34.430224	-117.383888	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25' of project impacts
512	34.430239	-117.383878	Alec Goodman	Class B (1-4.9 m)	No	Live	Root Impacts	Tree within 25' of project impacts
513	34.430239	-117.383876	Alec Goodman	Class A (<1 m)	No	Live	Root Impacts	Tree within 25' of project impacts
514	34.430238	-117.383882	Alec Goodman	Class A (<1 m)	No	Live	Root Impacts	Tree within 25' of project impacts
515	34.430269	-117.383648	Alec Goodman	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
516	34.430145	-117.383596	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
517	34.430208	-117.383506	Alec Goodman	Class B (1-4.9 m)	No	Live	Root Impacts	Tree within 25' of project impacts
518	34.430173	-117.383363	Alec Goodman	Class C (≥5 m)	Yes	Live	Root Impacts	Tree within 25-50' of project impacts
519	34.430181	-117.383367	Alec Goodman	Class C (≥5 m)	Yes	Live	Root Impacts	Tree within 25-50' of project impacts
520	34.430179	-117.383110	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
521	34.430182	-117.383102	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts

522	34.430179	-117.383107	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
523	34.430171	-117.382639	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
524	34.430177	-117.382648	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
525	34.430175	-117.382644	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
526	34.430174	-117.382642	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
527	34.430184	-117.382652	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25' of project impacts
528	34.430169	-117.382427	Alec Goodman	Class C (≥5 m)	Yes	Live	Root Impacts	Tree within 25-50' of project impacts
529	34.430262	-117.382989	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	Removal	Tree within project impacts
530	34.430304	-117.383176	Alec Goodman	Class C (≥5 m)	Yes	Live	Removal	Tree within project impacts
531	34.430397	-117.383329	Alec Goodman	Class C (≥5 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
532	34.430406	-117.383325	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
533	34.430402	-117.383312	Alec Goodman	Class B (1-4.9 m)	No	Live	Root Impacts	Tree within 25' of project impacts
534	34.430413	-117.383319	Alec Goodman	Class B (1-4.9 m)	No	Live	Root Impacts	Tree within 25' of project impacts
535	34.430423	-117.383507	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts
536	34.430526	-117.384219	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
537	34.430524	-117.384220	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
538	34.430495	-117.384214	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
539	34.430442	-117.384262	Alec Goodman	Class B (1-4.9 m)	Yes	Dead	None	Tree within 25' of project impacts
540	34.430482	-117.384660	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
541	34.430501	-117.384777	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
542	34.430514	-117.384770	Alec Goodman	Class B (1-4.9 m)	Yes	Live	None	Tree within 25-50' of project impacts
543	34.430378	-117.384867	Alec Goodman	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
544	34.430375	-117.384939	Alec Goodman	Class B (1-4.9 m)	No	Dead	Removal	Tree within project impacts
545	34.430521	-117.385287	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
546	34.430520	-117.385291	Alec Goodman	Class B (1-4.9 m)	No	Live	None	Tree within 25-50' of project impacts
547	34.430509	-117.385274	Alec Goodman	Class B (1-4.9 m)	No	Dead	None	Tree within 25-50' of project impacts
548	34.430513	-117.385284	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
549	34.430518	-117.385282	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
550	34.430516	-117.385284	Alec Goodman	Class A (<1 m)	No	Live	None	Tree within 25-50' of project impacts
551	34.430412	-117.385738	Alec Goodman	Class B (1-4.9 m)	Yes	Live	Root Impacts	Tree within 25' of project impacts

APPENDIX B

WESTERN JOSHUA TREE INDIVIDUAL PHOTOGRAPHS

Appendix B
Western Joshua Tree Individual Photographs

Photo 1. WJT 1

Photo 2. WJT 2

Photo 3. WJT 3

Photo 4. WJT 4

Photo 5. WJT 5

Photo 6. WJT 6

Photo 7. WJT 7

Photo 8. WJT 8

Photo 9. WJT 9

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Photo 11.WJT 11

Photo 12. WJT 12

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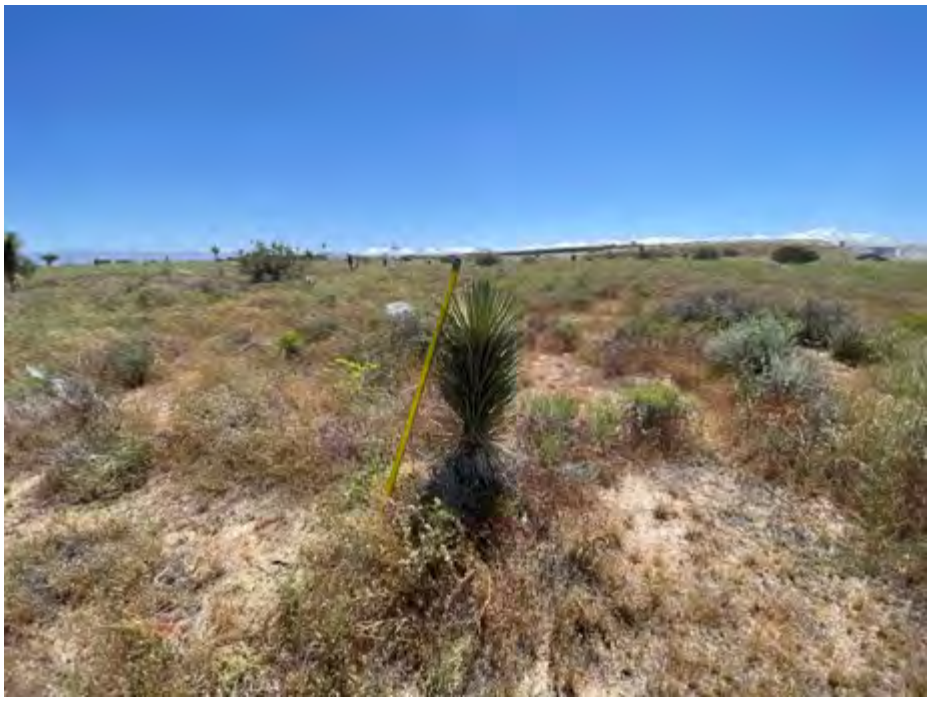

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Photo 424. WJT 550

Photo 425. WJT 551

APPENDIX D

HESPERIA BIG BOX RETAIL PROJECT – FOCUSED CROTCH'S BUMBLEVBEE SURVEY REPORT

ROCKS
BIOLOGICAL CONSULTING

HESPERIA BIG BOX RETAIL PROJECT – FOCUSED CROTCH'S BUMBLEBEE SURVEY REPORT

Hesperia, California

August 20, 2024

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Appendix A – Site Photographs
Appendix B – Potential Nectar Sources Observed
Appendix C – Invertebrates Observed
Appendix D – Surveyor Field Notes

1 SUMMARY

This report is a summary of the results of focused surveys for Crotch's bumble bee (*Bombus crotchii*, CBB) that Rocks Biological Consulting (RBC) conducted for the Hesperia Big Box Retail Project (project) in Hesperia, San Bernardino County, California. No CBB or any other *Bombus* species were documented within the survey area during focused surveys.

2 INTRODUCTION

2.1 PROJECT LOCATION & PROPOSED ACTIVITY

The approximately 20.2-acre project site is in the City of Hesperia, San Bernardino County, California (Figure 1). The project is located directly south of the California Aqueduct, east of Cataba Road, northwest of interstate (I)-15, and north of Main Street. The project proposes the development of a large box retail center and a fuel station on four parcels separated by Armargosa Road. The project occurs within Township 04N, Range 05W, Sections 14 and 15 on the U.S. Geological Survey (USGS) 7.5-minute Baldy Mesa, Hesperia quadrangle map (Figure 1).

2.2 CROTCH'S BUMBLE BEE STATUS & NATURAL HISTORY

CBB has experienced sharp population declines over the past decade and is currently a candidate for listing under the California Endangered Species Act (CESA) based on a 2018 petition submitted by the Xerces Society for Invertebrate Conservation, Defenders of Wildlife, and Center for Food Safety (California Department of Fish and Wildlife [CDFW] 2022). Historically, CBB occurred from northern California south to Baja Mexico and from the coast to the central valley and southwestern desert, with some records as far east as Nevada. However, since the early 2000s a change in extent has been observed, with current range size estimated to be approximately of 75% of historic range and the northern populations now extinct. In addition, the species persistence within its extant range is estimated be approximately 20% of historic occupancy (Hatfield 2015). Though CBB is relatively tolerant of fragmented and/or semi-urban environments, habitat loss, climate change, and pesticide use are considered imminent threats to populations (Williams et al. 2014; CDFW 2022).

Suitable habitat for this species includes a variety of open shrub and grassland vegetation communities that support significant stands of nectar sources, mostly in the form of flowering annuals. CBB's primary nectar sources include *Medicago*, *Lupinus*, *Chaenactis*, *Asclepias*, *Phacelia*, and *Salvia*, which have an easily accessible nectar that accommodates CBB's relatively short tongue (Williams et al. 2014). The project site and surrounding area support scrub habitat and nectar sources appropriate for CBB; therefore, the potential for this species to occur is moderate.

3 METHODS

3.1 SURVEY METHODS

Based on the presence of suitable habitat within the survey area (e.g., the project site), RBC biologists David Faulkner, Ian Hirschler, Alec Goodman, Garrett Moss, Hannah Swarthout, and Kelsey Woldt conducted focused surveys in accordance with the CDFW's *Survey Considerations for CESA Candidate Bumble Bee Species* (CDFW 2023). Surveys were performed two to four weeks apart in May and June when detection of CBB is greatest. Surveys were conducted by walking transects through the survey area focusing on areas where ample nectar sources were present, with a minimum of one person-hour of searching per three acres of suitable habitat. All observed insects and potential nectar sources were identified and recorded during the survey. Surveyors were prepared to record the location of any observed CBB, along with population size and nesting status, and to collect non-lethal photo vouchers captured at various angles to confirm accurate identification.

3.2 SURVEYOR QUALIFICATIONS

Mr. Faulkner is a senior entomologist with over 50 years of experience. He holds a Master of Science degree in systematic entomology and a Bachelor of Arts degree in invertebrate zoology. Mr. Hirschler is a senior biologist with 11 years of professional experience and a Bachelor of Science in wildlife biology. Mr. Goodman is a wildlife biologist with over seven years of professional experience and a Bachelor of Science degree in environmental science. Ms. Swarthout is a wildlife biologist with over four years of professional experience and a Bachelor of Arts degree in environmental studies. Mr. Moss is a senior biologist with over nine years of professional experience and a Bachelor of science in Biology. Ms. Woldt is a wildlife biologist with five years of professional experience and holds a Master of Science degree in biology and a Bachelor of Science degree in ecology, animal behavior, and evolutionary biology. All surveyors are experienced at conducting CBB surveys and are familiar with the identifying characteristics, behavior, and nectar sources for CBB. Additionally, the biologists have taken, and in Mr. Faulkner's case taught, courses that include bumblebee identification.

4 RESULTS

4.1 EXISTING CONDITIONS & HABITAT ASSESSMENT

The survey area is composed of Joshua tree woodland, disturbed California juniper tree woodland, disturbed rabbitbrush scrub, disturbed habitat, and developed land. During the surveys, suitable habitat on the site was dominated by desert wishbone bush (*Mirabilis laevis*), California buckwheat (*Eriogonum fasciculatum*), short-pod mustard (*Hirschfeldia incanna*), paperbag bush (*Scutellaria mexicana*), and red brome (*Bromus rubens*).

The level of human disturbance varied within the survey area from relatively undisturbed to paved. The Joshua tree woodland community was relatively undisturbed and supported a variety of native plants, ample nectar sources, and potential nesting and/or overwintering resources. The disturbed California juniper tree woodland and disturbed rubber rabbitbrush scrub supported fewer plants,

but nectar sources and nesting resources suitable for CBB were present. At the time of the surveys, the disturbed habitat and developed land on site was mostly devoid of flowering plants. The survey area is surrounded by a variety of habitats including disturbed California juniper tree woodland to the west, developed and disturbed land to the south and east, and rubber rabbitbrush scrub to the north. Representative site photographs are presented in Appendix A.

Many of the plants present throughout the site are potential nectar sources for CBB, such as California buckwheat, slender stemmed buckwheat (*Eriogonum gracillimum*), alfalfa (*Medicago sativa*) telegraph weed (*Heterotheca grandiflora*), green rabbitbrush (*Ericameria teretifolia*), short-pod mustard, and red stemmed filaree (*Erodium cicutarium*). A complete list of observed potential nectar sources is presented in Appendix B.

4.2 FOCUSED CROTCH'S BUMBLE BEE SURVEY RESULTS

RBC conducted three focused CBB surveys during the nesting season between May 8 and June 11, 2024. Survey dates, conditions, and personnel are presented in Table 1, below.

No CBB or other *Bombus* species were observed within the survey area. However, many other invertebrates were observed during the surveys. A complete list of invertebrates observed is presented as Appendix C, and complete field notes are provided in Appendix D.

Table 1. Crotch's Bumble Bee Survey Dates/Conditions

Survey Round	Date	Surveyor(s)	Time (Start-End)	Temperature (F) (Start-End)	Cloud Cover (%) (Start-End)	Wind Speed (mph) (Start; End)
1	5/8/24	DF, HS, IH	0900–1215	66-72	0-0	2–5; 3–7
2	5/24/24	AG, DF, KW	0930–1200	60-62	15-0	10–15; 10–15
3	6/11/24	DF, GM, HS	0830-1200	78-96	0-0	2–7; 1–3
Surveyors: AG=Alec Goodman; DF=David Faulkner; GM=Garrett Moss; HS=Hannah Swarthout; IH=Ian Hirschler; KW=Kelsey Woldt						

5 CROTCH'S BUMBLE BEE AVOIDANCE & MINIMIZATION

Pursuant to the CDFW *Survey Considerations for CESA Candidate Bumble Bee Species*, all project sites that support suitable habitat within the range of CBB should conduct pre-construction surveys, regardless of CBB presence/absence during previous focused surveys. The pre-construction surveys will be conducted in accordance with CDFW recommendations. As such, the following avoidance and minimization measure is required to avoid potential direct impacts on CBB:

> Within one year of any ground disturbance or vegetation clearing, a focused species survey for CBB shall be conducted by a qualified biologist. Survey methodology shall follow CDFW's 2023 *Survey Considerations for CESA Candidate Bumble Bee Species*. Surveys shall take place when detection of the focal species is greatest (April through August), when feasible. CBB surveys shall be conducted for a minimum of one

person-hour of searching (excluding time spent capturing, photographing, identifying, and releasing specimen) per three acres of suitable habitat. Surveillance shall be focused where ample nectar sources are present, and non-lethal photo vouchers of focal species shall be captured at various angles to confirm accurate identification (CDFW 2023).

If CBB is documented on the project site, the project proponent shall notify CDFW within five working days of the observation. If necessary, site-specific avoidance and minimization measures shall be implemented to avoid take of CBB. If take avoidance is not feasible, an ITP shall be obtained from CDFW.

6 CONCLUSIONS

No CBB were documented within the survey area for the Hesperia Big Box Retail project during focused surveys conducted between May 8 and June 11, 2024. The focused survey results reported herein are valid for one year. Due to habitat suitability and site location, CBB pre-construction surveys are required within one year of construction activity initiation in order to confirm species absence and ensure impact avoidance.

7 REFERENCES

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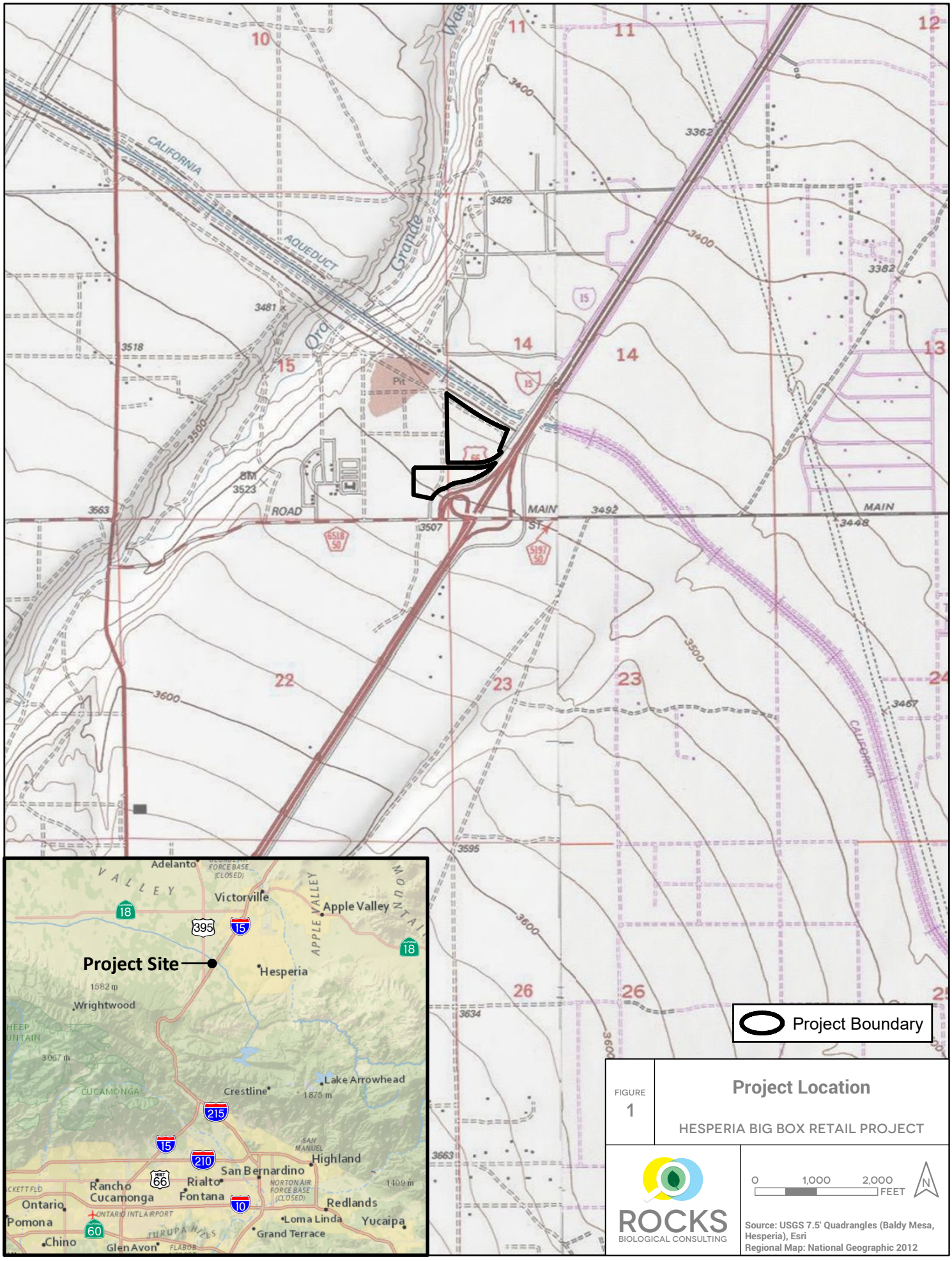


FIGURE 1

Project Location

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 1,000 2,000 FEET

N

Source: USGS 7.5' Quadrangles (Baldy Mesa, Hesperia), Esri
Regional Map: National Geographic 2012

FIGURE 2

Survey Area

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 90 180 FEET

N

Aerial Photo: Nearmap 2023

APPENDIX A

SITE PHOTOGRAPHS

Appendix A

Site Photographs

Photo 1. View of survey area from the northeastern boundary, facing southwest. May 8, 2024.

Photo 2. View of the survey area from the center of the project, facing northwest, showing various nectar sources including green rabbitbrush (*Ericameria teretifolia*) and short-pod mustard (*Hirscfeldia incana*). May 8, 2024.

Photo 3. View from the central portion of the survey area, facing southwest. May 24, 2024.

Photo 4. View of the southeastern portion of the survey area, facing east, showing disturbed California Juniper tree woodland. June 11, 2024.

APPENDIX B

POTENTIAL NECTAR SOURCES OBSERVED

Appendix B

Potential Nectar Sources Observed

Family	Scientific Name	Common Name
Asteraceae	*Acamptopappus sphaerocephalus*	Goldenhead
Asteraceae	*Ambrosis salsola*	Cheesebush
Asteraceae	*Ericameria linearifolia*	Interior goldenbush
Asteraceae	*Ericameria nauseosa*	Rubber rabbitbrush
Asteraceae	*Ericameria teretifolia*	Green rabbitbrush
Asteraceae	*Heterotheca grandiflora*	Telegraphweed
Asteraceae	*Lasthenia gracilis*	Needle goldfields
Asteraceae	*Lessingia glandulifera*	Valley vinegar weed
Asteraceae	*Oncosiphon pilulifer*	Stinknet
Asteraceae	*Tetradymia stenolepis*	Mojave cottonthorn
Brassicaceae	*Brassica tournefortii*	Saharan mustard
Brassicaceae	*Hirschfeldia incana*	Short-pod mustard
Brassicaceae	*Sisymbrium irio*	London rocket
Chenopodiaceae	*Grayia spinosa*	Spiny hopsage
Chenopodiaceae	*Krascheninnikovia lanata*	Winterfat
Cylindropuntia	*Cylindropuntia echinocarpa*	Silver cholla
Euphorbiaceae	*Euphorbia albomarginata*	Rattlesnake sandmat
Fabaceae	*Medicago sativa*	Alfalfa
Fabaceae	*Parkinsonia aculeata*	Mexican palo verde
Geraniaceae	*Erodium cicutarium*	Red-stemmed filaree
Lamiaceae	*Scutellaria mexicana*	Paperbag bush
Nyctaginaceae	*Mirabilis laevis*	Desert wishbone bush
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Polygonaceae	*Eriogonum gracillimum*	Slender stemmed buckwheat
Zygophyllaceae	*Larrea tridentata*	Creosote

APPENDIX C

INVERTEBRATES OBSERVED

Appendix C

Invertebrates Observed

Family	Scientific Name	Common Name
Aphididae	n/a	Aphid
Apidae	*Apis mellifera*	European honey bee
Apidae	*Ceratina* sp.	Small carpenter bee
Apidae	*Melissodes* sp.	Long-horned bee
Apinae	*Diadasia* sp.	Turret bee
Asilidae	*Efferia* sp.	Robber fly
Bombyliidae	*Phthiria* sp.	Bee fly
Bombyliidae	*Poecilanthrax* sp.	Bee fly
Caelifera (Suborder)	n/a	Grasshopper
Carabidae	*Calosoma semilaeve*	Black calosoma
Cerambycidae	n/a	Long horn beetle
Chrysomelidae	*Saxinis* sp.	Case-bearing leaf beetle
Coccinellidae	*Coccinella septempunctata*	Seven-spotted lady beetle
Coccinellidae	*Hippodamia convergens*	Convergent lady beetle
Crabronidae	*Bembix americana comata*	Western sand wasp
Curulionidae	n/a	Weevil beetle
Formicidae	*Pogonomyrmex* sp.	Red harvester ant
Hesperiidae	*Burnsius communis*	Common checkered-skipper
Lycaenidae	*Icaricia acmon*	Acmon blue
Lycaenidae	*Strymon melinus*	Gray hairstreak
Megachilidae	*Megachile* sp.	Leafcutter bee
Nymphalidae	*Junonia coenia*	Common buckeye
Pentatomidae	*Brochymena* sp.	Rough stink bug
Pentatomidae	*Chlorochroa ligata*	Conchuela bug
Pentatomidae	*Chlorochroa sayi*	Say's stink bug
Pieridae	*Abaeis nicippe*	Sleepy orange
Pieridae	*Pieris rapae*	Cabbage white
Reduviidae	*Zelus* sp.	Assassin bug
Salticidae	*Phidippus* sp.	Jumping spider
Sphecidae	*Ammophila* sp.	Thread-waisted wasp
Sphecidae	*Prionyx parkeri*	Prionyx wasp

Tenebrionidae	*Eleodes* sp.	Darkling beetle
Theridiidae	*Latrodectus hesperus*	Western black widow
Tiphiidae	*Tiphia* sp.	Tiphiid wasp
Vespidae	*Polistes exclamans*	Guinea paper wasp

APPENDIX D

SURVEYOR FIELD NOTES

5/8/24 Hesperia Big Box Retail Project

CBB SURVEY 1

IH, DF, HS

	TIME	TEMP	CC	WIND
START	0900	66	0%	2-5
END	1215	72	0%	3-7

ERODIUM CICUTARIUM
SCUTELLARIA MEXICANA
HIRSCHFELDIA INCANA
SISYMBRIUM ALTISSIMUM
GRAMIA SPINOSA
ERIOPHYLLUM CONFERTIFLORUM
ERICAMERIA SP.
MIRABILIS LAEVIS
ERIOGONUM FASCICULATUM
LASTHENIA GRACILIS

ROBBER FLY
~~SYRPHID FLY~~. BOMBYLID
SARCOPHAGID?
TENEBRIONID
ODONATA.
AMMOPHILA SP. - SPHECID.
HIPPODEMIA - NATIVE LADYBIRD INSECT.

PONTIA PROTODICE
VANESSA CARDUI

MEGACHYLIDAE - LEAF CUTTER
PEPSIS WASP

5/8/24 Hesperia Big Box Retail Project

CBB SURVEY 1

IH, DF, HS

	TIME	TEMP	CC	WIND
START	0900	66	0%	2-5
END	1215	72	0%	3-7

ERODIUM CICUTARIUM
SCUTELARIA MEXICANA
HIRSCHFELDIA INCANA
SISYMBRIUM ALTISSIMUM
GRAMIA SPINOSA
ERIOPHYLLUM CONFERTIFLORUM
ERICAMERIA SP.
MIRABILIS LAEVIS
ERIOGONUM FASCICULATUM
LASTHENIA GRACILIS

ROBBER FLY
~~SYRPHID FLY~~. BOMBYLID
SARCOPHAGID?
TENEBRIONID
ODONATA.
AMMOPHILA SP. - SPHECID.
HIPPODEMIA - NATIVE LADYBIRD INSECT.

MEGACHYLIDAE - LEAF CUTTER
PEPSIS WASP

PONTIA PROTODICE
VANESSA CARDUI

Hesperia Big Box Retail Project

5/24/24

0930	60°	10-15	15.1°
1200	62°	10-15	0.0°

*Survey negative for CBB.

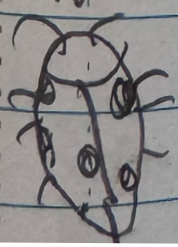
HETGRA GRASPI, ERILIN

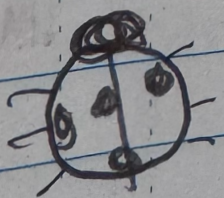
BLOOMING BB's: SCUMEX, BRATOM, HIRINC, EPHVIR MARLAE, EROCIC, MEDSAT ERAFAS, ERIGRA, LASGRA KRELIN, ACASPH AMBSAR

INSECTS: common banded grasshopper, harvester ants, ground darkling beetle, sweat bee, cactus bee, 7-spot lady beetle

NON-Native

NON-native





Hesperia Big Box Retail Project

5/24

AZ				
KW	0430	60	10-15	15%
DF	1400	62°	10-15	0%

Darkling ground beetle
Honey bee
grasshopper
hamster ant
cricket ant
Ladybird beetle
carder bee
sweat bee
Cabbage white
checkered white
aphid sp
Acmon blue

—— No Banded Obs.

Security on site 9-12 pm
- Mark Estrada

Nectar | Sources

Eriogonum fasciculatum
Phacelia tanacetifolia
Salvia mellifera
Eriogonum ~~sp.~~ fasciculatum
~~Salvia sp.~~
Brassica hirta - Brassicaceae
Eschscholzia californica
Mirabilis laevis
Eschscholzia sp.
Encelia californica
Medicago sativa
Castilleja gracilis
Encelia californica
Keckiella cordifolia
Asclepias speciosa
Amsinckia sp.
Penstemon sp.
Abronia umbellata sp.
Crepis sp.
Helianthus annuus
Cylindropuntia echinocarpa

Hesperia Big Box Retail Project CBB

Date: 6/11/2024
Biologists: HS, GM, David Faulkner (DF)

Start: 830, 78F, 2-7 mph wind, 0% CC (DF arrived at 530 and surveyed SW portion of project site at 730, 75F, 1 mph wind, 0% CC)
End: 1200, 96F, 2 mph wind, 0% CC

Species Observed:
Invertebrates: honey bee, robber bee, band-winged grasshopper, checkered skipper, checkered white, leaf cutter bee
Reptiles: Aspidoscelis tigris
Birds: MODO, HOFI, CORA, HOLA, NOMO, CAQU, CACW, LOSH
Mammals: CAGS, desert cottontail, AGS

Survey Notes:

- Small mammal burrows (CAGS and other smaller mouse burrows) present throughout site
- Flowering plants on site include: ERIFAS, HIRINC, LESGLA, EROCIC, ERILUT, palo verde, LAUTRI,
- Temp 94F taken at 1107
- Two CACW observed foraging together on site; 1 adult observed carrying food; possibly 1 adult and 1 fledgling, or just 2 adults
- LOSH adult observed foraging and feeding fledglings throughout the site
- **No Bombus observed during survey**

Hesperia Big Box Retail Project

6/11 CREOTCHES #3
5:00AM- 7 HRS

	TIME	TEMP	WIND	CC
START	8:30AM	78°	2-7	0%
END	12:00PM	96°	1-3	0%

WILDLIFE: ~7 HOLA FLYING OVERST
DAVID ARRIVED AT 5:30AM AND
SURVEYED SOUTHWEST PARCEL
BEFORE WE ARRIVED ON SITE.
~7:30AM @ 75° F.

ROB,
(FEMALE) CHECKERED WHITE,
HARVESTER ANT, GRASSHOPPER.

HONEYBEE & BEE FLY (BOMBYLIIDI)
ON ERIFAS, (MALE) SWEATBEE
(HAS BANDING), GRAY
CHECKERED SKIPPER, WASP, ADULT & LARVAE
SPIDERWASP (FLICKING ANTENNAE)
AG, COTTONTAIL, NOMO, CACTUS
GR WHIP, HARLICKIN BUG,
TICHINID,

NOTES:
FLOWERING HIBINC, ERIFAS, LARVAE
EROCIC, SISOBI, LESCA, ERIERE,
ERIFAS, PARACN, DESERT WILLOW,

APPENDIX E

HESPERIA BIG BOX RETAIL PROJECT – 2025 FOCUSED CROTCH'S BUMBLE BEE SURVEY REPORT

July 11, 2025

California Department of Fish and Wildlife
Attn: Mr. Justin Garcias
Wildlife Branch
P.O. Box 944209
Sacramento, CA 94244

Subject: Crotch's Bumble Bee Survey Report for the Hesperia Big Box Retail Project, City of Hesperia, San Bernardino County, California

Mr. Garcias:

This report is a summary of the results of focused surveys for Crotch's bumble bee (*Bombus crotchii*, CBB) that Rocks Biological Consulting (RBC) conducted for the Hesperia Big Box Retail Project (project) in the City of Hesperia, San Bernardino County, California. No CBB or any other bumble bee (*Bombus*) species were documented within the project site during focused surveys.

Introduction

The approximately 25-acre project site is in the City of Hesperia, San Bernardino County, California (Figure 1). The project is located directly south of the California Aqueduct, east of Key Pointe Avenue, northwest of interstate (I)-15, and north of Main Street. A wholesale big box retail center and associated parking would be constructed north of Amargosa Road, and a fuel station, office building, and carwash facility would be constructed south of Amargosa Road.

The proposed project would also include installation of hardscape, landscaping, and utility improvements to service both the retail center, carwash, and fuel station. The project occurs within Township 04N, Range 05W, Sections 14 and 15 on the U.S. Geological Survey (USGS) 7.5-minute Baldy Mesa, Hesperia quadrangle map (Figure 1).

Crotch's Bumble Bee Natural History

CBB has experienced a sharp population decline over the past decade and is a candidate for listing under the California Endangered Species Act (CESA). Historically, CBB occurred from northern California south to Baja Mexico and from the coast to the central valley and southwestern desert, with some records as far as Nevada. However, since the early 2000's, a change in population ecology has been observed; CBB is found in approximately 75% of its historic range and has been extirpated from the northern extent of this range entirely. In addition, the species' persistence within its extant range is estimated to be approximately 20% of its historic occupancy[1].

[1] Hatfield, R., S. Jepsen, R. W. Thorp, L. Richardson, and S. Colla. 2015. Crotch bumble bee, Bombus crotchii. The IUCN Red List of Threatened Species 2015. Retrieved on August 2024, from https://www.iucnredlist.org/ja/species/44937582/46440211.

Though CBB is relatively tolerant of fragmented and/or semi-urban environments, habitat loss, climate change, and pesticide use are considered imminent threats to populations[2,3].

Suitable habitat for this species includes a variety of open shrub and grassland vegetation communities that support significant stands of nectar sources, mostly in the form of flowering annuals. CBB's primary nectar sources include *Medicago* spp., *Lupinus* spp., *Chaenactis* spp., *Asclepias* spp., *Phacelia* spp., and *Salvia* spp., which have easily accessible nectar that accommodates CBB's relatively short tongue. CBB nest underground, often in abandoned small mammal burrows or similar cavities, and move to a different nest site each year[4].

Methods

RBC biologists conducted a CBB habitat assessment for the project site on June 18, 2023. The habitat assessment included vegetation mapping, an inventory of potential nectar sources, and an assessment of the potential for the project site to support nesting or overwintering habitat. Additionally, RBC queried the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB) and Biogeographic Information and Observation System (BIOS) for CBB records within a 10-mile radius of the project site[5,6]. Based on the presence of suitable habitat, RBC biologists conducted focused CBB surveys between May 8 and June 11, 2024. No CBB were documented within the survey area for the project during these focused surveys.

RBC biologists Ian Hirschler (principal investigator), Imran Badar, Melissa Tamarkin, and Oliver Putnam conducted another round of focused surveys between April 11 and May 23, 2025. Surveys were conducted in all suitable habitat on the project site in accordance with the CDFW's *Survey Considerations for CESA Candidate Bumble Bee Species*[7]. Surveys were performed two to four weeks apart during the Colony Active Period (April – August) when CBB detection is at its peak. RBC biologists conducted surveys by walking through the project site focusing on areas where ample nectar sources were present. During the survey, all observed invertebrates and nectar sources were identified to the lowest taxonomic level possible and recorded in field notebooks.

If a bumble bee was encountered, Mr.Hirschler would carefully capture the specimen using a net. The bumble bee would then be placed it in a sterile vial in a cooler with crushed ice, avoiding temperatures below 25 degrees F. The specimen would be removed from the cooler and vial after approximately 10 minutes or once it appeared anesthetized. Prior to release, photographs would be taken at multiple angles (ventral, dorsal, lateral, anterior, and posterior) to facilitate identification to species. All surveyors were prepared to record the location, associated plant taxa, population

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[2] California Department of Fish and Wildlife (CDFW). 2022. *California Department of Fish and Wildlife News room*. Retrieved from https://wildlife.ca.gov/News/cdfw-seeks-public-comment-related-to-crotchs-bumble-bee-franklins-bumble-bee-suckleys-cuckoo-bumble-bee-and-western-bumble-bee#gsc.tab=0.
[3] Williams, P., R. W. Thorp, L. Richardson, and S. Colla. 2014. Bumble Bees of North America: An identification guide. Princeton University Press.
[4] Ibid.
[5] CDFW. 2025. California Department of Fish and Game Natural Diversity Database – Electronic Format. Retrieved May 2025.
[6] CDFW. 2025. Biogeographic Information and Observation System. Retrieved May 2025, from https://wildlife.ca.gov/Data/BIOS.
[7] CDFW. 2023. Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. Retrieved May 2025, from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213150&inline.

size, and nesting status of any observed CBB and to collect non-lethal photo vouchers captured at various angles to confirm accurate identification.

Results

Existing Conditions

The project site is composed of five vegetation communities including Joshua tree woodland, disturbed California juniper woodland, disturbed rubber rabbitbrush scrub, disturbed land, and developed land [8]. The project site supports habitat and nectar sources appropriate for CBB; however, non-native vegetation species (both suitable and non-suitable for CBB nectaring) are present throughout much of the site due to heavy site disturbance and surrounding human impacts. Small mammal burrows and thatch provide moderate nesting and overwintering potential. Crotch's bumble bee has been recorded within seven miles of the project site near the Cajon pass (i.e., the intersection of I-15 and State Route 138 [SR-138]) and within nine miles of the project site near the Mojave River Forks Reservoir[9,10]. Based on the results of the habitat assessment including the potential availability and diversity of nectar sources, the negative results of the 2024 focused surveys, and the minimal CBB records in the vicinity of the project site, the potential for CBB to occur on the project site was considered low.

During the focused surveys, a variety of potential nectar sources for CBB occurred on site though in low densities. Available nectar sources included California buckwheat (*Eriogonum fasciculatum*), Wright's buckwheat (*Eriogonum wrightii*), paperbag bush (*Scutellaria mexicana*), short-pod mustard (*Hirschfeldia incana*), checker fiddleneck (*Amsinckia tessellate*), tumble mustard (*Sisymbrium altissimum*), Cooper's goldenbush (*Ericameria cooperi*), and red stemmed filaree (*Erodium cicutarium*). Nectar availability varied during each survey as flowering plants on site senesced throughout the survey period (April 11 through May 23, 2025). Representative site photographs are presented in Attachment A, and a list of observed nectar sources is presented in Attachment B.

Precipitation Data

Table 1, below, describes the estimated monthly total precipitation for the project site from July 2024 through June 2025 from the NRCS database for the Hesperia 3.0 SE station[11].

The project vicinity received approximately 4.13 inches of rain April 2024 through April 2025. The City of Hesperia averages approximately 6.72 inches of rainfall a year[12]. Reduced precipitation during the 2024-2025 rainy season likely contributed to a decrease in nectar availability within the project site in terms of both the density and duration of flowering plants.

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[8] Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, the Resources Agency, Dept. of Fish and Game.
[9] CDFW. 2025a. California Department of Fish and Game Natural Diversity Database – Electronic Format. Retrieved May 2025.
[10] CDFW. 2025b. Biogeographic Information and Observation System. Retrieved May 2025, from https://wildlife.ca.gov/Data/BIOS.
[11] NRCS. 2025. AgACIS for San Bernardino County. Monthly Total Precipitation for Hesperia 3.0 SE station, CA. Accessed June 12, 2025.
[12] Western Regional Climate Center. 1977. Hesperia, California Climate Summary. Accessed June 14, 2025. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3935

Table 1. Monthly Precipitation Data (Inches) for July 2024 through June 2025

July 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	June 2025	Total Rainfall
0.00	0.00	0.00	0.00	0.00	0.00	0.95	1.16	1.62	0.17	0.35	0.00	4.25

Focused Surveys

RBC conducted three focused CBB surveys during the Colony Active Period between April 11 and May 23, 2025. Survey dates, conditions, and personnel are presented in Table 2, below.

Table 2. Crotch's Bumble Bee Survey Dates/Conditions

Survey Round	Date	Surveyor(s)	Time (Start-End)	Temperature (F) (Start-End)	Cloud Cover (%) (Start-End)	Wind Speed (mph) (Start; End)
1	4/11/2025	IH, OP, MT	0930-1130	70-80	0-5	0–2; 0–2
2	4/28/2025	IH, IB, MT	0910-1110	52-58	0-0	2–5; 2–5
3	5/23/2025	IH, OP, MT	1000-1130	75-76	0-0	8–15; 8–15
Surveyors: IH=Ian Hirschler; IB=Imran Badar; OP=Oliver Putnam; MT=Melissa Tamarkin						

No CBB or other *Bombus* species were observed within the project site, and no bumble bee nests were observed during the focused surveys. A list of invertebrate species observed is presented as Attachment C, and surveyor field notes are provided in Attachment D.

Surveyor Qualifications

Mr. Hirschler is a senior biologist with over 11 years of professional experience and a Bachelor of Science in wildlife biology. Mr. Hirschler holds a CDFW 2081(a) Memorandum of Understanding (MOU) to conduct presence/absence surveys for CBB via capture and handle. Mr. Badar is a biologist with two years of professional experience and holds a Bachelor of Science degree in wildlife, fish, and conservation biology. Ms. Tamarkin is a biologist with one year of professional experience and holds a Bachelor of Science in ecology and evolutionary biology. Lastly, Mr. Putnam is a biologist with two years of professional experience and holds a Bachelor of Science in agricultural and environmental plant science. All surveyors have taken entomological courses that included bumble bee identification. They each have experience conducting focused CBB surveys and are familiar with the identifying characteristics and preferred nectar sources of CBB.

Conclusions

No CBB, other bumble bee species, or bumble bee nests were documented within the project site during focused surveys conducted between April 11 and May 23, 2025.

Please don't hesitate to call me at (714) 345-8619 if you have any questions.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work.

Sincerely,

Ian Hirschler

Enclosures: Figure 1 – Project Location
Figure 2 – Vegetation Communities
Attachment A – Site Photographs
Attachment B – Nectar Sources Observed
Attachment C – Insect Species Observed
Attachment D – Surveyor Field Notes

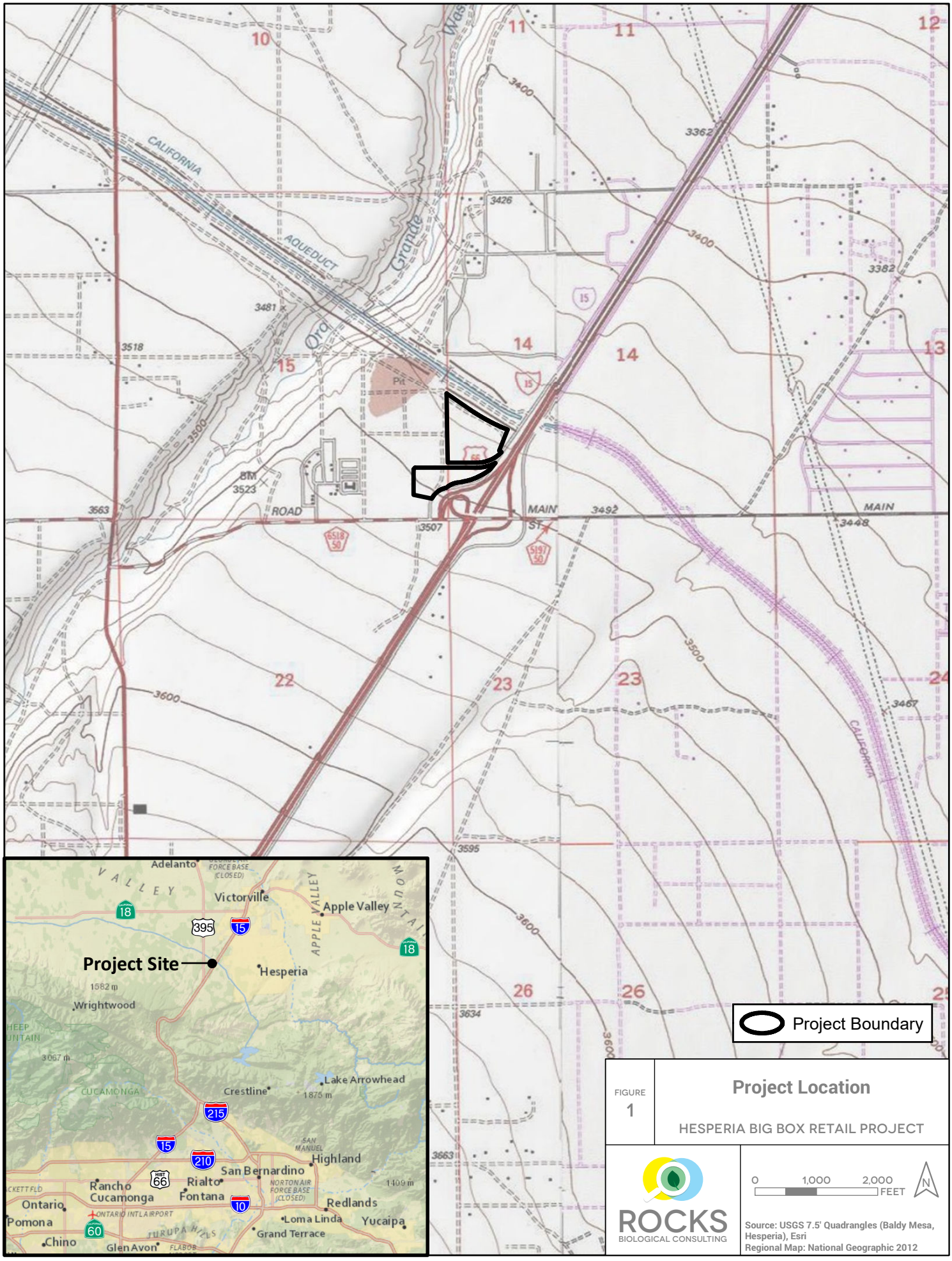

FIGURE 1

Project Location

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 1,000 2,000 FEET

N

Source: USGS 7.5' Quadrangles (Baldy Mesa, Hesperia), Esri
Regional Map: National Geographic 2012

FIGURE 2

Vegetation Communities

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 90 180 FEET

N

Aerial Photo: Nearmap 2024

Attachment A

Site Photographs

Photo 1. View of the survey area from the center of the project north of Amargosa Rd within Joshua tree woodland, facing south. April 11, 2025.

Photo 2. View of the western survey area north of Amargosa Rd showing disturbed California juniper woodland, facing south. May 23, 2025.

Photo 3. View from the eastern portion of the survey area north of Amargosa Rd within Joshua tree woodland, facing west. April 28, 2025.

Photo 4. View of the southern portion of the survey area south of Amargosa Rd showing developed road and arrow pointing to disturbed California juniper woodland, facing east. May 25, 2025.

Attachment B

Nectar Sources Observed

Family	Scientific Name	Common Name
Asteraceae	*Ambrosia acanthicarpa*	Annual bur-sage
Asteraceae	*Ambrosia dumosa*	White bursage
Asteraceae	*Ericameria cooperi*	Cooper's goldenbush
Asteraceae	*Ericameria linearifolia*	Interior goldenbush
Asteraceae	*Ericameria nauseosa*	Rubber rabbitbrush
Asteraceae	*Lasthenia gracilis*	Needle goldfields
Asteraceae	*Tetradymia axillaris*	Longspine horsebrush
Boraginaceae	*Amsinckia tessellate*	Checker fiddleneck
Boraginaceae	*Pectocarya linearis*	Slender combseed
Brassicaceae	*Hirschfeldia incana*	Short-pod mustard
Brassicaceae	*Sisymbrium altissimum*	Tumble mustard
Cactaceae	*Cylindropuntia echinocarpa*	Silver cholla
Chenopodiaceae	*Grayia spinosa*	Spiny hopsage
Chenopodiaceae	*Krascheninnikovia lanata*	Winterfat
Ephedraceae	*Ephedra nevadensis*	Nevada ephedra
Euphorbiaceae	*Euphorbia albomarginata*	White-margin sandmat
Geraniaceae	*Erodium cicutarium*	Red-stemmed filaree
Lamiaceae	*Scutellaria mexicana*	Paperbag bush
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Polygonaceae	*Eriogonum gracillimum*	Slender stemmed buckwheat
Polygonaceae	*Eriogonum wrightii*	Wright's buckwheat
Solanaceae	*Lycium cooperi*	Peach desert thorn
Zygophyllaceae	*Larrea tridentata*	Creosote bush

Attachment C

Invertebrates Observed

Scientific Name	Common Name
Ammophila sp.	Thread-waisted wasp
Apidae	Bee species
Apis mellifera	Western honey bee
Saropogon luteus	Robber fly
Bembix sp.	Sand wasp
Bombylidae	Bee flies
Eleodes sp.	Darkling beetle
Halictidae	Sweat bees
Hippodamia convergens	Convergent lady beetle
Noctuidae	Owlet moths
Anisoptera	Dragonflies
Pogonomyrmex sp.	Harvester ant
Pompilidae	Spider wasps
Sarcophagidae	Flesh flies
Thomisidae	Crab spiders
Zelus sp.	Assassin bug

4/11/25 HESPERIA BIG BOX RETAIL CBB#1

lit, MT, OP

	TIME	TEMP	CC	WIND
START	0930	70	0%	0-2
END	1130	80	5%	0-2

INSECTS

Apis mellifera
ladybird beetle
Ammophila
Syrphid?
Bee (yellow)
Robber fly
Assassin bug

NECTAR

HIRINC EROCIC
AMSMEN SYSALT
LASGRA EUPALB

Hesperia Big Box CBB

Time: 930-1130
Temp: 70-80
CC: 0-5
Wind: 0-2-;0-2

Flowering Plants:
HIRINC
SYSALT
EROCIC
AMSTES
KRALAN
LASGRA
Grayia spinosa

Arthropods:
Apis mellifera
Ladybug beetle
Apidae

Wildlife:
Sidesplotched lizard

4.11.25 Hesperia Big Bar
(Scouts Club)

Start time: 9:30 | end: 11:30
Start temp: 70° | end: 80°
Start wind: 0-2 | end: 0-2
Start cloud: 0% | end: 5%

Plants	Bugs/wildlife
Ambrosia	
· Joshua tree	· side blotched lizard
· Creosote	· whiptail
ericameria	
★ · Hirschfeldia incana	
- Bromus rubens	
★ · erodium	
★ · artemisia tridentata	
★ · Sisymbrium altissimum	
· erigium wrightii	
· Juniperus California	
★ · lasthenia gracilis	
· Dicoria Knescens	
· Tetradymia Stenolepis	
★ · Euphorbia albomarginata	
· Mirabilis	

4/28/25 HESPERIA BIG BOX CBB #2
IH, LB, MT

	TIME	TEMP	CC	WIND
START	0910	52	0%	2-5
END	1110	58	0%	2-5

Apis mellifera HIRINC(FL) SISALT(FL) EROCIC(FL) ERICOO(FL)
~~ERASP1~~ ~~APIFLO~~ YUCBRE TETAXI(D) ERIWRI ~~PHINEV~~
BROTEC SCHBAR BRORUB JUNCAL Noctuidae LYCCOO(FL)
Pogonomyrmex sp. ERINAU BRODIA ladybird sp LASGRA(FL)
SCUMEX(FL) EUPALB(FL) Bembix sp. ERIFAS AMSMEN(FL)
MIRLAE Bombyliid PECLIN(FL) ERIGRA(FL) LYCAMO
Assassin bug Ammophila. Sarcophagid Crabspider

Small, red abdomen wasp. Not Ammophila.

LOSH SHVS CORA HOFI CACW

No Bombus spp.

10 Hesperia Big Box CBB #2 4/28/25

	Time	Temp	Wind	CC
Start	915	54	2-5	0
End	1110	58	2-5	0

Insects

Apis mellifera black harvester ants

Convergent lady beetle (Hippodamia convergens)

Darkling beetle Amaphara

Birds Cactus wren LOSH HOFI SAPH

Nectar Sources

HIRINC ERIFAS EROCIC

Sisymbrium altissamum Grayia spinosa

KRALAN Lasthenia sp. Eriogonum wrightii

ERILIN Euphorbia mal. AMSTES

Bombyllidae Lycium cooperi

Pectocarya linearis Eriogonum gracillimum

Ephedra nebidensis Schurtellavia mexicana

Ambrosia acanthicarpa Ana

Scale: 1 square = _____

Ib BIG BOX CBB #2 4/28
It Start: 9:10 52 0% 2-5 mph
Mt End: 11:10 58 0% 2-5 mph

HERING

~~Lonton rectet~~
Sisymbrium altissimum
Erigeron coperti
grass Spinosa
absinthium
Eriogonum umbellatum
Erigeron linearifolia
Euphorbia albomarginata
Lycium cooperi
Eriogonum fasciculatum var polifolia is budding
Eriogonum gracilimum
Ephedra sp. nebedensis
Scutellaria mexicana
Ambrosia acanthicarpa

Honey bees
bombilidae sp.
Assassins bug
Red-waisted wasp
thread

5/23/25 HESPERIA BIG BOX CBB #3

2H, MT, OP

	TIME	TEMP	CC	WIND
START	1000	75	0%	8-15
END	1130	76	0%	8-15

HIRINC(FI) Apidae EROCIC(FI) SISALT(FI) NOMO

CORA ERINAV(FI) ERIFAS(FI) Apis mellifera

ASTI Harvester ant Bombyliid Odonata PARFLO

AVCO EUPALB(FI) Halictidae Spider wasp

Asilidae (thin, red) Ladybeetle

Hesperia Big Box (BB

5.23.25

start @ 10:00 am.
Cloud % → 0
wind. 8-15 mph
temp. 75°

end date
11:30
cloud → 0%.
wind: 8-15
temp → 78°

Flowering Plants

- Erodium cicutarium
- Ambrosia Dumosa
- Eriogonum fasciculatum
- Ericameria paucifolia
- Scutellaria mexicana
- Brachyramphus lanata
- Euphorbia albomarginata
- S. Symphiotrichum altissimum
- Silver Cholla
- Larrea tridonata

Insects

- native bee
- Convergent ladybeetle
- halictidae
- Dragonfly
- Robber Fly

Oliver Putnam
MT
IH

Scale: 1 square = _____

5/23/25

Hesperia Big Box CBB MT, OP, IH

	Time	Temp	Wind	cc
Start	1000	75	8-15	0
End	1130	76	8-15	0

Insects

Native bee — Convergent ladybeetle
Halictidae — Apis mellifera — Robberfly

Flowering Plants

SCUMEX	HIRINV	EROCIC
ERIFAS	EUPALB	ERINAV
ERILIN	KRALAN	LEPSQV
ERICOO	TETAXI	LARTRI

Scale: 1 square = _____

APPENDIX F

MOHAVE GROUND SQUIRREL HABITAT ASSESSMENT AND LIVE-TRAPPING SURVEY, HESPERIA BIG BOX RETAIL PROJECT, SAN BERNARDINO COUNTY

Mohave Ground Squirrel Habitat Assessment and Live-Trapping Survey,
Hesperia Big Box Retail Project, San Bernardino County

Phil Brylski, Ph.D., July 20, 2024

This memo summarizes the results of a habitat assessment for the Mohave ground squirrel (MGS, *Xerospermophilus mohavensis*) and a protocol live-trapping survey on an approximately 25.37 acre site at Assessor Parcel Numbers 40506272, 40506273, 306448106, and 306448107 in Hesperia. The proposed project would convert the site from desert scrub to commercial land uses. The site is located on the U.S. Geological Survey Baldy Mesa 7.5-minute topographic map (Township 4N, Range 5W; $SW^{1/4}$ Section 14, $SE^{1/4}$ Section 15) at elevations from approximately 3,475 to 3,505 feet above mean sea level. The UTM coordinates for the approximate center of the site are 11S 465069E, 3809975N. Figures 1 and 2 show project site on a vicinity map and aerial photo, respectively. Appendix 1 contains site photos.

Background on the Mohave Ground Squirrel (MGS)

The MGS is a small ground squirrel, approximately 9 inches long that inhabits the Mojave Desert in parts of Inyo, Kern, Los Angeles and San Bernardino counties. The historical range of the MGS covered approximately 5 million acres from Palmdale in the south to Owens Lake in the north, and from the eastern edge of the Sierra Nevada to the Mojave River Valley (Gustafson 1993, Leitner 2008). MGS occur in a range of open desert habitats, most commonly in creosote scrub but also in Joshua tree woodland, desert saltbush scrub, desert sink scrub, desert greasewood scrub, and shadscale scrub (Gustafson 1993). MGS typically occur in areas with open vegetative cover and small bushes (< 0.6 meter [2 feet] in height) spaced approximately 6 to 9 meters (20 to 30 feet) apart.

MGS consume leaves, forbs, shrubs, and grasses of several species and genera, including creosote (*Larrea tridentata*), winter fat (*Krascheninnikovia lanata*), spiny hop-sage (*Grayia spinosa*), saltbush (*Atriplex* spp.), golden linanthus (*Linanthus aureus*), Mediterranean grass (*Schismus arabicus*), box thorn (*Lycium* spp.), and several other plant species (Best 1995). Winter fat, spiny hop-sage, and saltbush are thought to make up approximately 60% of the species' shrub diet, indicating that these are important food sources when forbs are unavailable. These diet data are based on observations in the northern part of the species' range, and the extent that they are the same or differ in the southern part of the range has not been analyzed, apart from limited observations.

MGS dig burrows in sandy and gravelly soils on flat to moderately sloping terrain. The burrows are used to avoid predators and high temperatures, and for aestivating during winter months. MGS are active only during the spring-summer months and spend most of the year (approximately seven months) below ground.

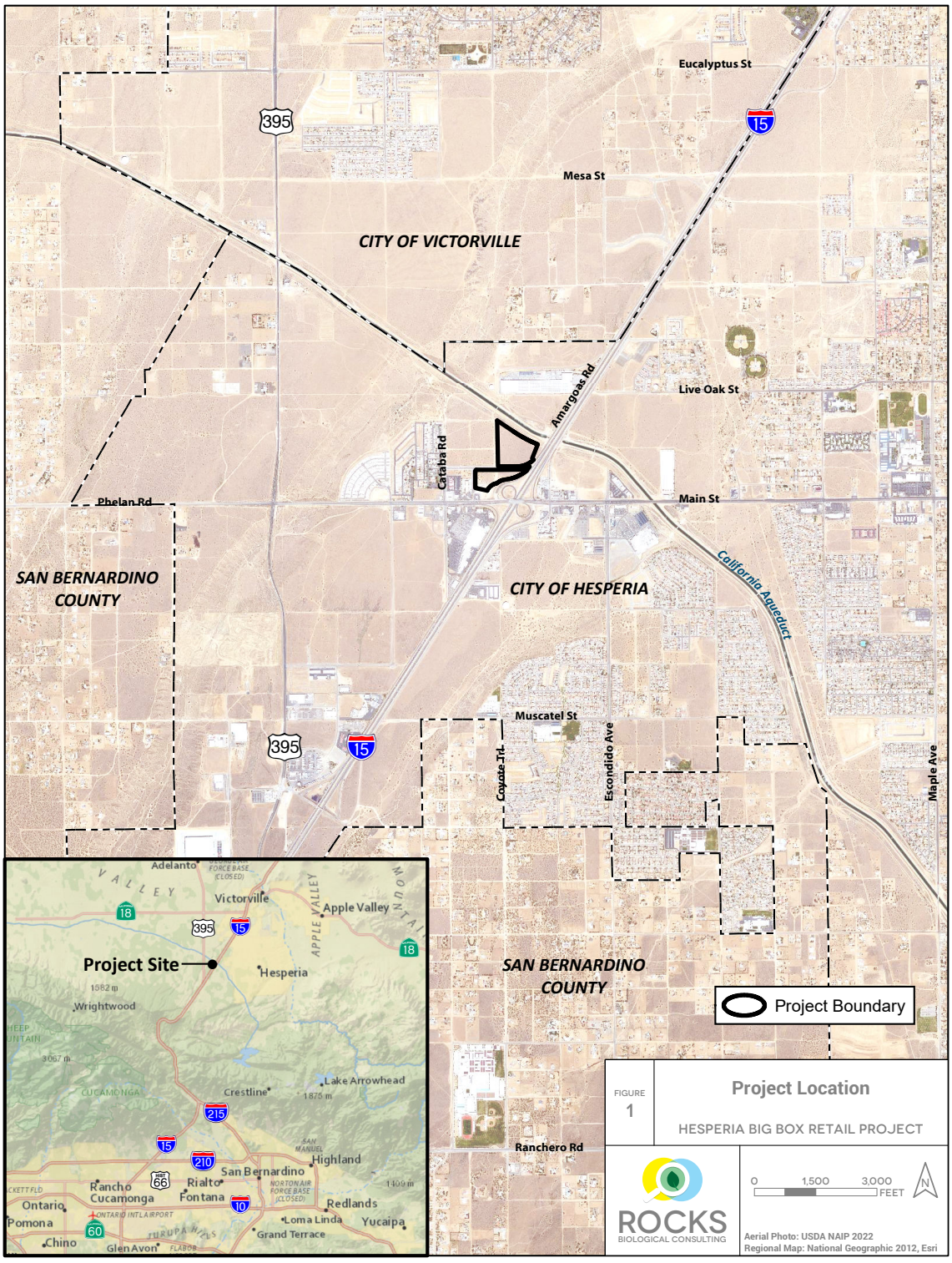

Figure 1. Vicinity map

Figure 2. Project site on an aerial photo

Site Description

The site slopes approximately two percent to the northeast. The soils on the site are Cajon sands and Hesperia loamy fine sands (NRCS 2024).

Plant Communities

Figure 3 shows the distribution of the following land covers: disturbed Joshua tree woodland, disturbed California juniper woodland, disturbed, developed, and disturbed rubber rabbitbrush scrub. Descriptions of the plant communities are as follows:

> **Disturbed Joshua tree woodland** (photo 1; 13.63 acres; *Yucca brevifolia* wooded shrubland alliance) occurs on the majority of the northern parcel of the project site. Joshua tree (*Yucca brevifolia*) is the dominant tree. The shrubs include California juniper (*Juniperus californica*), green ephedra (*Ephedra viridis*), Cooper's box thorn (*Lycium cooperi*), winter fat, bladder sage (*Scutellaria mexicana*), California buckwheat

(*Eriogonum fasciculatum*), yellow rabbitbrush (*Chrysothamnus viscidiflorus*), and saltbush (*Atriplex* sp). The herbaceous layer includes soft brome (*Bromus hordeaceus*), red brome (*B. rubens*), great brome (*B. diandrus*), desert needlegrass (*Pappostipa speciosa*), Mediterranean grass, common stork's bill (*Erodium cicutarium*), and Baker's goldfields (*Lasthenia californica*). This vegetation community is disturbed by human activities, as evidenced by trash dumping and the presence of dense short-pod mustard (*Hirschfeldia incana*);

Disturbed California juniper woodland (photos 2 and 3; 8.57 acres; *Juniperus californica* wooded shrubland alliance) occurs across the western part of the northern parcel and in the southern parcels of the project site. It is dominated by California juniper and scattered Joshua trees in the tree strata. The shrub layer includes green ephedra, Cooper's box thorn, rubber rabbitbrush (*Ericameria nauseosa*), California buckwheat, yellow rabbitbrush, and bladder sage. The herbaceous layer includes soft brome, red brome, Mediterranean grass, London rocket (*Sisymbrium irio*), annual bursage (*Ambrosia acanthacarpa*), common storks-bill, and dense short-pod mustard. Human disturbances, including off-road vehicle tracks and trash dumping, are present throughout this community. This community on the parcel in the southwestern part of the site had homeless encampments in sessions 1 and 2, and trash dumping there is common;

Disturbed (photo 4, 1.41 acres) habitat occurs along dirt roads and contains short-pod mustard, London rocket, soft brome, Menzie's fiddleneck (*Amsinckia menziesii*), and yellow rabbitbrush;

Developed (1.2 acres) land cover includes the parking lot in the southwestern corner of the project site and the broad dirt road that separates the southwestern and southeastern parts of the site; and

Disturbed rubber rabbitbrush scrub (photo 4; 0.62 acre; *Ericameria nauseosa* shrubland alliance) occurs along the dirt roads in the northern and southern parcels. It is dominated by rubber rabbitbrush with California buckwheat, London rocket, common stork's bill, fiddleneck, and annual ambrosia. Human disturbances within this vegetation community include trash dumping and off-road vehicle use.

Methods

A literature review of MGS occurrences and issues in the project vicinity included the following:

- MGS records in the California Natural Diversity Database (CNDDB, California Department of Fish and Wildlife [CDFW] 2024);
- Summaries of MGS surveys in the project region for the periods 2013-2020, 2008-2012, and 1998-2007 (Leitner 2021, 2015, and 2008); and
- The CDFW 2019 MGS Conservation Strategy (CDFW 2019).

Habitat Assessment

The suitability of habitat for MGS on the site was examined using soil, vegetation, topographic and disturbance features. A visual/auditory survey was carried out concurrent with the habitat assessment. The survey was conducted from 12 to 3 pm on April 7, 2024 under mild weather (25% clouds with temperatures from 54 to 65 °F, and 2-5 miles-per-hour winds). The survey was conducted by Phil Brylski, PhD, who is permitted by the CDFW for MGS surveys.

Live-trapping surveys

A MGS protocol live-trapping survey was carried out to determine presence/absence because the site is within the species' historical range and there is suitable habitat on the site. Initially, the MGS survey was planned for parcels 40506272 and 40506273 (red boundaries shown on Figure 4), and a 100-trap grid was established on these two parcels along parallel transects (the yellow and blue lines shown on Figure 4). On the third day of session 1 of the survey, the project site was expanded to include adjoining parcels 306448106 and 306448107 for the same project (the boundary in green shown on Figure 4), which led to extending the trap effort at those two parcels by two additional days to achieve five days of trapping in session 1 across the entire project site. Eight traps were moved from the northeastern corner of the site (the blue transects shown on Figure 4) to transects in parcels 306448106 and 306448107 (within the green borders shown on Figure 4). These parcels were in use by un-housed individuals, therefore the traps were located within juniper shrubs to avoid damage or loss.

The survey was carried out in three sessions: April 20-26, May 26-31, and June 27-July 1, 2024, for a total of 1,500 live-trap days. Cardboard tents were used to shield the traps from sunlight. Traps were baited with four-way livestock feed mixed with bird seed and were checked every four hours and closed when the air temperature reached 90°F measured at six inches above the ground in the shade.

Camera stations were established to supplement the live-trapping surveys in accordance with CDFW recommendations, with the objective of documenting use by ground squirrels known to occur in the region, including MGS and two common species: the antelope ground squirrel (*Ammospermophilus leucurus*) and California ground squirrel (*Otospermophilus beecheyi*). The camera stations were set up inside the trapping grid and operated in accordance with recommendations of Delaney et al. (2017). Five cameras[1] were operated from dawn to dusk for the three 5-day sessions. The locations of the grid and camera stations are shown on Figure 4. The camera survey totaled 75 camera trap days.

[1] Browning Dark Ops HD Pro X Trail cameras

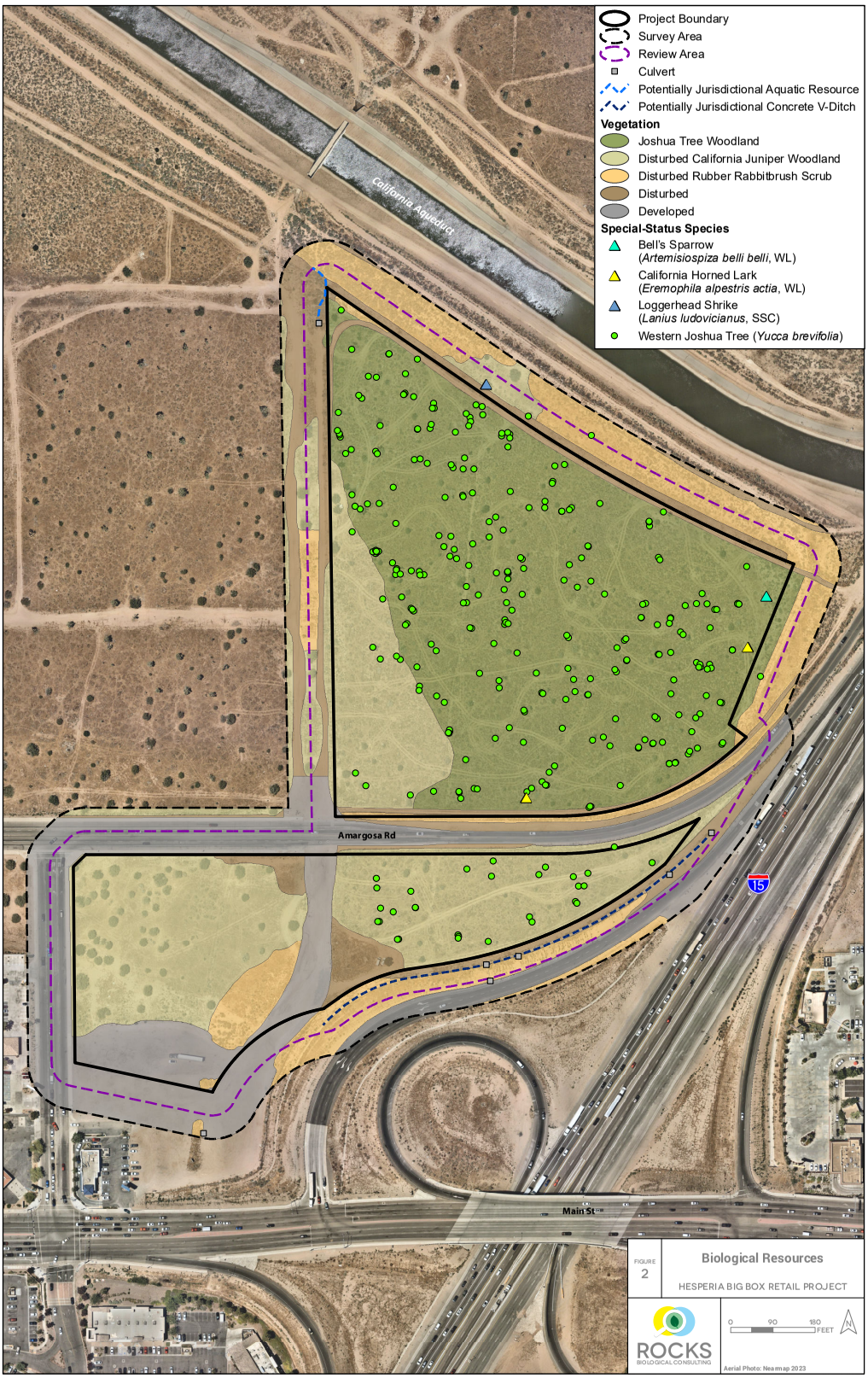

Figure 3. Plant communities

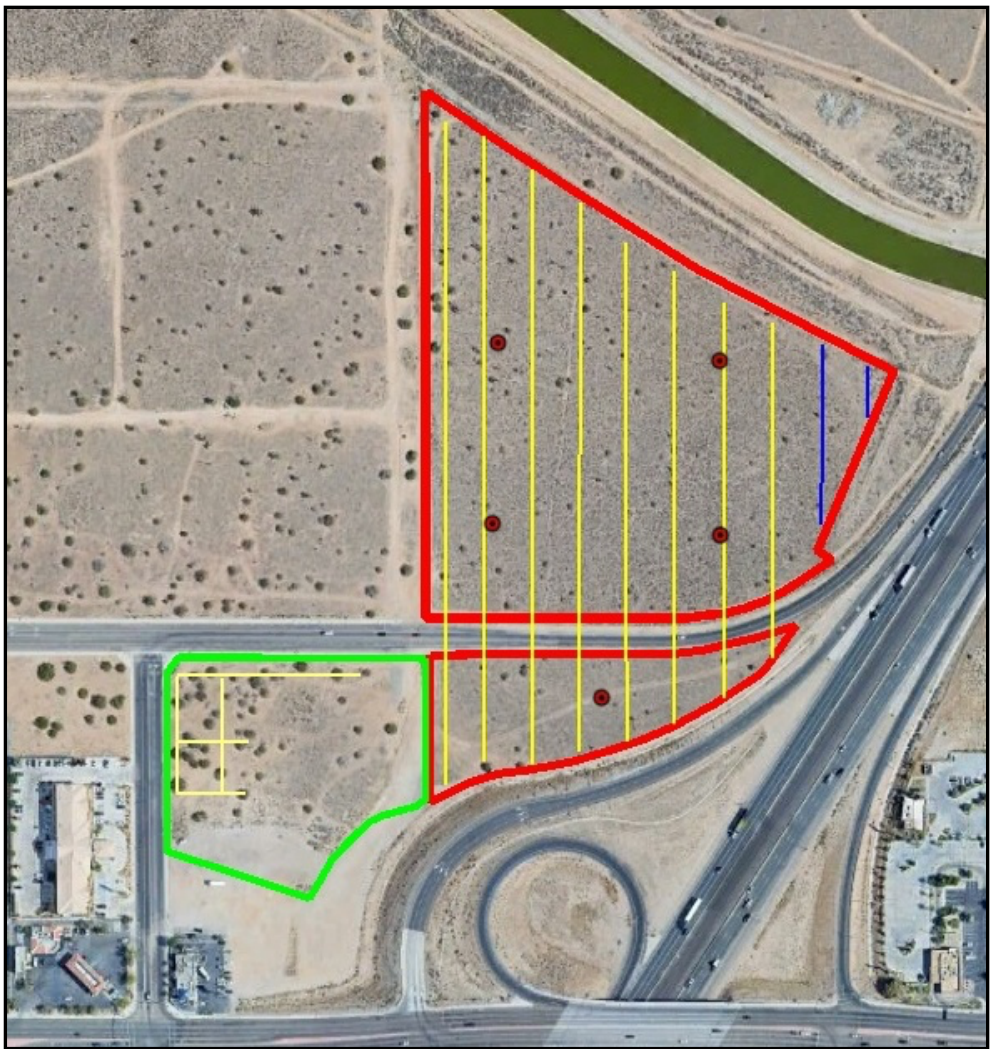

Figure 4. Project parcels (red and green polygons) with trap transects (yellow and blue lines) and camera locations (red circles)

Results

MGS habitat suitability

The dominant habitats on the project site, disturbed Joshua tree and California juniper woodlands, are suitable for MGS but are of low quality due to the high density of non-native grasses and ruderal plants such as short-pod mustard. The disturbed rubber rabbitbrush scrub and disturbed habitats are marginally suitable for MGS, but these occur in proximity to suitable habitats and therefore could be used by MGS.

MGS Live-Trapping Surveys

No MGS were captured during the surveys, and none were observed or heard on site or in adjacent areas. The weather during the survey is summarizes in Appendix 2. Appendix 3 contains the grid summary.

Two squirrel species, the antelope ground squirrel (AGS; *Ammospermophilus leucurus*) and the California ground squirrel (CGS; *Otospermophilus beecheyi*), were captured. Table 1 summarizes the survey captures. Night-time small mammal captures included the Panamint kangaroo rat (*Dipodomys panamintinus*), Merriam's kangaroo rat (*D. merriami*), and deer mouse (*Peromyscus maniculatus*), which are common species in the region.

Table 1. Trapping Survey Results

Session	Captures per Species		
	AGS		CGS
	Ad	SA/Juv	
1	6	0	35
2	20	9	50
3	23	14	30
Total	49	23	115

AGS: Antelope ground squirrel (*Ammospermophilus leucurus*)
CGS: California ground squirrel (*Otospermophilus beecheyi*)
Ad: adult; SA/Juv: subadult or juvenile

Discussion

MGS Occurrences in Project Vicinity Based on CNDDB and Museum Records

The site is located in the southeastern edge of the species' range. The nearest MGS records are approximately 1.8 miles northwest of the site and 3.4 miles north of the site, based on live-trapping surveys in 2005 and 1997, respectively.

MGS Survey Results in Project Vicinity from 1998 to 2020

Leitner (2008, 2015, 2021) summarized the results from all MGS surveys across the species range over three time periods. The survey results for the project vicinity are as follows:

- In the 1998-2007 period, Leitner (2008) showed four MGS live-trapping surveys in the Hesperia/I-15 corridor in the project vicinity, which yielded no MGS captures. However, one 2005 survey yielded a juvenile MGS approximately 1.8 miles northwest of the site;

- In the 2008 to 2012 period, Leitner (2015) showed four MGS live-trapping surveys in the Hesperia/I-15 corridor, which yielded no MGS captures; and

- In the 2013-2020 period, Leitner (2021) showed no surveys in the Hesperia/I-15 corridor, but there were a number of surveys in the Victorville area west of SR-395, which yielded no MGS captures.

Conclusion

The MGS surveys on the project site included visual/aural surveys, live-trapping, and camera station surveys and yielded no MGS occurrences. Based on the negative results of the current survey, MGS are not known to occur on the project site and would not be expected to be impacted by the proposed project. According to the MGS Survey Guidelines (CDFW 2023), “In

the absence of other MGS detection data for the site, surveys conducted according to these guidelines that result in no detection of MGS ("negative" survey results) are interpreted to mean that MGS are not present on the project site for the survey year. In other words, negative survey results are valid until the start of the next survey season (March of the subsequent year)." If the site is not graded before March 15, 2025 it may be necessary to repeat the MGS survey.

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Appendix 1. Site photos

Photo 1. Disturbed Joshua tree woodland in the north-central part of the site, looking south

Photo 2. Disturbed California juniper scrub in the southern parcel, looking northeast

Photo 3. Disturbed California juniper scrub in the southwestern parcels, looking north

Photo 4. Disturbed rubber rabbitbush scrub and disturbed (roadway) habitat in the northeastern part of the site, looking northwest

Appendix 2. Weather Data

Date	Temperature (°F)				Cloud Cover (%)				Wind (mph)			
	Min	Time	Max	Time	Min	Time	Max	Time	Min	Time	Max	Time
4/20	50	0700	81	1330	0	0700	0	1900	0	0700	0	1900
4/21	52	0700	82	1600	0	0700	0	1900	0	0700	0	1900
4/22	62	0710	81	1400	0	0700	0	1845	0	0700	0	1845
4/23	51	0705	66	1639	0	0705	0	1900	2-3	1900	3-5	0705
4/24	53	0700	67	1330	0	0700	1	1330	2-4	0700	3-8	1330
4/25	50	0655	63	1400	0	1830	2	1400	2-4	0655	5-10	1830
4/26	45	0645	59	1130	30	0645	45	1130	3-8	0645	10-15	1130
5/27	57	0650	85	1600	0	0650	0	1900	1	0650	3-5	1600
5/28	56	0640	82	1630	0	0640	0	1845	1	0930	5-7	1630
5/29	57	0640	81	1730	0	0640	0	1900	0	0640	3-8	1730
5/30	64	0640	88	1500	0	0640	0	1900	0	0640	0	1900
5/31	62	0630	89	1530	0	0630	0	1830	1	0630	1	0630
6/27	65	0630	90	1200	0	0630	0	1200	1	0630	4	0800
6/28	63	0630	90	1300	0	0630	0	1300	2	0630	4-5	1300
6/29	70	0630	90	1330	0	0630	0	1330	1-2	1330	2-3	0630
6/30	71	0630	90	1200	0	0630	0	1200	2	0630	3	1200
6/31	65	0615	90	1145	0	0615	0	1145	0-1	0615	2-5	1145

Appendix 3. MGS Survey and Trapping Form

Part I – Project Information							
Project Name:	Hesperia Big Box Retail Project				Township:	4N	
Property Owner:	Private				Range:	5W	
Quad/Map Series:	Baldy Mesa 7.5'				Section:	$SW^{1/4}$ S 14, $SE^{1/4}$ S 15	
UTM Coordinates of grid corners (NAD 83, error <6m)							
NW Corner		NE Corner		SE Corner		SW Corner	
Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing
464917	3810143	465169	3809986	465138	3809780	464920	3809690
Acreage of Project Site (or linear distance):							25.37 Acres
Acreage of potential MGS habitat on site (or linear distance):							23.96 Acres
Visual Surveys of potential MGS habitat conducted on:							April 7, 2024
Visual Surveys conducted by:							Phil Brylski
Total # of grids:							1

Session	Start Date	End Date
1	4/20/24	4/26/24
2	5/27/24	5/31/24
3	6/27/24	7/1/24

Trapping Conducted By:
P. Brylski
P. Brylski
P. Brylski

Part II –General Habitat Description	
Vegetation	
Dominant Perennials	Joshua tree, California juniper
Other Perennials	Ephedra, Cooper's box thorn, winter fat
Dominant Annuals	soft brome, red brome, great brome, desert needlegrass, Mediterranean grass,
Other Annuals	common stork's bill, Baker's goldfields

Land Forms (*i.e.*, bajadas, washes): Alluvial plain

Soil Description: Cajon sands and Hesperia loamy fine sands

Elevation: 3,475 to 3,500 feet Slope 2% to NE

APPENDIX G

HESPERIA BIG BOX RETAIL PROJECT PROTOCOL PRESENCE/ABSENCE 2024 SURVEY REPORT FOR BURROWING OWL (*ATHENE CUNICULARIA*)

ROCKS
BIOLOGICAL CONSULTING

HESPERIA BIG BOX RETAIL PROJECT

PROTOCOL PRESENCE/ABSENCE 2024 SURVEY REPORT FOR BURROWING OWL (*Athene cunicularia*)

San Bernardino County, California

July 15, 2024

Prepared for:
Kimley-Horn and Associates
1100 W Town and Country Road, Suite 700
Orange, CA 92868
(619) 234-9411

Prepared by:
Rocks Biological Consulting
4312 Rialto Street
San Diego, CA 92107
(619) 701-6798

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4.2 Burrowing Owl Survey Results 3
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Appendix B – Bird Species Observed
Appendix C – California Natural Diversity Database Online Field Survey Form Reports
Appendix D – Surveyor Field Notes

1 SUMMARY

This report is a summary of the focused burrowing owl (*Athene cunicularia*; BUOW) surveys conducted by Rocks Biological Consulting (RBC) for the Hesperia Big Box Retail Project (project) in the City of Hesperia, San Bernadino County, California. The project is located within the San Bernardino County Burrowing Owl Overlay Zone and based on the presence of suitable habitat, RBC conducted focused breeding season BUOW surveys between April 8, 2024, and June 25, 2024, in accordance with the California Department of Fish and Wildlife (CDFW) *Staff Report on Burrowing Owl Mitigation* (Guidelines; CDFW 2012).

No BUOW, active burrows, or BUOW sign were documented within the project site or survey buffer during the focused breeding season BUOW surveys.

2 INTRODUCTION

2.1 PROJECT LOCATION

The project is located in the City of Hesperia, San Bernardino County, California (Figure 1). The project site is located directly south of the California Aqueduct, east of Key Pointe Avenue, northwest of Interstate (I)-15, and north of Main Street. The project site is bisected by Amargosa Road. The site Assessor Parcel Numbers (APNs) include 040506272, 040506273, 306448106, and 306448107.

2.2 PROJECT DESCRIPTION

The project proposes the development of an approximately 25.37-acre site consisting of two parcels separated by Amargosa Road. A large big box retail center would be constructed on the northern parcel and a fuel station would be constructed on the southern parcels. The proposed project would also include installation of hardscape, landscaping, and utility improvements to service both the retail center and fuel station.

2.3 BURROWING OWL NATURAL HISTORY

The CDFW lists BUOW as a Species of Special Concern. In California, suitable habitat for BUOW is generally characterized by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils, such as naturally occurring grassland, shrub steppe, and desert habitats (Haug et al. 1993). In addition, BUOW may also occur in agricultural areas, ruderal grassy fields, vacant lots, and pastures containing suitable vegetation structure and useable burrows with foraging habitat in proximity (Gervais et al. 2008). Typically, BUOW use burrows dug by California ground squirrel (*Otospermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) and dens or holes dug by other fossorial species including badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (e.g., San Joaquin kit fox [*Vulpes macrotis mutica*]) (Ronan 2002). Additionally, BUOW frequently use natural rock cavities, debris piles, culverts, and pipes for nesting and roosting (Rosenberg et al. 1998) and have been documented using artificial burrows for nesting and cover (Smith and Belthoff 2001). Occupancy of BUOW habitat is confirmed at a site when at

least one BUOW, or its sign at or near a burrow entrance, is observed within the last three years (Rich 1984).

3 METHODS

RBC biologists Garrett Moss, Alec Goodman, Kelsey Woldt, and Hannah Swarthout conducted the breeding season BUOW surveys for the project. Garrett Moss is a senior biologist with over nine years of experience in environmental consulting throughout the state of California with a focus on avian species and herpetofauna. Alec Goodman is an associate biologist with over seven years of experience in environmental consulting with a focus in Mojave Desert biology. Kelsey Woldt is an associate biologist with over five years of experience in environmental consulting throughout San Diego, Riverside, and San Bernardino Counties. Hannah Swarthout is a staff biologist with over three years of experience in environmental consulting throughout San Diego, Riverside, and San Bernardino Counties. Collectively, RBC biologists have extensive experience surveying for BUOW and associated sign. Each biologist has experience performing BUOW surveys and is familiar with BUOW natural history and identification.

Four BUOW surveys were conducted during the typical BUOW breeding season (February 1 – August 31). In accordance with CDFW recommendations (CDFW 2012), three of the surveys occurred during the peak of breeding season (April 15 – July 15) at least three weeks apart. The survey area included the project site, as well as all suitable habitat within a 500-foot buffer per CDFW guidance (Figure 1).

During each survey, RBC biologists walked through suitable BUOW habitat within the survey area via straight-line transects spaced 10 to 30 meters (m) apart, adjusting for vegetation height and density, and used binoculars to scan the survey area at least every 100 m for BUOW, active burrows, and/or sign of BUOW. No calls were used. All observed burrows were examined for sign, including feathers, pellets, whitewash, and prey remains. Burrows were considered active if a BUOW was observed at or near the entrance or if recent sign was present. Any BUOW, active burrows, and BUOW sign were mapped in the geographic information system (GIS) program ArcGIS Collector.

4 RESULTS

4.1 EXISTING CONDITIONS & HABITAT ASSESSMENT

The project site is primarily composed of disturbed Joshua tree (*Yucca brevifolia*) woodland and disturbed California juniper (*Juniperus californica*) tree woodland. Small areas of disturbed rubber rabbitbrush (*Ericameria nauseosa*) scrub and disturbed land are also present along the interior borders of the project site. The topography of the project site is generally flat with minimal changes in elevation. Vacant lots surround the project site to the west, and smaller undeveloped areas occur adjacently to the north, south, and east. Open spaces abutting the project site are composed of disturbed rubber rabbitbrush scrub, disturbed Joshua tree woodland, and disturbed land.

Vegetation throughout the survey area was variable, resulting in disparate degrees of habitat suitability. Trees and shrubs were relatively interspersed throughout the survey area which resulted in an overall lower percentage of total cover in comparison to the herbaceous layer. The herbaceous layer was dominated by non-native mustards and grasses, including black mustard (*Brassica nigra*), London rocket (*Sisymbrium irio*), red brome (*Bromus rubens*), and ripgut brome (*Bromus diandrus*). Some portions of the survey area were composed of very dense patches black mustard growing up to 1 m in height; these areas were unsuitable for BUOW occupation. Additionally, many of the California ground squirrel burrows throughout the survey area were obscured by tall, dense non-native grasses and, as a result, were unlikely to become occupied by BUOW in their current state. A greater number of suitable BUOW burrows were present at the base of California junipers where established California ground squirrel burrow complexes were present with no-to-low herbaceous cover.

Photographs of the survey area are presented in Appendix A.

4.2 BURROWING OWL SURVEY RESULTS

RBC conducted four focused BUOW surveys during the breeding season between April 8, 2024, and June 25, 2024. Survey dates, times, and weather conditions are presented in Table 1, below.

Table 1. Burrowing Owl Survey Dates and Conditions

Survey Number	Date	Surveyor(s)	Time (Start- End)	Temp. (F) (Start- End)	Cloud Cover (%) (Start- End)	Wind Range (mph) (Start; End)	Precip. (Low, Med, High) (Start- End)	Visibility (Low, Med, High) (Start; End)
1	4/8/2024	AG, HS	0715-1015	41-49	0-0	1-3; 3-8	None; None	High; High
2	5/7/2024	AG, KW	0700-0945	52-63	0-0	1-3; 0-3	None; None	High; High
3	5/30/2024	AG, HS	0745-1000	67-76	0-0	2-4; 0-3	None; None	High; High
4	6/25/2024	AG, GM	0845-1030	82-88	10-5	3-5; 3-5	None; None	High; High
AG=Alec Goodman, GM=Garrett Moss, HS=Hannah Swarthout, KW=Kelsey Woldt								

No BUOW, active burrows, or BUOW sign were documented within the project site or survey buffer. These negative survey results suggest that BUOW are not currently breeding on site; however, due the presence of suitable habitat, BUOW could forage, seek refuge, and/or breed on site in the future. Domestic dogs and coyotes were observed within the survey area and could pose as a potential threat to BUOW if the species occupies the site in the future.

A total of 17 bird species were observed during surveys as listed in Appendix B. Observations of special-status species observed on site were submitted to the California Natural Diversity Database and are presented in Appendix C. Surveyor field notes are presented in Appendix D.

5 BURROWING OWL AVOIDANCE AND MINIMIZATION

Due to the presence of suitable habitat, pre-construction take avoidance surveys should be conducted in accordance with the CDFW guidelines at least 14 days and 24 hours prior to ground

disturbing activities. If BUOW are documented during pre-construction surveys, CDFW shall be consulted to determine proper avoidance and minimization and/or mitigation measures.

6 CONCLUSIONS

No BUOW, active burrows, or BUOW sign were documented within the project site or survey buffer during the BUOW breeding season surveys conducted between April 8, 2024, and June 25, 2024. The absence of BUOW during the peak breeding season suggests that the project site is not currently used by BUOW for nesting; however, the site could be used for foraging and/or refuge outside of the breeding season. Due to the presence of suitable habitat, pre-construction take avoidance surveys would be required to avoid potential direct impacts on BUOW resulting from the project.

7 REFERENCES

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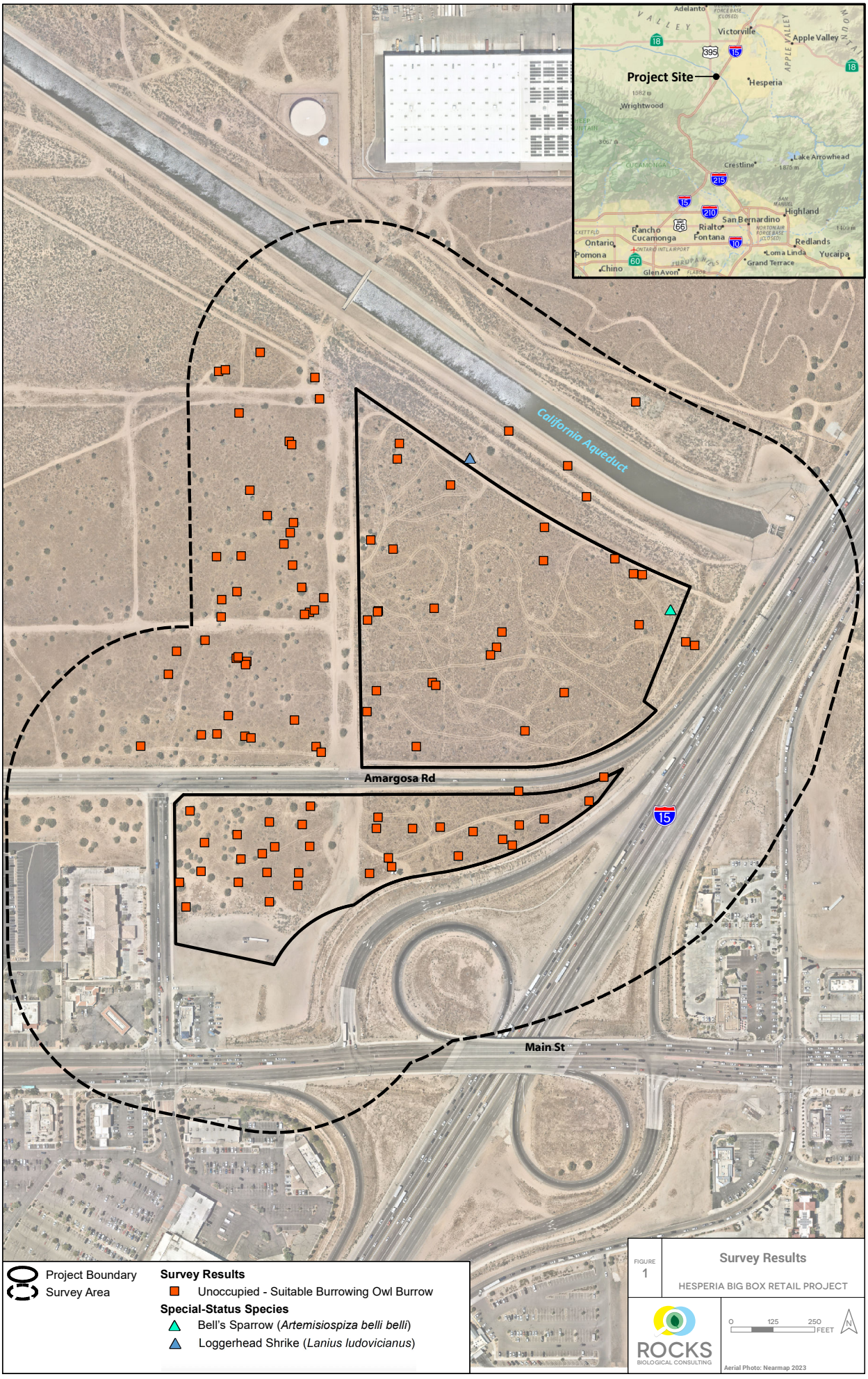

Project Site
Adelanto
Victorville
Apple Valley
Hesperia
Wrightwood
Lake Arrowhead
Crestline
Highland
San Bernardino
Rancho Cucamonga
Rialto
Fontana
Ontario
Pomona
Chino
Glen Avon
Redlands
Loma Linda
Grand Terrace
Yucaipa
California Aqueduct
Amargosa Rd
Main St
15
Project Boundary
Survey Area
Survey Results
Unoccupied - Suitable Burrowing Owl Burrow
Special-Status Species
Bell's Sparrow (Artemisiospiza belli belli)
Loggerhead Shrike (Lanius ludovicianus)
FIGURE 1
Survey Results
HESPERIA BIG BOX RETAIL PROJECT
ROCKS BIOLOGICAL CONSULTING
0 125 250 FEET
N
Aerial Photo: Nearmap 2023

APPENDIX A

SITE PHOTOGRAPHS

Appendix A

Site Photographs

Photo 1. Representative view of disturbed California juniper and Joshua tree woodlands (background) within the project site. Photo taken on April 8, 2024, facing north.

Photo 2. Representative view of disturbed Joshua tree woodlands within the project site. Photo taken on April 8, 2024, facing south.

Photo 3. Representative view of dense herbaceous layer dominated by non-native mustards and grasses (foreground). Photo taken May 6, 2024, facing northeast.

Photo 4. View of a California ground squirrel burrow suitable for BUOW occupation that is obscured by dense non-native grasses and mustards. Photo taken on May 6, 2024.

Photo 5. Representative view of disturbed Joshua tree woodlands within the project site. Photo taken on May 30, 2024, facing east.

Photo 6. Representative view of disturbed rubber rabbitbrush scrub and Joshua tree woodland (background) within the project site. Photo taken on June 25, 2024, facing west.

Photo 7. View of dense non-native mustards present within some portions of the project site. Photo taken on June 25, 2024, facing north.

Photo 8. View of a California ground squirrel burrow complex suitable for BUOW occupation that is located at the base of a box-thorn shrub with no herbaceous cover obscuring burrow entrances. Photo taken on June 25, 2024.

APPENDIX B

BIRD SPECIES OBSERVED

Appendix B

Bird Species Observed

Common Name	Scientific Name
Anna's hummingbird	*Calypte anna*
Bell's sparrow[1]	*Artemisiospiza belli*
Cactus wren	*Campylorhynchus brunneicapillus*
Horned lark	*Eremophila alpestris*
California quail	*Callipepla californica*
Common raven	*Corvus corax*
House finch	*Haemorhous mexicanus*
House sparrow*	*Passer domesticus*
Killdeer	*Charadrius vociferus*
Loggerhead shrike[2]	*Lanius ludovicianus*
Mourning dove	*Zenaida macroura*
Northern mockingbird	*Mimus polyglottos*
Red-tailed hawk	*Buteo jamaicensis*
Rock pigeon*	*Columba livia*
Say's phoebe	*Sayornis saya*
Turkey vulture	*Cathartes aura*
White-crowned sparrow	*Zonotrichia leucophrys*

Notes:
*Non-native/introduced species
[1]CDFW Waitlist (WL) species
[2]CDFW Species of Special Concern (SSC)

APPENDIX C

CALIFORNIA NATURAL DIVERSITY DATABASE ONLINE FIELD SURVEY FORM REPORTS

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code CON24F0001
Quad code 3411744
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Artemisiospiza belli belli*

Common name: Bell's sparrow

Date of field work (mm-dd-yyyy): 05-07-2024

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Rocks Biological Consulting

Affiliation:

Address: 4312 Rialto St. , San Diego, CA 92107

Email: info@rocksbio.com

Phone: (619) 701-6798

Other observers:

DETERMINATION

Keyed in: Sibley Birds of North America

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 1

Collection? **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	unknown
1				

Age class comment:

Bird site use:

☐ Nesting ☐ Rookery ☐ Nesting colony ☐ Burrow site ☐ Lek

☐ Non-breeding (over-wintering) ☐ Communal roost ☑ Other

Site use description: Individual observed foraging

What was the observed behavior? Foraging

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description:

Slope: Land owner/manager:

Aspect:

Site condition + population viability:

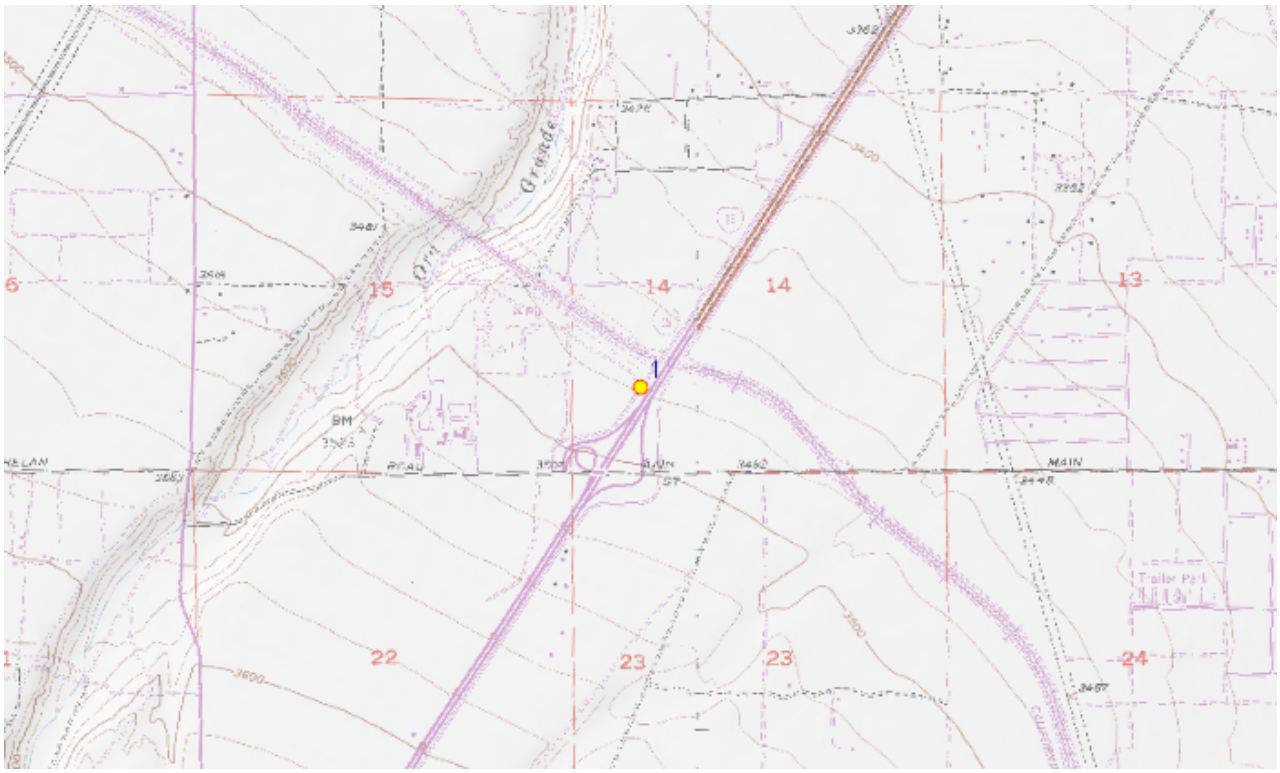
Immediate & surrounding land use:

Visible disturbances:

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Bernardino	Baldy Mesa	3482	34.43002	-117.37857	465216	3809903	11
1	**Public Land Survey**	**Feature Comment**						
	S T04N R05W 14							

The mapped feature is accurate within: 500 m

Source of mapped feature: GPS

Mapping notes:

Location/directions comments:

Attachment(s):

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code CON24F0002
Quad code 3411744
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Lanius ludovicianus*

Common name: loggerhead shrike

Date of field work (mm-dd-yyyy): 05-30-2024

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Rocks Biological Consulting

Affiliation:

Address: 4312 Rialto St. , San Diego, CA 92107

Email: info@rocksbio.com

Phone: (619) 701-6798

Other observers:

DETERMINATION

Keyed in: Sibley Birds of North America

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 6

Collection? **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	unknown
2	4			

Age class comment: Four fully flight capable fledglings observed following adults around the site and begging for food

Bird site use:

☑ **Nesting** ☐ **Rookery** ☐ **Nesting colony** ☐ **Burrow site** ☐ **Lek**

☐ **Non-breeding (over-wintering)** ☐ **Communal roost** ☐ **Other**

Site use description:

What was the observed behavior? Perched and foraging; Fledglings observed following adults and begging for food

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description:

Slope: Land owner/manager:

Aspect:

Site condition + population viability:

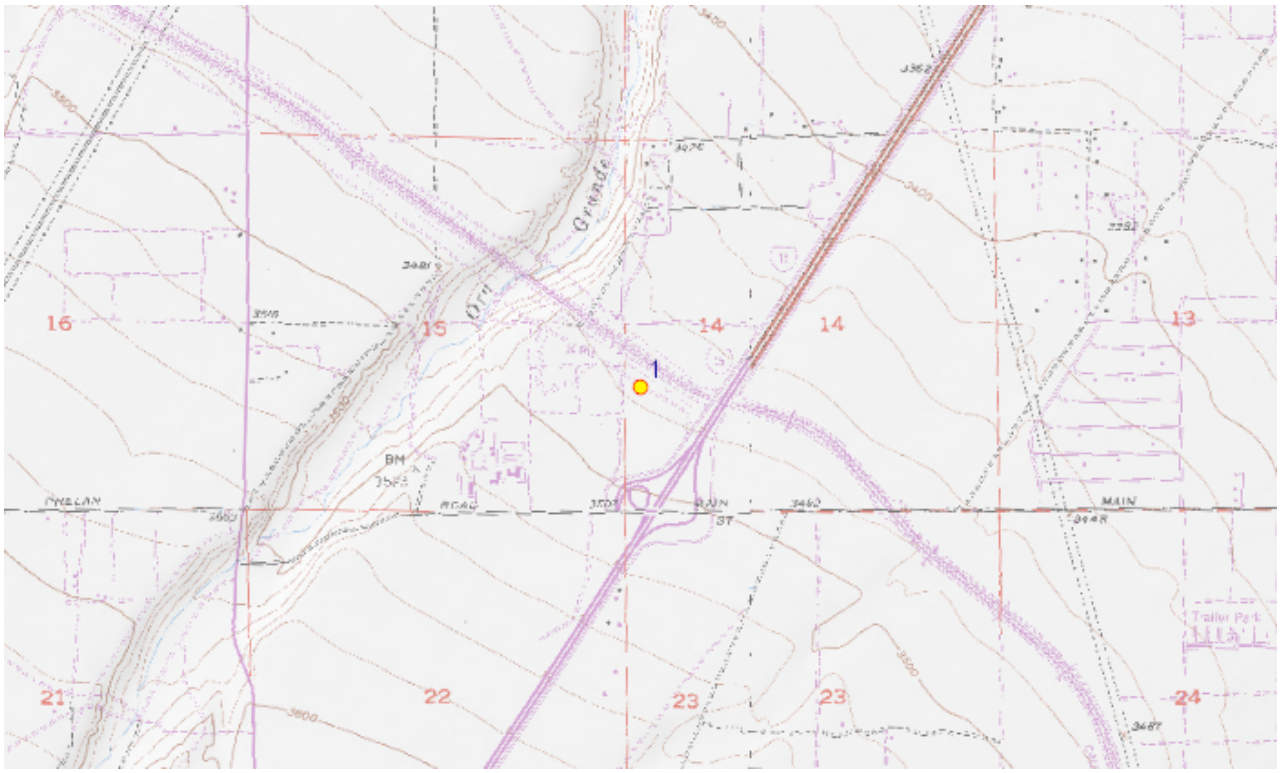
Immediate & surrounding land use:

Visible disturbances:

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Bernardino	Baldy Mesa	3478	34.43153	-117.38109	464986	3810071	11
1	**Public Land Survey**	**Feature Comment**						
	S T04N R05W 14							

The mapped feature is accurate within: 500 m

Source of mapped feature: GPS

Mapping notes:

Location/directions comments:

Attachment(s):

APPENDIX D

SURVEYOR FIELD NOTES

Hesperia Big Box Retail Project

Burrowing Owl Survey

10/15	411	1-3	0%	
10/15	419	3-8	0%	

CDFW WCSP FWOSP CHAC BO Habitat BO Sign

RTHA LOSH

Grayia spinosa, CHAG-S on LOSH, one adult perched in shrub

CHAG-S activity in northern buffer of aqueduct.

CHAG-S Activity in Southern portion of project

Encampments in SW buffer.

No BO or Sign

4/8/24 ~~Hesperia Big Box Retail Project~~ BUOW #1

4:45AM - 12:00PM

	TIME	TEMP	WIND	CC
START	7:15AM	41	1-3	01
END	10:00AM	49	3-8	01

WILDLIFE:

COEA, WCSP, HGSP, ~~GAGW~~, ~~GAWP~~, CACW, HOFI, BESP, RTHA, LOSH, CAGS IN THE ~~DISTANCE~~ NORTHERN BUFFER ACROSS AQUADUCT, SOUTHERN PROJECT AREA

HOMELESS ENCAMPMENTS SW BUFFER

NO BUOW CP SIGN

Hesperia Big Box Retail Project

AG | | | BUOW #2 | 5/7
KW | 0700 | 52 | 1-3 | 0%
| 0945 | 63 | 0-3 | 0%
CARA | HOUM | kill | HDFT | CAQU | HOST
BESP | ROOI | YOWA | CACW | MOPO | AMPI
SAPH

CAOS activity @ burrows alarm calls.
~ 10 new burrows

Stick nest in YUBR. Probably rare
- Rarer nesting across street
Gravid spinose

No BUOW or sign

Hesperia Big Box Retail Project

5/7/24 BUOW #2

0700 52°

0945 63° 0-3 0d°
0-3 0o1°

CORA HOLA* KILL HOFI
CAQU HOSP BESP* ROPI
NOMO CACW LOSH* MODO
SAPH ANHU

* SURVEY NEGATIVE FOR BUOW & SIGN

CAGS AUCO

*BESP n=1 in Lycium sp perched
* HOLA n=1 on ground, foraging
* LOSH n=1 perched in JUNCAL

Cal ENV
5/9/24
900
1200

Hesperia Big Box Retail Project

A5 @ #3 5/30

HS #6 0745 67 1-3 0%
0900 76 0-3 0%

CORA Hosp Rapt Mod Sapt Chuk
ANTV Mono Lush Chaw

Dogs activity!
Coyote
Gbwhiptail
Larrea tridentata

#CNDDB: Lusk, 4 likely
early Pleistocene and Archaic
or buried w/ fence on
W side & protect

-No new burrows
-No Burrow or Scat

-Encampments in Eastern half

5/30 ~~Hesperia Big Box Retail Project~~ BUOW #3

5:00AM - 2:00PM

	TIME	TEMP	WIND	CC
START	7:45AM	67	2-4	0%
END	10:00AM	76	0-3	0-1

WILDLIFE.

MOOO, COYOTE, GB WHIP, ROPI, CORA, SAPH, ANHU, CAWR,

NO BUOW, NEW BURROWS OR SIGN

Hesperia Big Box Retail Project BUOW #4

Date: 6/25/2024
Biologists: AG, GM

Start: 0845, 82F, 3-5 mph winds, 10% CC
End: 1030, 88, 3-5 mph winds, 5% CC

Species Observed:
Reptiles: red racer, Great Basin whiptail, yellow-backed spiny lizard
Birds: HOFI, CORA, NOMO, LOSH, TUVU, HOSP, MODO, HOLA, CACW, CAQU
Mammals: CAGS, AGS, desert cottontail

Notes:

- No BUOW or their sign were observed within the project site or survey buffer.
- CACW adults and 2 fledglings were flushed from a nest located in a Joshua tree within the project site.
- Inactive CORA nest observed in a Joshua tree within the survey buffer west of the project site.

Hesperia Big Box Retail Project

AG — BLOW BY 6/25

GM	845	82	3-5	10%	
	1030	88	5-10	11	
COHA	HORSE	ANTH	NUMO	LOSA*	CACW
CAQU	MODO	HOSP			

CAGS; New Carrid digs; AGS!
SBLi; Cowhwhip; GBurrp; Yellow bracted gol

LOSA; 34.4 3/75 — 17.3 8 0 10 6

CACW; west, 4 individuals

APPENDIX H

HESPERIA BIG BOX RETAIL PROJECT PROTOCOL PRESENCE/ABSENCE 2025 SURVEY REPORT FOR BURROWING OWL (*ATHENE CUNICULARIA*)

ROCKS
BIOLOGICAL CONSULTING

HESPERIA BIG BOX RETAIL PROJECT

PROTOCOL PRESENCE/ABSENCE 2025 SURVEY REPORT FOR BURROWING OWL (*Athene cunicularia*)

San Bernardino County, California

July 11, 2025

Prepared for:
Kimley-Horn and Associates
1100 W Town and Country Road, Suite 700
Orange, CA 92868
(619) 234-9411

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Table 1. Burrowing Owl Survey Dates and Conditions 3

FIGURES

Figure 1. Survey Results

APPENDICES

Appendix A – Site Photographs
Appendix B – Bird Species Observed
Appendix C – California Natural Diversity Database Online Field Survey Form Reports
Appendix D – Surveyor Field Notes

1 SUMMARY

This report is a summary of the results of focused burrowing owl (*Athene cunicularia*; BUOW) surveys Rocks Biological Consulting (RBC) conducted for the Hesperia Big Box Retail Project (project) in the City of Hesperia, San Bernardino County, California, in accordance with the California Department of Fish and Wildlife (CDFW) *Staff Report on Burrowing Owl Mitigation* (Guidelines; CDFW 2012).

The project is located within the San Bernardino County Burrowing Owl Overlay Zone. Based on the presence of suitable habitat, RBC conducted focused breeding season BUOW surveys between February 24, 2025, and June 17, 2025. RBC observed one individual BUOW and sign at one occupied burrow within the project site.

2 INTRODUCTION

2.1 PROJECT LOCATION

The survey area (project and 500-foot buffer) is located in the City of Hesperia, San Bernardino County, California (Figure 1).The project site is located directly south of the California Aqueduct, east of Key Pointe Avenue, northwest of Interstate (I)-15, and north of Main Street. The project site is bisected by Amargosa Road. The site Assessor Parcel Numbers (APNs) include 040506272, 040506273, 306448106, and 306448107.

2.2 PROJECT DESCRIPTION

The project proposes the development of an approximately 25-acre site bisected by Amargosa Road. A wholesale big box retail center and associated parking would be constructed north of Amargosa Road, and a fuel station, office building, and carwash facility would be constructed south of Amargosa Road. The proposed project would also include installation of hardscape, landscaping, and utility improvements to service both the retail center and fuel station.

2.3 BURROWING OWL NATURAL HISTORY

Burrowing owl is currently a candidate for listing under the California Endangered Species Act (CESA) as of October 10, 2024. As such, BUOW is afforded the same protections as a state-listed endangered or threatened species (CDFW 2024).

In California, habitat for BUOW is generally typified by short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils, such as naturally occurring grassland, shrub steppe, and desert habitats (Haug et al. 1993). Additionally, BUOW may occur in agricultural areas, ruderal grassy fields, vacant lots, and pastures containing suitable vegetation structure and useable burrows and foraging habitat in proximity (Gervais et al. 2008). Typically, BUOW use burrows that have been dug by other species. In California, BUOW frequently use burrows dug by California ground squirrel (*Otospermophilus beecheyi*) and round-tailed ground squirrel (*Citellus tereticaudus*) and dens or holes dug by other fossorial species, including American badger (*Taxidea taxus*), coyote (*Canis latrans*), and fox (e.g., San Joaquin kit fox [*Vulpes macrotis mutica*]) (Ronan 2002). In

addition, BUOW also frequently use natural rock cavities, debris piles, culverts, and pipes for nesting and roosting (Rosenberg et al. 1998) and have been documented using artificial burrows for nesting and cover (Belthoff and Smith 2003). Occupancy of BUOW habitat is confirmed at a site when at least one BUOW, or its sign at or near a burrow entrance, is observed within the last three years (Rich 1984).

3 METHODS

RBC biologists Alec Goodman, Hannah Swarthout, Imran Badar, Melissa Tamarkin, and Oliver Putnam conducted the breeding season BUOW surveys for the project. Mr. Goodman is a senior biologist with over nine years of experience in environmental consulting and holds a Bachelor of Science degree in Environmental Science. Ms. Swarthout is a wildlife biologist with over four years of environmental consulting experience and a Bachelor of Arts degree in Environmental Studies and a minor in Geography. Mr. Putnam is a biologist with two years of professional experience and holds a Bachelor of Science in agricultural and environmental plant science. Mr. Badar and Ms. Tamarkin are staff biologists with approximately two years and one year of professional experience, respectively. Mr. Badar holds a Bachelor of Science in Wildlife, Fish, and Conservation Biology and Ms. Tamarkin holds a Bachelor of Science in Ecology and Evolutionary Biology. All surveyors have experience conducting focused BUOW surveys; are familiar with the calls, scolds, and alarm calls of BUOW; can identify both adult and juvenile BUOW by plumage characteristics; and can distinguish between fresh and aging BUOW sign.

Four BUOW surveys were conducted during the typical BUOW breeding season (February 1 – August 31). In accordance with CDFW recommendations (CDFW 2012), three of the surveys occurred during the peak of breeding season (April 15 – July 15) at least three weeks apart. The survey area included the project site, as well as all suitable habitat within a 500-foot buffer per CDFW guidance (Figure 1).

RBC biologists walked transects spaced 10-30 meters (30-100 feet) apart through suitable BUOW habitat within the survey area. RBC used binoculars (10x42 magnification) to scan the survey area at least every 100 meters for BUOW, active burrows, and/or sign of BUOW and to aid in the identification of avian species. Care was taken to minimize disturbance near suitable burrows to avoid flushing any potential BUOW. RBC examined all burrows for BUOW sign, including feathers, pellets, whitewash, and/or prey remains. Burrows were considered active if a BUOW was observed at or near the entrance or if recent sign was present. Burrowing owls, active burrows, and BUOW sign were mapped in the geographic information system (GIS) program ArcGIS Field Maps, if observed.

4 RESULTS

4.1 EXISTING CONDITIONS & HABITAT ASSESSMENT

The project site is primarily composed of Joshua tree (*Yucca brevifolia*) woodland and disturbed California juniper (*Juniperus californica*) tree woodland. Small areas of disturbed rubber rabbitbrush (*Ericameria nauseosa*) scrub and disturbed land are also present along the interior borders of the project site. The topography of the project site is generally flat with minimal changes in elevation.

Vacant lots and commercial developments border the project site to the west and south and smaller undeveloped areas border the project site to the north and east. Open spaces abutting the project site are composed of disturbed rubber rabbitbrush scrub, disturbed Joshua tree woodland, and disturbed land.

Vegetation throughout the survey area was variable, resulting in disparate degrees of habitat suitability. Sparse trees and shrubs are scattered throughout the survey area and comprise a lower percentage of total vegetative cover in comparison to herbaceous species. The dense herbaceous layer was dominated by non-native mustards and grasses, including black mustard (*Brassica nigra*), London rocket (*Sisymbrium irio*), red brome (*Bromus rubens*), and ripgut brome (*Bromus diandrus*). Portions of the survey area which were composed of dense one-meter tall patches of black mustard were deemed unsuitable for BUOW occupation. Additionally, a portion of the California ground squirrel burrows throughout the survey area were obscured by tall, dense non-native grasses and, as a result, were unlikely to become occupied by BUOW in their current state. A greater number of suitable unoccupied BUOW burrows were located at the base of California junipers where established California ground squirrel burrow complexes were present with no-to-low herbaceous cover.

Photographs of the survey area are presented in Appendix A.

4.2 BURROWING OWL SURVEY RESULTS

RBC conducted four focused BUOW surveys during the breeding season between February 24, 2025, and June 17, 2025. Survey dates, times, personnel, and weather conditions are presented in Table 1, below. Climatic and temporal conditions during surveys were suitable for BUOW observation.

Table 1. Burrowing Owl Survey Dates and Conditions

Survey Number	Date	Surveyor(s)	Time (Start- End)	Temp. (F) (Start- End)	Cloud Cover (%) (Start- End)	Wind Range (mph) (Start; End)	Precip. (Low, Med, High) (Start- End)	Visibility (Low, Med, High) (Start; End)
1	02/24/25	HS, IB, MT	1530-1750	74-68	1	5-8; 1-3	None	High
	02/25/25	HS, IB, MT	1300-1340	55-55	0	1-3; 1-3	None	High
2	04/22/25	AG, OP, MT	0630-0800	52-60	0-0	1-3; 1-3	None	High
3	05/22/25	OP, IB, MT	0600-0720	59-66	10-10	2-5; 1-3	None	High
4	06/17/25	OP, IB, MT	0720-0920	73-81	0-0	1-3; 2-5	None	High
AG = Alec Goodman, OP = Oliver Putnam, HS = Hannah Swarthout, IB = Imran Badar, MT = Melissa Tamarkin								

During survey one, on February 24, 2025, RBC biologists flushed one adult BUOW from an occupied burrow within the project site and observed whitewash and pellets near the burrow entrance (Figure 1, Appendix A). Whitewash was also observed on the occupied burrow during the second and fourth surveys; however, pellets or other sign indicative of an active breeding burrow were not observed.

In addition, numerous unoccupied small mammal burrows suitable for BUOW were observed during surveys (Figure 1). Stray dogs and transient encampments were observed throughout the survey area and could pose as a threat to BUOW occupying the site. Representative site photographs are presented in Appendix A, and a list of the 15 bird species observed during focused surveys is presented in Appendix B. Observations of special-status species observed on site were submitted to the California Natural Diversity Database and are included as Appendix C. Surveyor field notes are presented in Appendix D.

5 BURROWING OWL AVOIDANCE, MINIMIZATION, AND MITIGATION

Due to the presence of BUOW and suitable habitat on the project site, pre-construction take avoidance surveys should be conducted in accordance with the CDFW guidelines at least 14 days and within 24 hours prior to ground disturbing activities. Furthermore, a CESA Incidental Take Permit (ITP) should be applied for and obtained prior to the commencement of project activities. The ITP shall describe, at a minimum, project activities and equipment, proposed avoidance/buffers, temporary and permanent impacts, monitoring, relocation and/or translocation, and minimization and compensatory mitigation actions. ITP compensatory mitigation would be fulfilled by one or more of following options: 1) Conservation or Mitigation Bank credits (if available), 2) Mitigation Credit Agreements, or 3) Permittee-responsible mitigation land acquisition.

If BUOW is documented on site or within 500-feet of the site during either pre-construction surveys or biological monitoring, CDFW shall be contacted within 48 hours of the BUOW observation and all applicable conditions of the ITP shall be strictly adhered to.

6 CONCLUSIONS

RBC documented one adult BUOW, one active burrow with BUOW sign, and numerous suitable unoccupied BUOW burrows within the survey area during the breeding season surveys conducted between February 24, 2025, and June 17, 2025. Due to the presence of BUOW on the project site, pre-construction take avoidance surveys would be required to avoid potential direct impacts on BUOW resulting from the project and a CESA ITP should be obtained prior to the commencement of project activities.

7 REFERENCES

Belthoff, J.R. and B.W. Smith. 2003. Patterns of artificial burrow occupancy and reuse by burrowing owls in Idaho. Wildlife Society Bulletin, pp.138-144.

California Department of Fish and Wildlife. 2012. Staff Report on Burrowing Owl Mitigation. Retrieved June 2025, from https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843.

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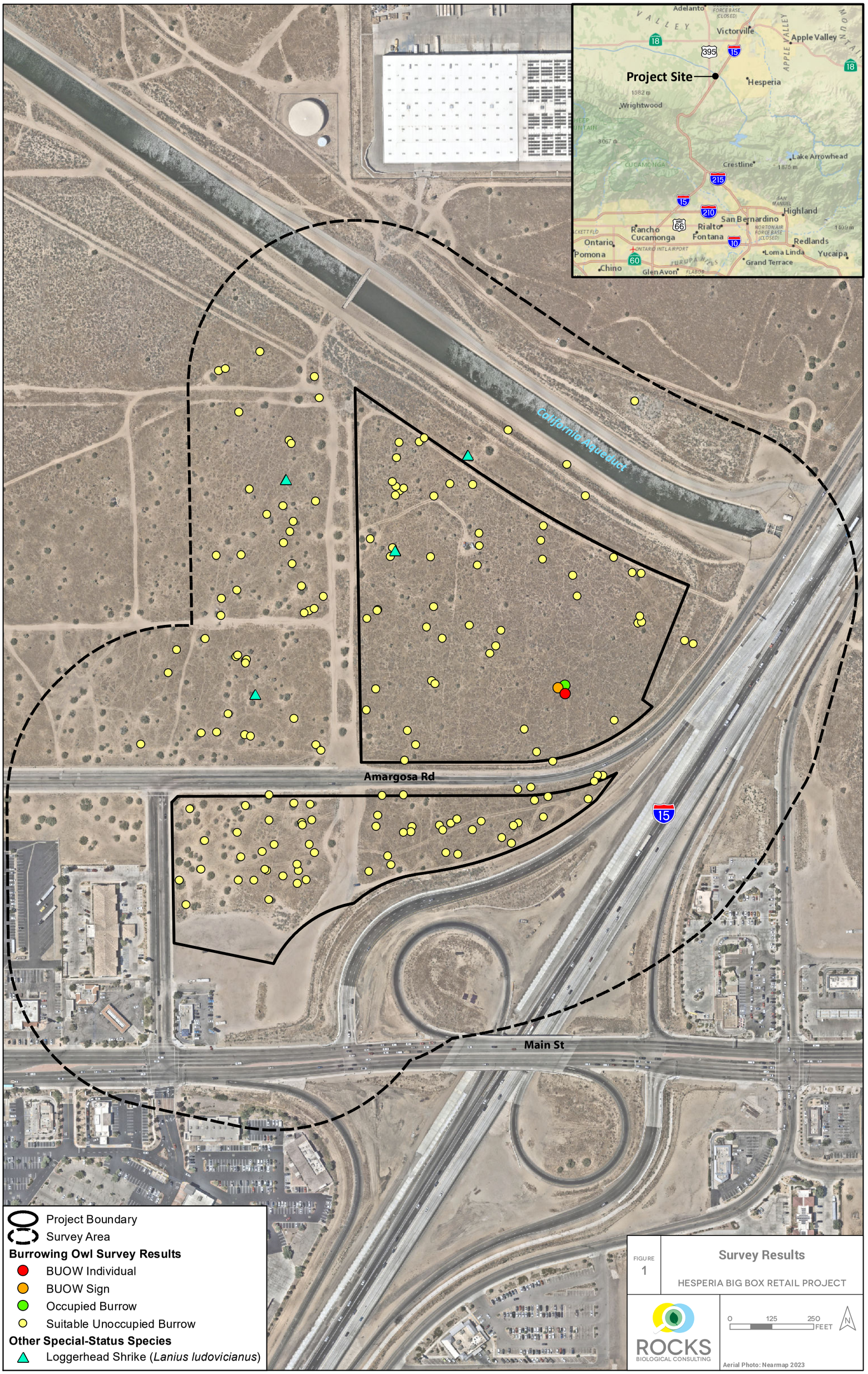
Gervais, J.A., D.K. Rosenberg, and L.A. Comrack. 2008. Burrowing owl (*Athene cunicularia*) in W.D. Shuford and T. Gardali, editors. California Bird Species of Special Concern: A ranked assessment of species, subspecies and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento, California, USA.

Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. Burrowing owl (*Speotyto cunicularia*), in A. Poole and F. Gill, editors, The Birds of North America, The Academy of Natural Sciences, Philadelphia, Pennsylvania, and The American Ornithologists' Union, Washington, D.C., USA.

Rich, T. 1984. Monitoring burrowing owl populations: implications of burrow re-use. Wildlife Society Bulletin 12: 178-189.

Ronan, N.A. 2002. Habitat selection, reproductive success, and site fidelity of burrowing owls in a grassland ecosystem. Thesis, Oregon State University, Corvallis, Oregon, USA.

Rosenberg, D.K., J.A. Gervais, H. Ober, and D.F. DeSante. 1998. An adaptive management plan for the burrowing owl population at Naval Air Station Lemoore, California, USA. Publication 95, Institute for Bird Populations, P.O. Box 1346, Pt. Reyes Station, CA 94956.


Project Site
Victorville
Apple Valley
Hesperia
Wrightwood
Crestline
Lake Arrowhead
San Bernardino
Highland
Rialto
Fontana
Rancho Cucamonga
Ontario
Pomona
Chino
Glen Avon
Redlands
Loma Linda
Yucaipa
Grand Terrace
California Aqueduct
Amargosa Rd
Main St
15
Project Boundary
Survey Area
Burrowing Owl Survey Results
BUOW Individual
BUOW Sign
Occupied Burrow
Suitable Unoccupied Burrow
Other Special-Status Species
Loggerhead Shrike (Lanius ludovicianus)
FIGURE
1
Survey Results
HESPERIA BIG BOX RETAIL PROJECT
ROCKS
BIOLOGICAL CONSULTING
0
125
250
FEET
N
Aerial Photo: Nearmap 2023

APPENDIX A

SITE PHOTOGRAPHS

Appendix A

Site Photographs

Photo 1. View of Joshua tree woodland north of Amargosa Road from the center of the survey area, facing west. February 24, 2025.

Photo 2. View of occupied burrowing owl (*Athene cunicularia*) burrow with whitewash and pellets (yellow arrows) within the southeastern portion of the survey area, north of Amargosa Road, facing southeast. February 24, 2025.

Photo 3. View of disturbed California juniper woodland within the eastern portion of the survey area, south of Amargosa Road, facing north. April 22, 2025.

Photo 4. View of a canid den within the northeast portion of the survey area, north of Amargosa Road, facing southwest. June 17, 2025.

Photo 5. View of disturbed California juniper woodland from the southwest corner of the survey area, north of Amargosa Road, facing north. May 22, 2025.

Photo 6. View of disturbed rubber rabbitbrush scrub within the western portion of the survey area, south of Amargosa Road, facing southeast. June 17, 2025.

Photo 7. View of disturbed California juniper woodland within the northwestern survey buffer, facing northwest. June 17, 2025.

Photo 8. View of transient human activity present throughout the survey area, facing northwest. February 24, 2025.

APPENDIX B

BIRD SPECIES OBSERVED

Appendix B
Bird Species Observed

Family	Scientific Name	Common Name
Alaudidae	*Eremophila alpestris*	Horned lark
Anatidae	*Anas platyrhynchos*	Mallard
Charadriidae	*Charadrius vociferus*	Killdeer
Columbidae	*Columba livia*	Rock pigeon*
Corvidae	*Corvus corax*	Common raven
Fringillidae	*Haemorhous mexicanus*	House finch
Laniidae	*Lanius ludovicianus*	Loggerhead shrike (SSC)
Laridae	*Larus californicus*	California gull (WL)
Mimidae	*Mimus polyglottos*	Northern mockingbird
Passerellidae	*Zonotrichia leucophrys*	White-crowned sparrow
Passeridae	*Passer domesticus*	House sparrow*
Phalacrocoracidae	*Nannopterum auritum*	Double-crested cormorant
Strigidae	*Athene cunicularia*	Burrowing owl (SC; SSC)
Troglodytidae	*Campylorhynchus brunneicapillus*	Cactus wren
Tyrannidae	*Sayornis saya*	Say's phoebe

SC: State Candidate for listing under CESA
SSC: CDFW Species of Special Concern
WL: CDFW Watch List Species
*Introduced species

APPENDIX C

CALIFORNIA NATURAL DIVERSITY DATABASE ONLINE FIELD SURVEY FORM REPORTS

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code TAM25F0001
Quad code 3411744
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Athene cunicularia*

Common name: burrowing owl

Date of field work (mm-dd-yyyy): 02-24-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Melissa J. Tamarkin

Affiliation: Rocks Biological Consulting

Address:

Email: melissa@rocksbio.com

Phone: (760) 994-6687

Other observers: Hannah Swarthout

DETERMINATION

Personal expertise:

Keyed in:

Compared w/ specimen at:

Compared w/ image in: Merlin

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort: Protocol Focused Breeding Burrowing Owl Survey

Total number of individuals: 1

Collection? No **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	other
1				

Age class comment:

Bird site use:

☐ Nesting ☐ Rookery ☐ Nesting colony ☑ Burrow site ☐ Lek

☐ Non-breeding (over-wintering) ☐ Communal roost ☐ Other (foraging, fly-over, etc.)

Site use description:

What was the observed behavior? Flushed from occupied burrow

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description: Disturbed Juniper and Joshua Tree Woodland

Slope: Landowner/manager:

Aspect:

Site condition + population viability:

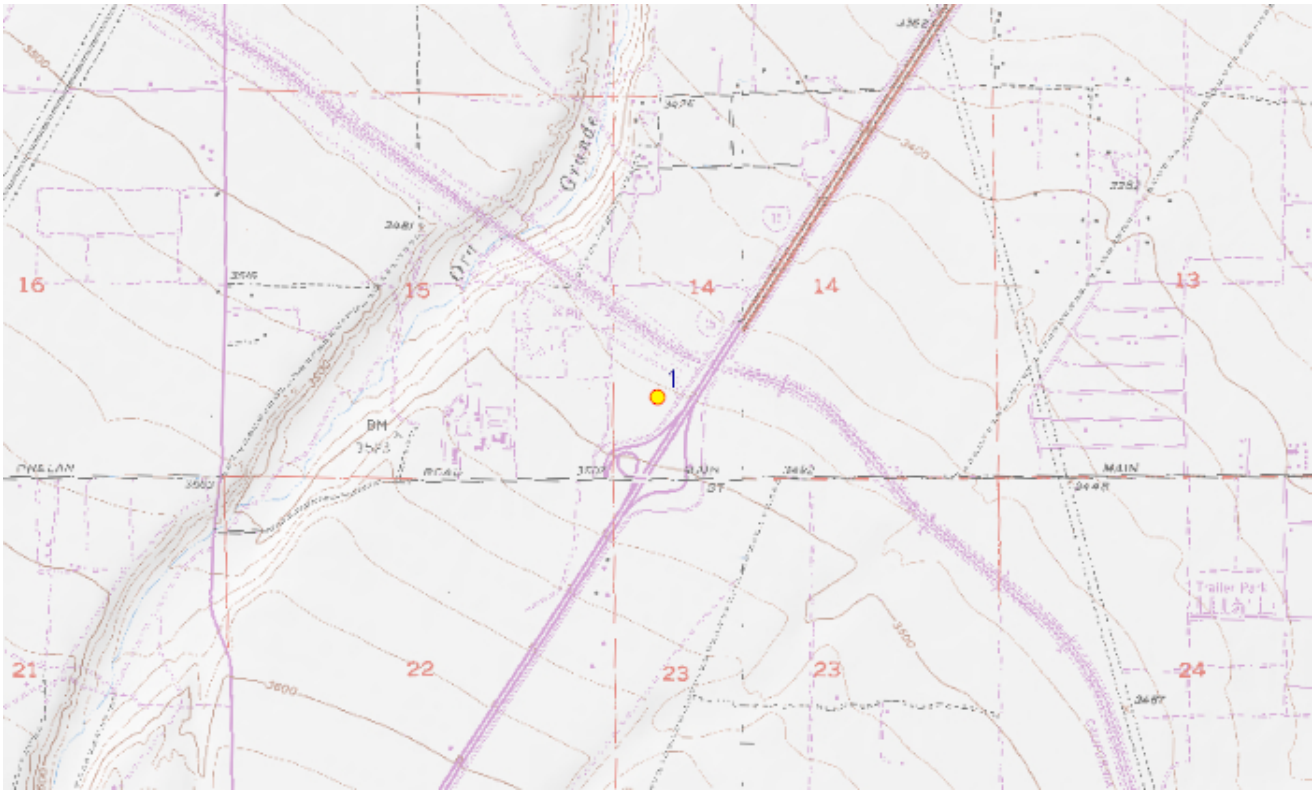
Immediate & surrounding land use:

Visible disturbances: Trash

Threats:

General comments:

MAP INFORMATION



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	Public Land Survey	**Feature Comment**						
1	S T04N R05W 14							

The mapped feature is accurate within: 10 m

Source of mapped feature: FieldMaps ArcGIS Online

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code GOO25F0020
Quad code 3411744
Occ. no.
EO index no.
Map index no.

Scientific name: *Lanius ludovicianus*

Common name: loggerhead shrike

Date of field work (mm-dd-yyyy): 04-22-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Alec Goodman

Affiliation:

Address: 4312 Rialto St. , San Diego, CA 92107

Email: alec@rocksbio.com

Phone: (909) 565-7197

Other observers:

DETERMINATION

Personal expertise: Yes

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 1

Collection? No **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	other
1				

Age class comment:

Bird site use:

☐ **Nesting** ☐ **Rookery** ☐ **Nesting colony** ☐ **Burrow site** ☐ **Lek**

☐ **Non-breeding (over-wintering)** ☐ **Communal roost** ☑ **Other (foraging, fly-over, etc.)**

Site use description: Fly-over

What was the observed behavior? Fly-over around junipers

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description:

Slope: Landowner/manager:

Aspect:

Site condition + population viability:

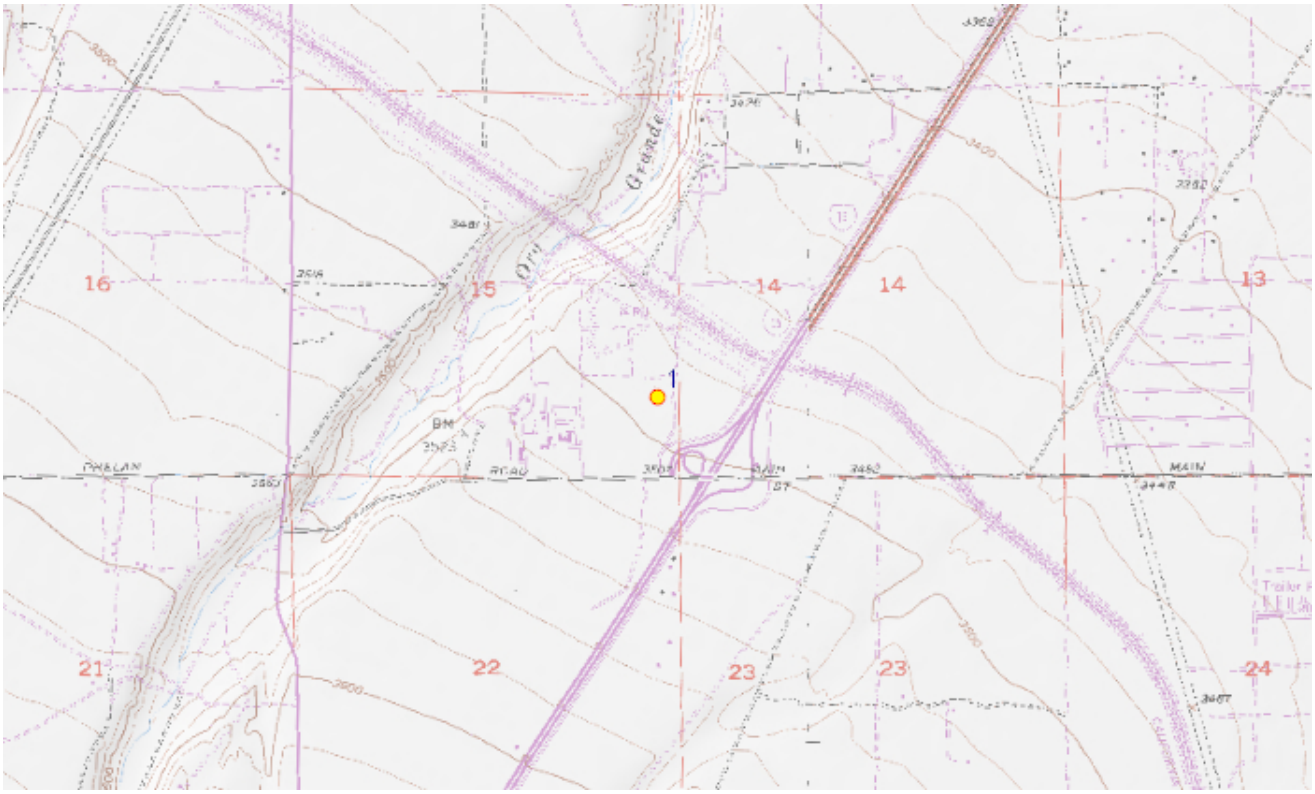
Immediate & surrounding land use:

Visible disturbances:

Threats:

General comments:

MAP INFORMATION



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	S T04N R05W 15							

The mapped feature is accurate within: 5 m

Source of mapped feature: ArcGIS Field Maps Mobile Application

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code BAD25F0011
Quad code 3411744
Occ. no.
EO index no.
Map index no.

Scientific name: *Lanius ludovicianus*

Common name: loggerhead shrike

Date of field work (mm-dd-yyyy): 04-28-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Imran Badar

Affiliation:

Address: 4312 Rialto St. , San Diego, CA 92107

Email: imran@rocksbio.com

Phone: (858) 444-6031

Other observers:

DETERMINATION

Personal expertise: Yes

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 1

Collection? No **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	other
1				

Age class comment:

Bird site use:

☐ Nesting ☐ Rookery ☐ Nesting colony ☐ Burrow site ☐ Lek

☐ Non-breeding (over-wintering) ☐ Communal roost ☑ Other (foraging, fly-over, etc.)

Site use description: Perched on flowering western Joshua tree

What was the observed behavior? Perching

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description:

Slope: Landowner/manager:

Aspect:

Site condition + population viability:

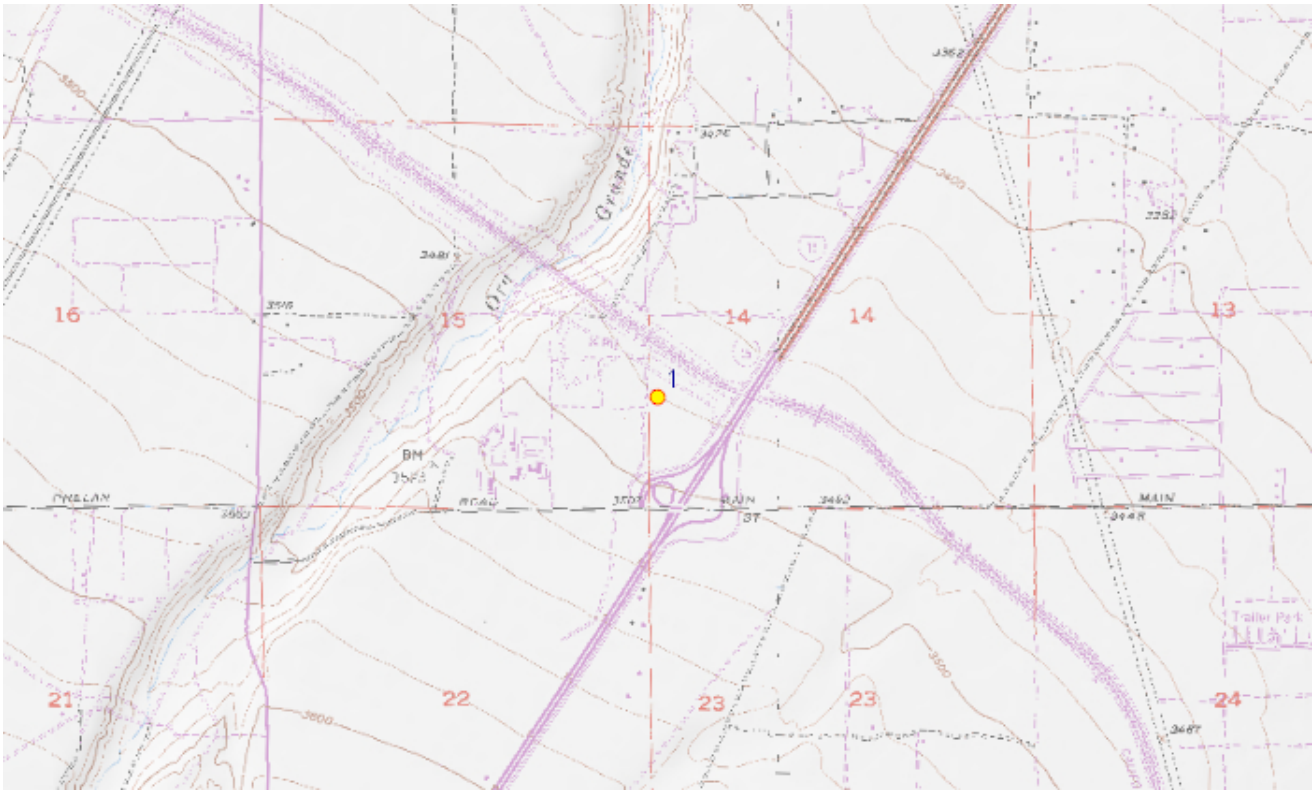
Immediate & surrounding land use:

Visible disturbances:

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
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	Public Land Survey	**Feature Comment**						
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The mapped feature is accurate within: 5 m

Source of mapped feature: ArcGIS Field Maps Mobile App

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code BAD25F0007
Quad code 3411744
Occ. no.
EO index no.
Map index no.

Scientific name: *Lanius ludovicianus*

Common name: loggerhead shrike

Date of field work (mm-dd-yyyy): 05-22-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Imran Badar

Affiliation:

Address: 4312 Rialto St. , San Diego, CA 92107

Email: imran@rocksbio.com

Phone: (858) 444-6031

Other observers:

DETERMINATION

Personal expertise: Yes

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 2

Collection? No **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	other
2				

Age class comment:

Bird site use:

☐ Nesting ☐ Rookery ☐ Nesting colony ☐ Burrow site ☐ Lek

☐ Non-breeding (over-wintering) ☐ Communal roost ☑ Other (foraging, fly-over, etc.)

Site use description: Perched in juniper

What was the observed behavior? Perching

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description:

Slope: Landowner/manager:

Aspect:

Site condition + population viability:

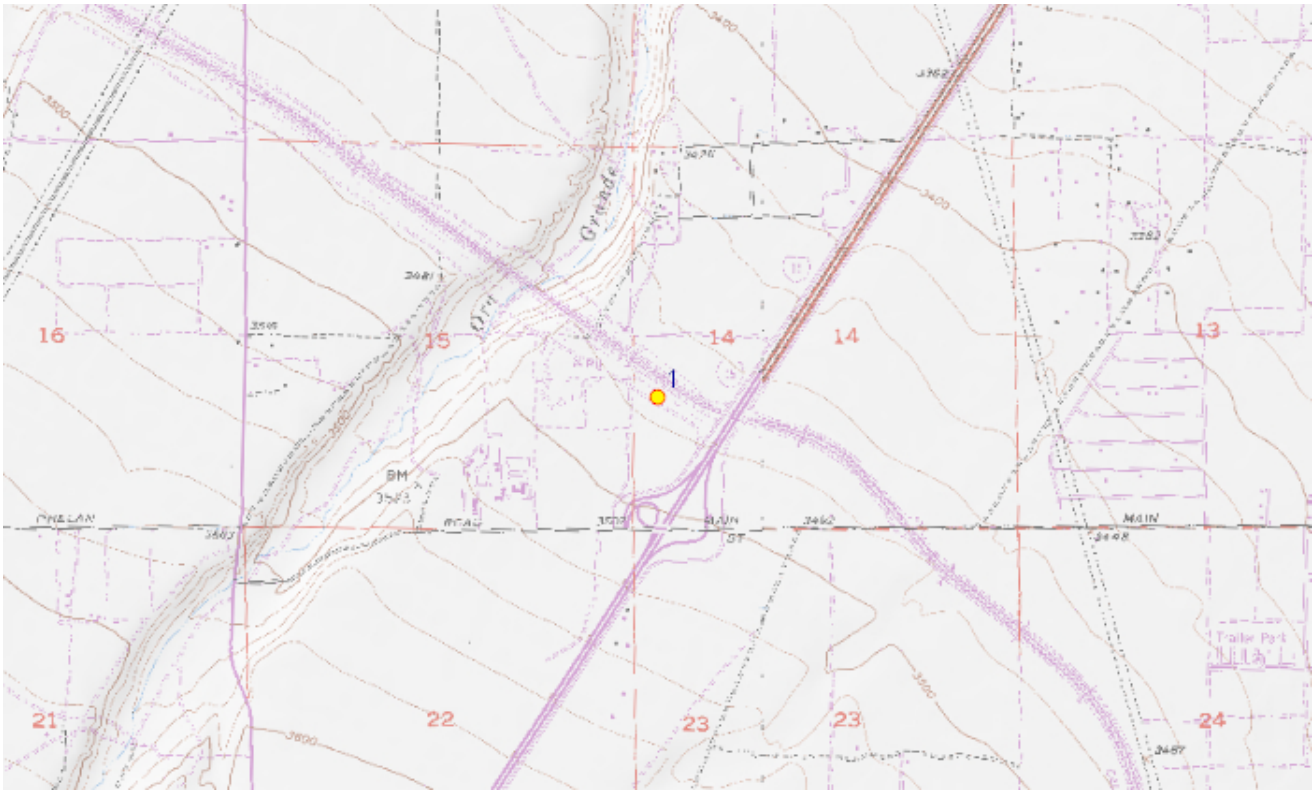
Immediate & surrounding land use:

Visible disturbances:

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Bernardino	Baldy Mesa	3476	34.43168	-117.38071	465021	3810087	11
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	S T04N R05W 14							

The mapped feature is accurate within: 5 m

Source of mapped feature: ArcGIS Field Maps Mobile App

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code BAD25F0012
Quad code 3411744
Occ. no.
EO index no.
Map index no.

Scientific name: *Lanius ludovicianus*

Common name: loggerhead shrike

Date of field work (mm-dd-yyyy): 06-17-2025

Comment about field work date(s):

OBSERVER INFORMATION

Observer: Imran Badar

Affiliation:

Address: 4312 Rialto St. , San Diego, CA 92107

Email: imran@rocksbio.com

Phone: (858) 444-6031

Other observers:

DETERMINATION

Personal expertise: Yes

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other:

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort:

Total number of individuals: 1

Collection? No **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	other
1				

Age class comment:

Bird site use:

☐ Nesting ☐ Rookery ☐ Nesting colony ☐ Burrow site ☐ Lek

☐ Non-breeding (over-wintering) ☐ Communal roost ☑ Other (foraging, fly-over, etc.)

Site use description: Perched on WJT

What was the observed behavior? Perched on WJT

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description:

Slope: Landowner/manager:

Aspect:

Site condition + population viability:

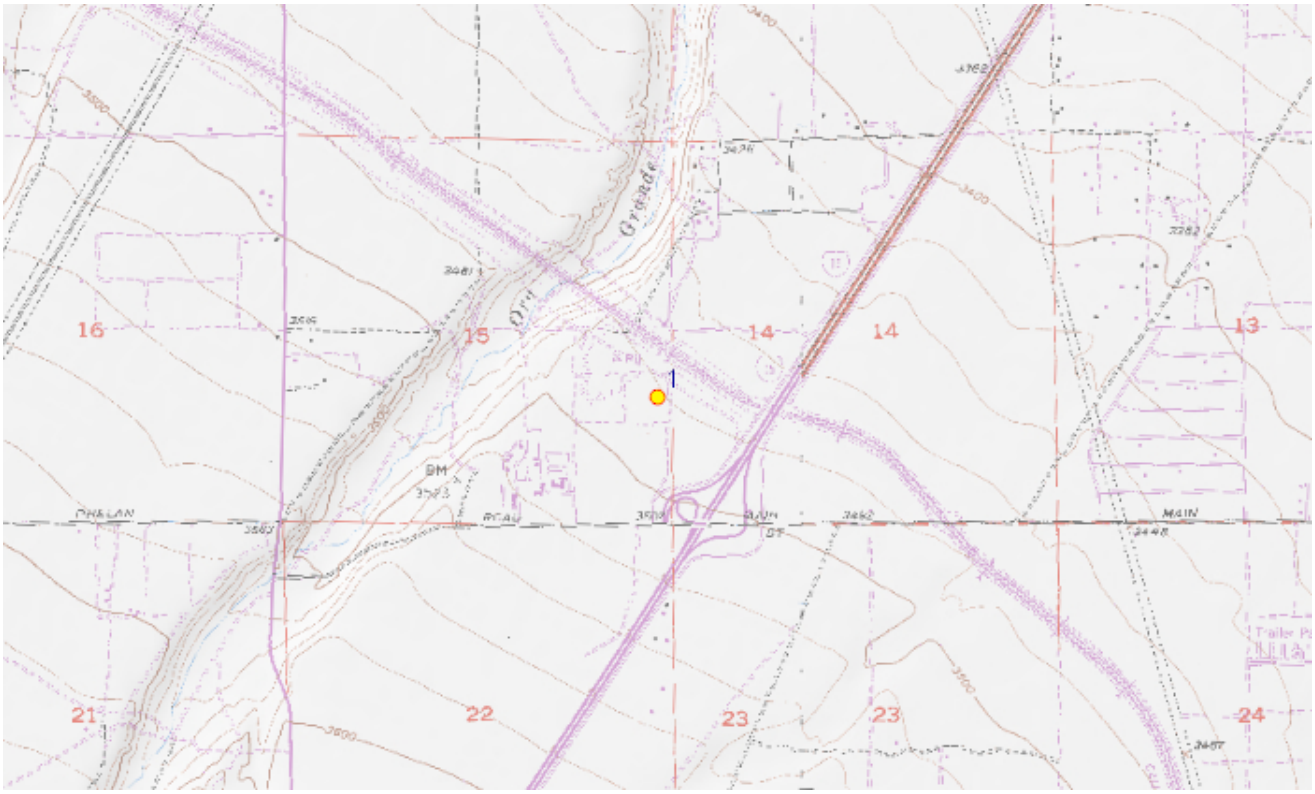
Immediate & surrounding land use:

Visible disturbances:

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
	San Bernardino	Baldy Mesa	3482	34.43149	-117.38251	464855	3810067	11
1	**Public Land Survey**	**Feature Comment**						
	S T04N R05W 15							

The mapped feature is accurate within: 5 m

Source of mapped feature: ArcGIS Field Maps Mobile App

APPENDIX D

SURVEYOR FIELD NOTES

MT, ID HS (DUSK)
BIG Box Hesperia BUOW #1 2/24/2025

	Time	Temp	Wind	CC
Start	1530	74	5-8	1%
End	1750	68	1-3	1%

Walked South/North transects from east to west spaced 20 meters
BUOW Flushed
Occupied BUOW burrow w/ pellet & white wash
Black harvester ants, Coyote scat, Audubon's Cottontail

CORA ROPI CAQW
BUOW HOLA CAGU

ERINAU YUCBRE

People walking through site/buffer
California Ground Squirrel
Binoculars used for northern & western buffers

Scale: 1 square = _____

Rite in the Rain

MT, HS, I B

63

2/25/25 Big Box Hesperia BUOW #1 pt 2

	Time	Temp	Wind	CC
Start	1300	55	1-3	0
End	1340	55	1-3	0

Site revisited due to transient persons at previous visit

New white wash found at Occupied BUOW burrow

More encampments in western buffer

Scale: 1 square = _____

Rite in the Rain

2/24 HESPERIA BIG BOX

12:00 PM - 8:00PM BUOW #1 (HOUSE)

	TIME	TEMP	WIND	
START	3:30pm	74	5-8	1%
END	5:50 PM	68	1-3	1%

SUNSET: 5:41 PM

WILDLIFE:
COHA, ROBI, CACW, HARVEST ANTS, AUDUBON COTTONTAIL, BUOW*, CAGO, CAGU, HOLA,

NOTES:
WALKED N/S TRANSECTS SPACED 20M FROM EAST TO WEST

*FLUSHED FROM OCCUPIED BURROW W/ WHITEWASH & PELLETS - REMOVED SIGN

Scale: 1 square = _____

NOTES (CONT):
LOTS OF TRANSIENT ACTIVITY ESPECIALLY IN SOUTHERN, WESTERN BUFFER. LOTS USING AMARGOSA RD ON THE WESTERN EDGE OF THE PROJECT SITE

BIRD NORTHERN & WESTERN BUFFER

2/25 BIG BOX FOLLOW UP

	TIME	TEMP	WIND CC
START	1:00PM	75	1-3 OF
END	1:40PM	75	1-3 OF

NOTES (CONTINUED):
CHECKED WESTERN BUFFER A LITTLE BY FOOT BUT NOTICED MORE ENCROACHMENTS

NEW WHITE WASH @ KNOWN BUOW RUPRW

Monday feb 24: big box BUOW 1 (dusk)

Imran
Hannah
Melissa
Start: 3:30 pm 74 F 5-8 mph 1%
End: 5:50 pm 68 F 1-3 mph 1%
Sunsets at 5:41 pm

CORA
CAGS
ROPI
BUOW
HOLA
CAGU

BUOW flushed from burrow with sign

Feb 25: big box cont buffer BUOW 1

Start: 1:00 pm 75 F 1-3 mph 0%
End: 1:40 pm 75 F 1-3 mph 0%
New wash present
Transients still around, multiple encampments present in western buffer

MT, AG, OP

Hesperia Big Box Breeding BVOW #12 4/22/25 7

	Time	Temp	Wind	CC
Start	630	52	1-3	0
End	800	60	1-3	0

SAPH CORA MADV OCCO
LOSH CAWR ROPI HOLA
HOFI HOSP KILL WCSP
CAGS Desert cottontail

No BVOW. Sign found on previously active burrow. White wash removed.

Scale: 1 square = _____

Rite in the Rain

AB Big Box Bldg #2 4/22
MT 0630 52 1-3 Gj.
OP 0800 60 1-3 Gj.

security Roman de la tour
760 948 8120
SAPH CORA LOSA. DECO
ROPI MALL HOLA OAZW WCSP
HOSP HOFI KILL

Bldg Bldg, whitewash. B
All sign removed.
New suitable bldgs.
DECO, CATO

Potential Aps pellipen bldgs
in sewer drain @ western
project boundary.

4/22/25 Big Box Burrow survey (2)
OP Alt MT

Start time: 6:30
end time: 8:00
start temp: 52°
end temp: 60°
start cloud cover: 0%
End cloud cover: 0%
Start wind: 0-2
End wind: 1-3

Birds
- Says phoebe
- CORA
- loggerheaded shrike
- Cactus wren
- Double crested cormorant
- rock pigeon
- Mallard
- horned lark
- White crowned sparrow
- house sparrow
- house finch
- killdeer

Removed Sign of active burrow (previously)
Burrow

- cottontail rabbit
- California ground squirrel

B Big box BUOW #3 5/22
MI Start: 600 59°F 2-5mph 10%.
OP End: 720 66°F 1-3 mph 10%.

Stray dog (3)
Lost (needs (NDSB) in Juniper near north of site
ORA
NOMO
Desert Cottontail
Antelope ground squirrel
HOFI
KILL
[redacted]

No BUOW or BUOW sign

Scale: 1 square = _____

Rite in the Rain

Hesperia Big Box Buoy
~~2.25~~ 5.22.25

start time 6:00
clouds: 10%
temp: 54°
wind: ~~1-5~~

Bird list

COSA
LOSH
ADFI
~~AMRO~~
killdeer
NOMO

end time: 7:20
clouds: 10
temp: 66°
wind: ~~1-5~~ 1-3

Oliver Putnam

Scale: 1 square = _____

24 Hesperia Big Box BUOW 05/22/25 MT, OP, IB

	Time	Temp	Wind	CC
Start	600	59	2-5	10
End	720	66	1-3	10

CORA NOMO HOFI LOSH

KILL

No BUOW or BUOW sign

Encampments & unleashed/free dogs throughout survey area

Scale: 1 square = _____

Hesperia Big Bat BUOW #4
6/17/25 OP IB MT

Start time: 7:20
Clouds: 0%
Wind: 1-3
Temp: 73°

whitewash on known BUOW Burrow, no new BUOW Burrows

Birds

VGMO CORA LAWR
HOLA LOSH AMCR
HOSP

Wildlife

Jackrabbit
Ground squirrel (antelope)
CA Ground Squirrel

end time: 9:20
Clouds: 0%
Wind: 2-5
Temp: 91°

Scale: 1 square = _____

Hesperia Big Bar BUOW 5/17/25 MT, IBOP

	Time	Temp	Wind	CC
Start	0720	73	1-3	0
End	0920	81	2-5	0

CORA LOSH NOMO HOLA
CAWR (cactus wren) Fence lizard AVCO
Eleodes sp. CAGS side-blotched lizard
AMGR Antelope ground squirrel HOSP

Occupied tent within project site
Wild dogs on site

White wash found on previously occupied burrow. See IB photos.

Wild dog seen sitting in coyote dig simillar to one previously occupied by BUOW. Could be deterrent to site occupancy by BUOW

Scale: 1 square = _____

Hesperia big box BUOW #4 6/17

Start 0920 73°F 1-3 mph 6%
End 0920 81°F 2-5 mph 8%

CORA RUPI CAGS
NOMO HOSP Antelope [redacted]
CANK Squirrel
HOLA feral dogs
HOFI

- Minimal wash on BUOW burrow, no pellets. Sign was removed.
- Lots of transient human activity within survey area.
- New unoccupied ~~#5#~~ suitable burrow mapped.

Scale: 1 square = _____

APPENDIX I

BURROWING OWL RECONNAISSANCE SURVEY AND HABITAT ASSESSMENT RESULTS FOR THE HESPERIA BIG BOX RETAIL PROJECT – ADDITIONAL AREA, CITY OF HESPERIA, CALIFORNIA

ROCKS
BIOLOGICAL CONSULTING

September 8, 2025

Ryan Alvarez
Kimley-Horn
1100 W Town and Country Road, Suite 700
Orange, CA 92868

Subject: Burrowing Owl Reconnaissance Survey and Habitat Assessment Results for the Hesperia Big Box Retail Project – Additional Area, City of Hesperia, California

Mr. Alvarez:

This letter summarizes the results of a burrowing owl (*Athene cunicularia*; BUOW) reconnaissance survey and habitat assessment conducted by Rocks Biological Consulting (RBC) for the Hesperia Big Box Retail Project (project) in the City of Hesperia, California. The results of this habitat assessment specifically cover an additional area, which includes White Fox Trail, a dirt road to be improved west of the primary project site.

INTRODUCTION

The project is in Hesperia, south of the California Aqueduct, east of Cataba Road, northwest of Interstate (I)-15, and north of Main Street. The reconnaissance survey and habitat assessment cover a 1.4-acre area that has been added to the existing project site. This additional area is located directly to the west of the existing project site, which was previously assessed and surveyed for BUOW prior to the addition of this area. The additional area is primarily composed of disturbed habitat. Surrounding land uses include commercial, residential, and open spaces made up of Joshua tree woodland, disturbed California juniper tree woodland, and disturbed habitat.

On October 10, 2024, the California Fish and Game Commission unanimously approved the BUOW as a candidate species for potential listing under the California Endangered Species Act (CESA). As such, BUOW is afforded the same protections as a state-listed endangered or threatened species (California Department of Fish and Wildlife [CDFW] 2024). BUOW was documented within the primary project site during 2025 focused surveys; therefore, RBC biologists conducted a BUOW habitat assessment and concurrent reconnaissance BUOW survey within the additional area to assess BUOW presence and potential to occur.

Suitable habitat for the BUOW in California is typically composed of short, sparse vegetation with few shrubs, level to gently sloping topography, and well-drained soils (Haug et al. 1993). Grassland, shrub steppe, and desert are naturally occurring habitat types used by BUOW. In addition, BUOW may occur in some agricultural areas, ruderal fields, vacant lots, and pastures if the vegetation structure is suitable and there are useable burrows and foraging habitat in proximity (Gervais et al. 2008). Suitable burrows are primarily dug by small mammal species; therefore, California ground squirrel (*Otospermophilus beecheyi*) burrows and activity are specifically

evaluated in assessing BUOW occupancy of a site. Natural rock cavities, debris piles, culverts, and pipes are also used by BUOW for nesting and roosting (Rosenberg et al. 1998).

METHODS

On July 24, 2025, RBC conducted a habitat assessment and reconnaissance survey for BUOW within the project site and 500-foot buffer (survey area; Figure 1), excluding areas that were included in the 2025 focused BUOW surveys of the primary project site. RBC biologists walked transects spaced 30-60 feet apart through the survey area while searching for BUOW, and/or active burrows with BUOW sign (e.g., feathers, whitewash, pellets). Field binoculars (10x42) were used to scan the survey area for BUOW and to aid in the observation and identification of avian species. Binoculars were also used to survey portions of the 500-foot buffer that were inaccessible to surveyors. The survey was conducted during weather conditions favorable for observing BUOW activity.

RESULTS

RBC conducted one habitat assessment and reconnaissance BUOW survey on July 24, 2025. Senior biologist Alec Goodman recorded the starting and ending survey conditions as follows: time (1120 – 1300), temperature (82F – 84F), cloud cover (5% – 5%), and wind speed (5-8mph – 8-12mph).

The survey area is primarily composed of disturbed California juniper woodland, dominated by California juniper (*Juniperus californica*) in the tree layer, with Joshua tree (*Yucca brevifolia*) also present. The shrub and herbaceous layers are relatively open with sparse vegetation; the shrub layer is dominated by Cooper's box thorn (*Lycium cooperi*) and Mormon tea (*Ephedra* sp.), and the herbaceous layer is dominated by Saharan mustard (*Brassica tournefortii*) and Mediterranean grass (*Schismus* sp.). Disturbed habitat exists as a dirt road extending through the center of the survey area and is mostly denuded of vegetation. The western portion of the survey area is composed of developed land and is not suitable for BUOW.

No BUOW individuals or BUOW sign were observed within the survey area. Fifteen suitable unoccupied BUOW burrows were documented within the project site and survey area (Figure 1). Although highly disturbed, the project site supports suitable BUOW habitat due to the open habitat, sparse vegetation cover, and presence of unoccupied suitable burrows throughout. Representative site photographs are included in Attachment A. Seven bird species were observed, including common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura),* northern mockingbird (*Mimus polyglottos*), and rock pigeon (*Columba livia*).

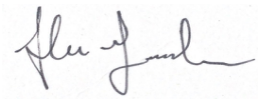
CONCLUSIONS

RBC documented open habitat with sparse vegetation cover and numerous suitable unoccupied BUOW burrows within the survey area during the reconnaissance survey and habitat assessment; however, no BUOW individuals or BUOW sign were observed. Due to the presence of suitable

habitat and the known occurrence of BUOW in the adjacent primary project site, there is a high potential for BUOW to occur within the additional area.

Please don't hesitate to contact RBC with any questions or concerns at 619-701-6798.

Sincerely,



Alec Goodman
Senior Biologist

Enclosed: Figure 1 – Survey Results
Attachment A – Site Photographs

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California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843.

2024. Fish and Game Commission: Western Burrowing Owl Becomes CESA Candidate; Wildlife Prosecutor of the Year Named; Waterfowlers Hall of Fame Inductees Recognized. https://wildlife.ca.gov/News/Archive/fish-and-game-commission-western-burrowing-owl-becomes-cesa-candidate-wildlife-prosecutor-of-the-year-named-waterfowlers-hall-of-fame-inductees-recognized

Gervais, J. A., D. K. Rosenberg, and L. A. Comrack. 2008. Burrowing Owl (*Athene cunicularia*) In: Shuford, W.D. and T. Gardali, editors. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento, California, USA.

Haug, E. A., B. A. Millsap, and M. S. Martell. 1993. Burrowing owl (*Speotyto cunicularia*), in A. Poole and F. Gill, editors, The Birds of North America, The Academy of Natural Sciences, Philadelphia, Pennsylvania, and The American Ornithologists' Union, Washington, D.C., USA.

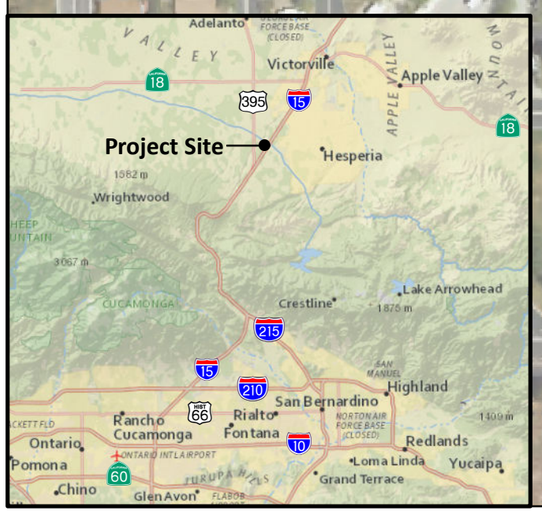
Rosenberg, D. K., J. A. Gervais, H. Ober, and D. F. DeSante. 1998. An adaptive management plan for the burrowing owl population at Naval Air Station Lemoore, California, USA. Publication 95, Institute for Bird Populations, P.O. Box 1346, Pt. Reyes Station, CA. 94956.

California Aqueduct

Cataba Rd

Amargosa Rd

Keypointe Dr



Project Area
Burrowing Owl Survey Area
Previously Surveyed for Burrowing Owl

Burrowing Owl Survey Results

Suitable Unoccupied Burrow

FIGURE 1

Survey Results

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 85 170 FEET

N

Aerial Photo: USDA NAIP 2024

Attachment A
Site Photographs

Photo 1. Representative view of disturbed habitat from the western portion of the survey area, facing east. July 24, 2025.

Photo 2. View of suitable burrowing owl habitat within disturbed California juniper tree woodland and disturbed habitat, from the center of the project area facing west. July 24, 2025.

Photo 3. View of disturbed California juniper tree woodland in the northern portion of the survey area, facing south. July 24, 2025.

Photo 4. View of California ground squirrel burrow suitable for burrowing owl in the survey area. July 24, 2025.

APPENDIX J

HESPERIA BIG BOX RETAIL PROJECT AQUATIC RESOURCES DELINEATION REPORT

ROCKS
BIOLOGICAL CONSULTING

HESPERIA BIG BOX RETAIL PROJECT
AQUATIC RESOURCES DELINEATION REPORT

Hesperia, California

May 6, 2025

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APPENDICES

Appendix A. Checklist: Minimum Standards for Acceptance of Aquatic Resource Delineation Reports
Appendix B. Applicable Aquatic Resource Protection Regulations
Appendix C. Arid West Wetland Determination Data Forms and Ephemeral and Intermittent Streams OHWM Datasheets
Appendix D. Antecedent Precipitation Tool Output
Appendix E. Site Photographs
Appendix F. Aquatic Resource Summary Tables
Appendix G. Literature Citations and References
Appendix H. GIS Data (provided electronically to agencies)

1 INTRODUCTION

On behalf of Kimley Horn, Rocks Biological Consulting (RBC) conducted a formal aquatic resources delineation for the Hesperia Big Box Retail Project (project). The review area in this aquatic resources delineation report (ARDR) includes the development boundary plus a 100-foot buffer totaling approximately 41.64 acres (Figure 1). This ARDR identifies areas that may be considered jurisdictional under the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act (CWA); the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act; and the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code (CFGC). The information provided in this ARDR is necessary to define the presence or absence of aquatic resources within the review area. This ARDR can also be used by the agencies to inform the jurisdictional status of delineated aquatic resources, and by the applicant and agencies to assess conformance with state and federal regulations and estimate potential impacts and associated permitting requirements. Furthermore, the information contained in this report complies with the Corps Los Angeles District's *Minimum Standards for Acceptance of Aquatic Resources Delineation Reports* (Minimum Standards; Corps 2017). Appendix A provides a checklist documenting compliance with the Minimum Standards.

2 SITE DESCRIPTION, LANDSCAPE SETTING

2.1 LOCATION

The review area is generally located northwest of Interstate (I)-15 and east of Highway 395 on private land within the City of Hesperia, San Bernardino County, California (Figure 1). The review area is generally bounded by the California Aqueduct to the north, undeveloped lots to the west, and Interstate (I)-15 to the south and east. The latitude and longitude of the approximate center of the review area is 34.429648, -117.381116. The review area is in Township 4 North, Range 5 West, Sections 14 and 15 within the Baldy Mesa 7.5-minute quadrangle, as mapped by the U.S. Geological Survey (USGS; Figure 2).

2.2 TOPOGRAPHY

The review area is primarily flat with elevations ranging from approximately 3,475 to 3,525 feet above mean sea level (amsl). The review area generally decreases in elevation moving north, towards the California Aqueduct (Figure 2).

2.3 WATERSHED

The review area is within the Mojave Hydrologic Unit Code (HUC) 8 (18090208), Bell Mountain Wash-Mojave River HUC 10 (1809020807), and the Oro Grande Wash HUC 12 (180902080704) (Figure 3). The mainstem of the Mojave River originates on the northern slope of the San Bernardino Mountains and flows north and then northeast into the Mojave Desert where it eventually terminates at Soda Lake near Baker, 110 miles downstream of its origin near Hesperia.

Large sections of the river have intermittent flows and do not typically exhibit surface flow except during extreme storm events (Lahontan Regional Water Quality Control Board [LRWQCB] 2019).

3 METHODS

3.1 PRE-FIELD REVIEW

Prior to the on-site delineations, field maps were created using a Geographic Information System (GIS). RBC staff reviewed USGS National Hydrography Dataset (NHD) and topography data (Figure 2), U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data (Figure 4), and Natural Resources Conservation Service (NRCS) soils data (Figure 4) to further determine the potential locations of aquatic resources within the review area. RBC also utilized Google Earth to assess current and historic presence or absence of flows and/or ponding in the review area (Google Earth Pro 2025).

3.2 ON-SITE DELINEATION AND MAPPING

RBC conducted a formal aquatic resources delineation field visit for the review area on February 4, 2025. Field conditions during the field visit is provided below in Table 1.

Table 1. Field Conditions

Date	Survey Time Start – End	Temperature (°F) Start – End	Wind Speed Range (miles per hour) Start – End	Cloud Cover (%) Start – End	Personnel[1]
2/4/25	0930 – 1130	53 – 56	10 to 15 – 15 to 18	0 – 0	TW, KW

[1]KW = Kelsey Woldt, TW = Travis Whitney

Figure 1 depicts the approximately 41.64-acre review area. Areas with depressions, drainage patterns, and/or wetland vegetation within the review area were evaluated, with focus on the presence of defined channels and/or wetland vegetation, soils, and hydrology. While in the field, potential aquatic resources were recorded using a hand-held Global Positioning System (GPS) unit with a level of accuracy ranging from <1 to 13 feet. Following field delineation, RBC staff refined the data using high-resolution aerial imagery and topographic maps with one-foot contours to ensure accuracy.

All figures generated for this ARDR follow the Corps' Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (Corps 2016).

Sections 3.2.1 through 3.2.3 below provide the aquatic resources delineation methods used per agency. Appendix B provides additional details regarding the agencies' applicable regulations and guidance associated with this ARDR.

3.2.1 CORPS

Waters of the United States Regulatory Guidance

Federal waters of the U.S. (WOTUS) definitions underwent significant federal review and revision in 2023. Following the release of a revised WOTUS definition in the January 2023 Revised Definition of WOTUS, the U.S. Supreme Court provided input on the definition on May 25, 2023, in the Sackett v Environmental Protection Agency case. In response to the case, a revised federal definition of WOTUS was issued in the subsequent conforming rule on September 8, 2023 (88 FR 61964). The September 2023 definition restricts federal CWA jurisdiction to waters with a continuous surface water connection to a traditional navigable water, presumably excluding ephemeral and most intermittent waters from Corps jurisdiction. Additionally, 33 Code of Federal Regulations (CFR) 328.3 (b) provides definitions of aquatic features not considered WOTUS, which are discussed in Section 6.4.

Ordinary High Water Mark Delineation

Aquatic resources with a defined ordinary high water mark (OHWM) would be considered potential non-wetland waters of the Corps. Regulations at 33 CFR 329.11 define an OHWM as "the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (51 Federal Register [FR] 41251, November 13, 1986). RBC staff used guidance provided in *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (OHWM Field Guide; Lichvar & McColley 2008) and Regulatory Guidance Letter (RGL) 05-05 to estimate the extent of an OHWM in the field. RBC completed representative 2010 Arid West Ephemeral and Intermittent Streams OHWM Datasheets for features exhibiting the potential presence of an OHWM following the guidance provided in the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (OHWM Datasheet; Curtis & Lichvar 2010). Per the 2010 OHWM Datasheet, common indicators of an OHWM include a break in slope (i.e., abrupt cut in bank slope created by hydrogeomorphic processes across the landscape), changes in average sediment texture between floodplain units (i.e., low-flow, active floodplain, low terrace), and changes in vegetation species and/or cover between floodplain units.

Wetland Delineation

Field staff examined potential wetland waters of the U.S. using the routine determination methods set forth in Part IV, Section D, Subsection 2 of the Corps 1987 *Wetland Delineation Manual* (Wetland Manual; Environmental Laboratory 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region Version 2.0* (Arid West Supplement; Corps 2008). Areas that met the three parameters per the Arid West Supplement (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology, following methods set forth in the Wetland Manual and Arid West Supplement) were considered wetland waters of the U.S. RBC staff based wetland plant indicator status (i.e., Obligate [OBL], occurs 99+% in wetlands; Facultative Wetland [FACW], occurs 67-99% in wetlands; Facultative [FAC], occurs 34-66% in wetlands;

Facultative Upland [FACU], occurs 1-33% in wetlands; Upland [UPL], occurs 99+% in uplands; and Not Listed [NL], considered UPL for wetland delineation purposes) on the *National Wetland Plant List* (NWPL; Corps 2022) and hydric soils indicators on *Field Indicators of Hydric Soils in the United States, Version 8.2* (NRCS 2018). Soil chromas were identified in the field according to *Munsell Soil-Color Charts with Genuine Munsell Color Chips* (Munsell Color 2015) and per the Wetland Manual and Arid West Supplement. Plants were identified according to Jepson eFlora (Jepson Flora Project 2025).

3.2.2 RWQCB

Ordinary High Water Mark Delineation

The California State Water Resources Control Board (SWRCB) and RWQCBs do not have regulations or guidance on defining the extent of non-wetland waters of the State. As such, field staff identified the lateral limits of potential non-wetland waters of the State using the same methodology for determining an OHWM per the Corps as described in Section 3.2.1. as they have generally been considered coincident.

Wetland Delineation

The State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (the Procedures; SWRCB 2021) defines wetland waters of the State. The Procedures were adopted on April 2, 2019, went into effect on May 28, 2020, and were revised on April 6, 2021. As detailed in the Procedures, the SWRCB and RWQCBs define a wetland as follows: “An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation” (SWRCB 2021).

The Procedures provide that RWQCBs shall rely on a wetland delineation from a final ARDR verified by the Corps to determine the extent of wetland waters of the State. If any potential wetland areas have not been delineated in a final ARDR verified by the Corps, the limits of such potential wetland waters of the State shall be identified using the same wetland delineation methods per the Corps as described in Section 3.2.1, except that a lack of vegetation (i.e., less than 5 percent areal coverage of plants during the peak of the growing season) does not preclude an area from meeting the definition of wetland waters of the State (SWRCB 2021).

3.2.3 CDFW

River, Lake, Stream, Watercourse, and Associated Riparian and Wetland Habitat Delineation

CDFW jurisdiction relies on the presence of a river, lake, and/or stream and associated riparian or wetland habitat (CFGC § 1600 et seq). Lakes include “natural lakes or man-made reservoirs” (14 California Code of Regulations [CCR] § 1.56). CDFW regulations define a stream as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and

supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (14 CCR § 1.72). The 1987 *Rutherford v. State of California* (188 Cal. App. 3d 1268) decision further provided that a streambed is the "channel of a water course; the depression between the banks worn by the regular and usual flow of the water." A streambed includes the "[a]rea extending between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including sand bars which may exist between the foot of said banks…" (188 Cal. App. 3d 1268). The bank is defined as "the slope or elevation of land that bounds the bed of the stream in a permanent or long-standing way, and that confines the stream water up to its highest level" (*The People v. Phillip Wright Osborn*, 116 Cal. App. 4th 764 [2004]).

Riparian habitat refers to vegetation and habitat associated with a stream. CDFW-jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream. Isolated riparian habitat (i.e., where riparian vegetation does not appear associated with an ephemeral wash) is not considered CDFW-jurisdictional.

To assist in assessing CDFW-jurisdictional limits in desert areas, RBC staff utilized the methods outlined in the *MESA – Mapping Episodic Stream Activity Field Guide* (MESA Field Guide; Vyverberg & Brady 2013). The MESA Field Guide was developed to describe the methodology for delineating episodic streams and the active watercourse within the arid and semi-arid California desert regions. The MESA Field Guide indicates the active watercourse extends beyond the streambed and can consist of associated features such as low-flow, active, and braided channels and banks associated with islands, and secondary channels within the bounds of a larger channel complex (Vyverberg & Brady 2013).

CDFW follows the USFWS wetland definition and classification system, which defines a wetland as transitional land between terrestrial and aquatic systems having one or more of the following attributes: "(1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year" (Cowardin et al. 1979). A wetland is presumed when all three attributes are present; if less than three attributes are present the presumption of a wetland must be supported by "the demonstrable use of wetland areas by wetland associated fish or wildlife resources, related biological activity, and wetland habitat values" (California Fish and Game Commission 1994).

Potential CDFW-jurisdictional wetland boundaries were determined based on the presence of wetland areas supported by a river, lake, or stream. Wetland delineation methods to determine the presence of one or more wetland attributes included the same methods per the Corps as described in Section 3.2.1.

Based on the above, potential CDFW-jurisdictional aquatic resources delineated included rivers, lakes, and/or streams and their associated riparian and wetland habitats, and active watercourse. Field staff delineated the lateral extent of potential CDFW jurisdiction to be "bank to bank" for a streambed or to the "dripline" of riparian habitat and/or wetland boundary, if present.

4 SITE ALTERATIONS, CURRENT CONDITIONS, AND PAST LAND USE

RBC staff reviewed Google Earth Pro (Google Earth Pro 2025), NetrOnline Historic Aerials (NetrOnline 2025), and the University of California – Santa Barbara (UCSB; UCSB n.d.) database to assess historic and ongoing land uses within the review area. The review area and surrounding lands were undeveloped, containing intact Joshua tree woodland, in the January 1952 aerial (i.e., the earliest historical image available; NetrOnline 2025; UCSB n.d.). The review area remained undeveloped, except for loosely connected dirt trails, until 1968 when construction of the I-15 interchange with Main Street resulted in minor disturbances along the eastern boundary of the review area. At that same time, vegetation clearing took place directly west of the review area to create what was likely a staging area for the construction of I-15.

Between 1968 and 1984, the California Aqueduct was constructed approximately 100 feet north of the review area, which resulted in little to no visible disturbance within the review area, and the north-south unpaved road along the western review area boundary was substantially widened (NetrOnline 2025). Between 1985 and 1994, Amargosa Road was graded and paved through the center of the review area and the north-south road along the western review area boundary continued to be widened (NetrOnline 2025; Google Earth 2025). Vegetation impacts from road development during this period appear to have initiated a vegetation type conversion of Joshua tree (*Yucca brevifolia*) woodland to rubber rabbitbrush scrub (*Ericameria nauseosa*) and California juniper (*Juniperus californica*) woodland. Since 1994, commercial development of adjacent areas to the south and west has continued while the review area has remained undeveloped with unpaved roads defining areas of disturbance (NetrOnline 2025; Google Earth 2025).

The following sections provide additional details regarding site alterations, current conditions, and land use specific to on-site soils, hydrology, and vegetation based on available data and site visits.

4.1 SOILS

Based on the NRCS soils data map (Figure 4), two soil map units occur within the review area These soil map units are outlined below in Table 2.

Table 2. Soils Mapped within Review Area

Soil Map Unit	Soil Series/Unit	Taxonomic Class	NRCS Hydric Status[1]
Cajon Sand, 0 to 2 Percent Slopes (112)	Cajon	Mixed, thermic Typic Torripsamments	No
Hesperia Loamy Fine Sand, 2 to 5 Percent Slopes (134)	Hesperia	Coarse-loamy, mixed, superactive, nonacid, thermic Xeric Torriorthents	No

Source: Official Soil Series Description and Series Classification database (NRCS n.d.a); *Soil Survey of Mojave River Area* (USDA 1978); NRCS Soil Data Access (SDA) Hydric Soils List (NRCS n.d.b).

[1] Based on the NRCS Soil Data Access (SDA) Hydric Soils List (NRCS n.d.b). As prescribed in the Arid West Supplement (Corps 2008), RBC used the hydric soils list as a tool and made final hydric soils determinations based on field-collected data at representative wetland delineation sample points deemed appropriate on site as recorded on the attached Arid West Wetland Determination Data Forms (Appendix C) discussed further in Section 6.1.

The National Technical Committee for Hydric Soils defines hydric soils; *Changes in Hydric Soils Database Selection Criteria* (77 FR 12234) outlines the current four hydric soil criteria. Per the NRCS Official Soil Series Description and Series Classification database, the review area does not contain any soil map units classified as hydric (NRCS n.d.a). The soil series/units outlined above in Table 2 are further described below per the USDA's NRCS Soil Data Access (SDA) Hydric Soils List (NRCS n.d.b) and the USDA's *Soil Survey of Mojave River Area* (USDA 1978).

Cajon – The Cajon series consists of very deep, somewhat excessively drained soils that have negligible to low runoff and rapid permeability. These soils formed in sandy alluvium from dominantly granitic rocks and occur on recent fans, fan skirts, fan aprons, inset fans and river terraces at elevations of 200 to 4,300 feet amsl. Cajon soil is used primarily for range, watershed, and recreation and irrigated areas are used for growing alfalfa and other crops. Uncultivated areas consist of creosote bush (*Larrea tridentata*), saltbush (*Atriplex* spp.), ephedra (*Ephedra* spp.), Joshua tree, as well as some Indian ricegrass (*Achnatherum hymenoides)*, annual grasses, and forbs.

Hesperia – The Hesperia series consists of very deep, well-drained soils with negligible to low runoff and moderately rapid permeability. Hesperia soils form in alluvium-derived areas, primarily from granite and related rock protoliths. These soils are found on long, smooth alluvial fans and valley fills at elevations from 200 to 4,800 feet amsl. Hesperia soils are used for desert range and the production of irrigated orchards, row crops, field crops, grain, hay, pasture, and grapes. The native vegetation community supported by Hesperia soils consists of creosote bush in the high desert and sparse annuals in the valley.

As specified in the Arid West Supplement, RBC used the hydric soils list as a tool and made final hydric soils determinations based on field-collected data at representative wetland delineation sample points deemed appropriate on site as recorded on the attached Arid West Wetland Determination Data Forms (Appendix C) and discussed further in Section 6.1.

4.2 HYDROLOGY

Per the review of online data sources, USGS NHD and USFWS NWI do not map any aquatic features within the review area, as shown in Figure 2 and Figure 4, respectively (USGS 2025; USFWS 2025). The California Aqueduct is identified by USGS NHD data as a "Canal/Ditch" and by USFWS NWI data as a "Riverine" feature approximately 100 feet north of the review area. While significant for statewide municipal water supplies, the California Aqueduct is levied and concrete-lined and is, therefore, not hydrologically connected to the review area. As such, the hydrologic character of the review area is dictated by significant precipitation events with surface flows generally directed to the north.

4.3 VEGETATION

Table 3 provides vegetation community and land cover acreages within the review area based on vegetation mapping conducted by RBC biologists during the 2025 site visit as well as biological surveys in 2023 and 2024. Vegetation communities within the review area are shown on Figure 6. The review area primarily consists of Joshua tree woodland and disturbed California juniper woodland. The vegetation community classifications follow *A Manual of California Vegetation* (Sawyer et al. 2009) and *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986).

Table 3. Vegetation Communities within Review Area

Vegetation Community/Land Cover Type	Acre(s)[1]
Joshua Tree Woodland	13.86
Disturbed California Juniper Woodland	11.30
Disturbed Rubber Rabbitbrush Scrub	4.87
Disturbed Land	4.31
Developed	7.30
Total	41.64

[1] Acreages summed using raw numbers provided during GIS analysis (available upon request) and thus the sum of the total rounded numbers may not directly add up in this table.

Joshua Tree Woodland – Joshua tree woodland occurs on gentle alluvial fans, ridges, and gentle to moderate slopes and consists of scattered Joshua trees in the tree strata with a variety of desert shrubs, such as big sagebrush (*Artemesia tridentata*), blackbrush (*Coleogyne ramosissima*), ephedra species, California buckwheat (*Eriogonum fasciculatum*), and Cooper's goldenbush (*Ericameria cooperi*). Joshua tree woodland occurs on the majority of the northern portion of the review area (13.86 acres), extending south to Amargosa Road. This vegetation community is disturbed by human activities, as evidenced by trash dumping and the presence of invasive herbaceous plants throughout.

Disturbed California Juniper Woodland – Disturbed California juniper woodland is similar to California juniper woodland; however, it has been substantially physically altered by human disturbance. Disturbed California juniper woodland occurs on ridges, slopes, valleys, alluvial fans, and valley bottoms. It is dominated by California juniper as a scattered tree or shrub. California juniper may be co-dominate with single-leaf pinyon (*Pinus monophyla*) and Joshua tree. Shrubs may include big sagebrush, blackbrush, ephedra species, and chaparral yucca (*Hesperoyucca whipplei*). Disturbed California juniper woodland primarily occurs on the western side of the northern portion and throughout the majority of the southern portion of the project site (11.30 acres). Human disturbances, including off-road vehicle tracks and trash dumping, are present throughout this community.

Disturbed Rubber Rabbitbrush Scrub – Disturbed rubber rabbitbrush scrub is similar to rubber rabbitbrush scrub; however, it has been substantially physically altered by human disturbance. Disturbed rubber rabbitbrush scrub occurs on all topographic settings, especially in disturbed settings, and consists of rubber rabbitbrush, big sagebrush, ephedra species, and California buckwheat, with possible emergent trees at low cover. Disturbed rubber rabbitbrush scrub occurs within the southern portion of the project site as well as along the borders of both portions (4.87 acres). Human disturbances within this vegetation community include trash dumping and off-road vehicle use.

Disturbed Land – Disturbed land is typically classified as land on which the native vegetation has been significantly altered by agriculture, construction, or other land-clearing activities, and the species composition and site conditions are not characteristic of the disturbed phase of a plant association (e.g., disturbed Riversidean sage scrub). Disturbed habitat is typically found in vacant lots, along roadsides, within construction staging areas, and in abandoned fields. The habitat is typically dominated by non-native annual species and perennial broadleaf species. Disturbed habitat occurs along the interior of the project site boundary in linear, disjunct segments in the form of dirt roads (4.31 acres). Disturbed land on site is primarily bare soil or vegetated by non-native species.

Developed – Developed land is typically classified as lands regularly utilized by humans that are devoid of natural habitat. Developed land within the review area (7.30 acres) is primarily comprised of roads, specifically Amargosa Road and the I-15 on/off ramp.

5 PRECIPITATION DATA AND ANALYSIS

RBC utilized the NRCS Agricultural Applied Climate Information System (AgACIS) database for the Hesperia station (approximately seven miles southeast of the review area) to access pre-site visit precipitation data (NRCS 2025), as shown in Table 4.

RBC also utilized the Corps' Antecedent Precipitation Tool (APT) to assess whether or not the delineation date occurred in a drier, average, or wetter than normal period for the review area (Corps 2025). The Corps created the APT to assist with determining the normal periodic range of precipitation and other climate variables for the waterbody or waterbodies within a given location. Additionally, the APT can generally inform the regulatory agencies whether or not normal hydrologic/climatic conditions were on site at the time of the site visit and assist with completion of the Arid West Wetland Determination Data Forms (Appendix C).

5.1 PRECIPITATION SUMMARY

Table 4 describes the estimated monthly total precipitation for the review area from February 2024 to February 2025 to provide the pertinent pre-site visit precipitation data from the NRCS database for the Hesperia station (NRCS 2025).

Table 4. Precipitation Data for February 2024 – February 2025

	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
Monthly Total Precipitation (inch[es])	5.01	1.73	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95	M

[1] Per AgACIS database: "Values of 'M' indicate missing data."

5.2 ANTECEDENT PRECIPITATION TOOL DATA

The APT provides three climatological parameters: Palmer Drought Severity Index (PDSI), season, and antecedent precipitation condition. The PDSI is a standardized index calculated on a monthly basis with PDSI value outputs ranging from -10 (extremely dry) to +10 (extremely wet; National Oceanic and Atmospheric Administration [NOAA] 2020) to assess drought conditions (i.e., PDSI Class). The APT determines wet versus dry season based on related procedures provided in the applicable regional supplement for the review area (i.e., Arid West Supplement). The antecedent precipitation condition is classified as drier than normal with an antecedent runoff condition (ARC) score less than 10; normal with an ARC score between 10 to 14; or wetter than normal with an ARC score greater than 14 (Sprecher & Warne 2000).

Table 5 summarizes the key data from the APT output which compares the current year 30-day rolling total to the averaged 30-year normal for the weather stations with comprehensive historical data within 30 miles of the review area: estimated drought conditions, wet or dry season determination, ARC score, and antecedent precipitation condition. The APT output provided in Appendix D and summarized in Table 5 noted a PDSI class of "severe drought" during the February field survey. The precipitation and climatic conditions were classified as "drier than normal" for the review area during the February 2025 field survey based on the 30-day rolling totals for the three months preceding the field survey dates.

Table 5. Antecedent Precipitation Tool Data for Review Area

Field Survey Date	PDSI Value	PDSI Class	Season	ARC Score	Antecedent Precipitation Condition
2/4/2025	-3.33	Severe Drought	Wet season	6	Drier than Normal

6 DESCRIPTION OF OBSERVED POTENTIAL AQUATIC RESOURCES

The following descriptions of observed potential aquatic resources within the review area document the presence or absence of aquatic resource indicators per the methods discussed in Section 3. The subsections below are intended to be reviewed independently under each agency's purview unless otherwise directed in the text (i.e., the aquatic resource description is the same between two or more agencies) given the various regulatory definitions and standards per each agency. Areas that were investigated but determined to not qualify as potential aquatic resources are discussed briefly in Section 6.4.

Appendix E provides site photographs of the aquatic resources within the review area; all figures in the Figure 5 series display representative photo points.

6.1 CORPS/RWQCB WETLAND WATERS OF THE U.S./STATE

RBC collected data at one Wetland Data Form Point (WDP) within the review area to determine the presence or absence of jurisdictional wetland waters of the U.S./State (WDP 1; Figures 5A and 5B; Appendix C). WDP 1 was collected in a depression formed by the confluence of Non-Wetland Water (NWW-) 1 and NWW-2 with a palo verde (*Parkinsonia* sp.; FAC) tree at the top of a nearby bank (Appendix E, Photo 3). RBC selected one WDP location within the review area because it was representative of the features within the review area (i.e., ephemeral streambeds and erosional features lacking hydrophytic vegetation and hydric soil indicators; Appendix C). The delineated aquatic features on site did not meet the appropriate wetland parameters to qualify as wetland waters of the U.S./State based on the data collected during the field delineation, as discussed further in Section 6.2.

6.2 CORPS/RWQCB NON-WETLAND WATERS OF THE U.S./STATE

RBC collected data at two representative OHWM Datasheet Points (ODPs) within the review area to determine the presence of potential non-wetland waters of the U.S./State (ODPs 1 and 2; Figures 5A and 5B; Appendix C). Overall, the review area supports two single-thread, unvegetated features (NWW-1 and NWW-2) and one concrete v-ditch (NWW-3; Appendix C). The OHWMs for NWW-1 through NWW-3 vary in width from an average minimum of one foot and an average maximum of four feet. Joshua tree (NL/UPL), California juniper (NL/UPL), rubber rabbitbrush (NL/UPL), Mediterranean schismus (*Schismus barbatus*; NL/UPL), and other species comprise the uplands adjacent to NWW-1 through NWW-3. See Appendix C, for the OHWM, and wetland data for NWW-1 through NWW-3.

NWW-1 flows north and meets with NWW-2 at a topographic depression (Figures 5A and 5B). NWW-3 drains south along the perimeter of the I-15 off-ramp (Figures 5A and 5B). NWW-1 originates at an unknown point within stormwater infrastructure south of the review area, and outlets at the stormwater outfall with grouted rip-rap concrete wing walls and continues for approximately 50 feet as an unvegetated ephemeral channel (Figures 5A and 5B; Appendix E, Photos 2 and 14; Appendix F, Table F-1). NWW-2 is an unvegetated ephemeral feature that originates north of the review area and flows to a confluence with NWW-1 at WDP 1 (Figures 5A and 5B; Appendix E, Photos 1 and 3; Appendix F, Table F-1). NWW-3 is a concrete v-ditch that collects surface flows from the side slope of the I-15 offramp along the southern boundary of the review area (Figures 5A and 5B; Appendix E, Photos 11 and 12; Appendix F, Table F-1).

Staff concluded, based on field observations, that NWW-1 through NWW-3 are ephemeral features that only flow in direct response to precipitation. The general characteristics of the features observed within the review area is provided in Appendix F, Table F-1. Staff did not observe standing or flowing water at any of the features. Soils retained some moisture from recent precipitation when data was collected at WDP 1, however no surface soil saturation was present in the review area during the 2025 field survey.

Staff determined the presence of an OHWM at four locations within NWW-1 (ODP 1; earthen, ephemeral channel), NWW-3 (ODP 2; concrete v-ditch), Swale (S-) 2 (ODP 3), and Erosional Feature (EF-) 1 (ODP 4). Indicators of an OHWM for NWW-1 and NWW-3 generally included a clear break in bank slope, change in vegetation cover, and change in vegetation species between the active floodplain and upland areas (Appendix C). The determination of OHWM indicators in S-2 and EF-1 are discussed below in Section 6.4.

6.3 CDFW STREAMBED

Figure 5C displays the estimated extent of streambed within the review area. The extent of streambed was delineated based on the top of the channel banks.

As mentioned above in Section 6.2, NWW-1 flows north meeting with NWW-2 at a topographic depression and NWW-3 drains south along the perimeter of the I-15 offramp (Figure 5C). NWW-1 is comprised of a stormwater outfall structure with grouted rip-rap and concrete wing walls and unvegetated ephemeral streambed, which originates at an unknown point within stormwater infrastructure south of the review area (Figure 5C; Appendix E, Photos 2 and 14; Appendix F, Table F-2). NWW-2 is an unvegetated ephemeral streambed that originates north of the review area and flows to a confluence with NWW-1 at WDP 1 (Figure 5C; Appendix E, Photos 1 and 3; Appendix F, Table F-2). NWW-3 is a concrete v-ditch that collects surface flows from the side slope of the I-15 offramp along the southern boundary of the review area (Figure 5C; Appendix E, Photos 11 and 12; Appendix F, Table F-2).

Staff concluded, based on field observations, that NWW-1 through NWW-3 are ephemeral streambeds that only flow in direct response to precipitation. The general characteristics of the features observed within the review area is provided in Appendix F, Table F-2. Staff did not observe standing or flowing water at any of the features. Soils retained some moisture from recent precipitation at the confluence of NWW-1 and NWW-2, however no surface soil saturation was present in the review area during the 2025 field survey.

The top of bank widths for NWW-1 through NWW-3 vary from an average minimum of two feet and an average maximum of eight feet. Joshua tree (NL/UPL), California juniper (NL/UPL), rubber rabbitbrush (NL/UPL), Mediterranean schismus (*Schismus barbatus*; NL/UPL), and other species comprise the uplands adjacent to NWW-1 through NWW-3. The general characteristics of each of the observed features within the review area are provided in Appendix F, Table F-2.

6.4 OTHER FEATURES

RBC field staff surveyed and recorded additional areas with potential aquatic resource indicators, including three erosional features, two swales, and five basins. The features discussed in this section are not discussed further in this ARDR as they are not anticipated to be jurisdictional under current Corps, RWQCB, or CDFW regulations, policies, and/or guidance based on the information provided in this section.

Erosional Features 1 – 3

EF-1 through EF-3 are erosional features created in topographic depressions within existing unpaved roads and have no off-site/downstream connectivity (Figures 5A – 5C). EF-1 through EF-3 appear to have been created within tire ruts caused by off-road vehicle traffic (Appendix E, Photos 4, 5, and 10). EF-1 through EF-3 do not exhibit a change in vegetation above top of bank in sediment texture, and average sediment texture between the base of the EF and adjacent uplands is indistinguishable. Additionally, the current WOTUS definition excludes, "Swales and erosional features (e.g*.,* gullies, small washes) characterized by low volume, infrequent, or short duration flow", as detailed in 33 CFR 328.3(b)(8).

ODP 4 captures the characteristics of EF-1 (Appendix C). The conditions observed at EF-1 were representative of the conditions observed at EF-2 and EF-3. Thus, these erosional features were determined not to meet the appropriate OHWM nor streambed parameters to qualify as NWWs of the U.S./State (Figures 5A – 5C; Appendix C, ODP 4).

Swales 1 & 2

S-1 and S-2 are roadside swales created along the northern shoulder of Amargosa Road in the southern half of the review area (Figures 5A – 5C). Both S-1 and S-2 appear to have been created by constructing an earthen berm along the northern extent of the road shoulder and appear to be periodically maintained for the express purpose of collecting runoff from Amargosa Road (Appendix E, Photo 15). S-1 and S-2 exhibit a notable change in vegetation species and vegetative cover due to periodic grading; however, average sediment texture between the base of the swale, berm, and adjacent uplands is indistinguishable. Additionally, the current WOTUS definition excludes, "Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water", as detailed in 33 CFR 328.3(b)(3).

ODP 3 captures the characteristics of S-2 (Appendix C). The conditions observed at S-2 were representative of the conditions observed at S-1. Thus, these swales were determined not to meet the appropriate OHWM nor streambed parameters to qualify as NWWs of the U.S./State (Figures 5A – 5C; Appendix C, ODP 3).

Basins 1 – 5

B-1 through B-5 were documented in the southwestern corner of the review area in an unpaved parking overflow area adjacent to a restaurant (Figures 5A – 5C; Appendix E, Photos 6 – 10). These five basin features appeared to be highly disturbed, unvegetated topographical depressions within the parking overflow area which collect runoff from the surrounding developed landscape (e.g., B-2 collecting flows from EF-3; Appendix E, Photo 10). Thus, these basins were determined not to meet the appropriate parameters to qualify as waters of the U.S./State.

7 DEVIATION FROM NWI AND NHD

The California Aqueduct and Oro Grande Wash generally occur within the extent mapped by the USFWS NWI as "Riverine" (Figure 4). Similarly, the USGS mapping captures the California

Aqueduct as a "Canal/Ditch" and Oro Grande Wash, and two unnamed linear aquatic features east of I-15 each as "Stream/River" within their respective general areas of occurrence (Figure 2).

8 RESULTS AND CONCLUSIONS

The results provided in this section include the extent of delineated aquatic resources within the review area based on observed field indicators of potential waters of the U.S., waters of the State, and CDFW streambed and associated watercourse per the methodologies discussed in Section 3. Table 6 provides a summary of the aquatic resources delineated within the review area per agency. Further details for each aquatic resource are provided in Appendix F.

EF-1, EF-2, EF-3, S-1, S-2, B-1, B-2, B-3, B-4, and B-5 are excluded from the calculations below in Table 6 based upon the absence of aquatic resource indicators, as discussed in Section 6.4.

Table 6. Total Acreages of Delineated Aquatic Resources within Review Area

Agency	Aquatic Resource Type	Acres	Linear Feet
Corps	Non-Wetland Waters of the U.S.	N/A[2]	N/A[2]
	Total Corps Aquatic Resources	**N/A[2]**	**N/A[2]**
RWQCB	Non-Wetland Waters of the State	0.08	1,247
	Total RWQCB Aquatic Resources[1]	**0.08**	**1,247**
CDFW	Unvegetated Streambed	0.20	1,247
	Total CDFW Aquatic Resources[1]	**0.20**	**1,247**

[1] Acreages and linear feet totals were summed using raw numbers provided during GIS analysis (available upon request) and thus, the sum of the total rounded numbers may not directly add up in this table.

[2] Not considered non-wetland Waters of the U.S. per 33 CFR 328.3 (88 FR 61964, September 8, 2023; Revised Definition of "Waters of the United States"; Conforming). See Section 8.1.

8.1 CORPS

NWW-1 through NWW-3 displayed clear indicators of an OHWM, such as a break in bank slope, change in vegetation species, and change in vegetation cover between the drainage and adjacent uplands. However, NWW-1 through NWW-3 do not exhibit a continuous surface connection to a traditionally navigable water (TNW) as defined by 33 CFR 328.3 (88 FR 61964, September 8, 2023; Revised Definition of "Waters of the United States"; Conforming) and would be designated as Non-Relatively Permanent Waters by the Corps. As such, NWW-1 through NWW-3 are not considered to be non-wetland waters of the U.S. Please see Section 3.2.1 and Appendix B for further details related to the current WOTUS definition.

8.2 RWQCB

Approximately 0.08 acre (1,247 linear feet) of potential non-wetland waters of the State associated with NWW-1 through NWW-3 occur within the review area as further detailed in Appendix F, Table F-1 and as shown on Figure 5B. NWW-1 through NWW-3 displayed clear indicators of an OHWM,

such as a break in bank slope, change in vegetation species, and change in vegetation cover between the drainage and adjacent uplands (Appendix C); however, these features did not meet the hydric soil or hydrophytic vegetation wetland parameters. As such, NWW-1 through NWW-3 may be considered non-wetland waters of the State.

8.3 CDFW

Approximately 0.20 acre (1,247 linear feet) of potential CDFW unvegetated streambed were delineated within the review area. The locations of these aquatic features are shown on Figure 5C and summarized in Appendix F, Table F-2.

8.4 DISCLAIMER STATEMENT

The aquatic resources acreages and linear feet estimated in this section represent the existing conditions during the time of the field surveys. Please note that the applicable agencies will make final jurisdictional determinations. RBC recommends early coordination with the resource agencies to determine the final jurisdictional boundaries, applicable permitting processes, compensatory mitigation requirements, and other potential permitting issues specific to the proposed work within the review area. Agency representatives may request to access the site to field-verify the results of this ARDR with the applicant, or a designated representative.

The information provided in this report should remain valid for up to five years from the date of the field effort for the jurisdictional delineation unless site conditions change substantially, or a regulatory agency requires an updated report.

9 CONTACT INFORMATION

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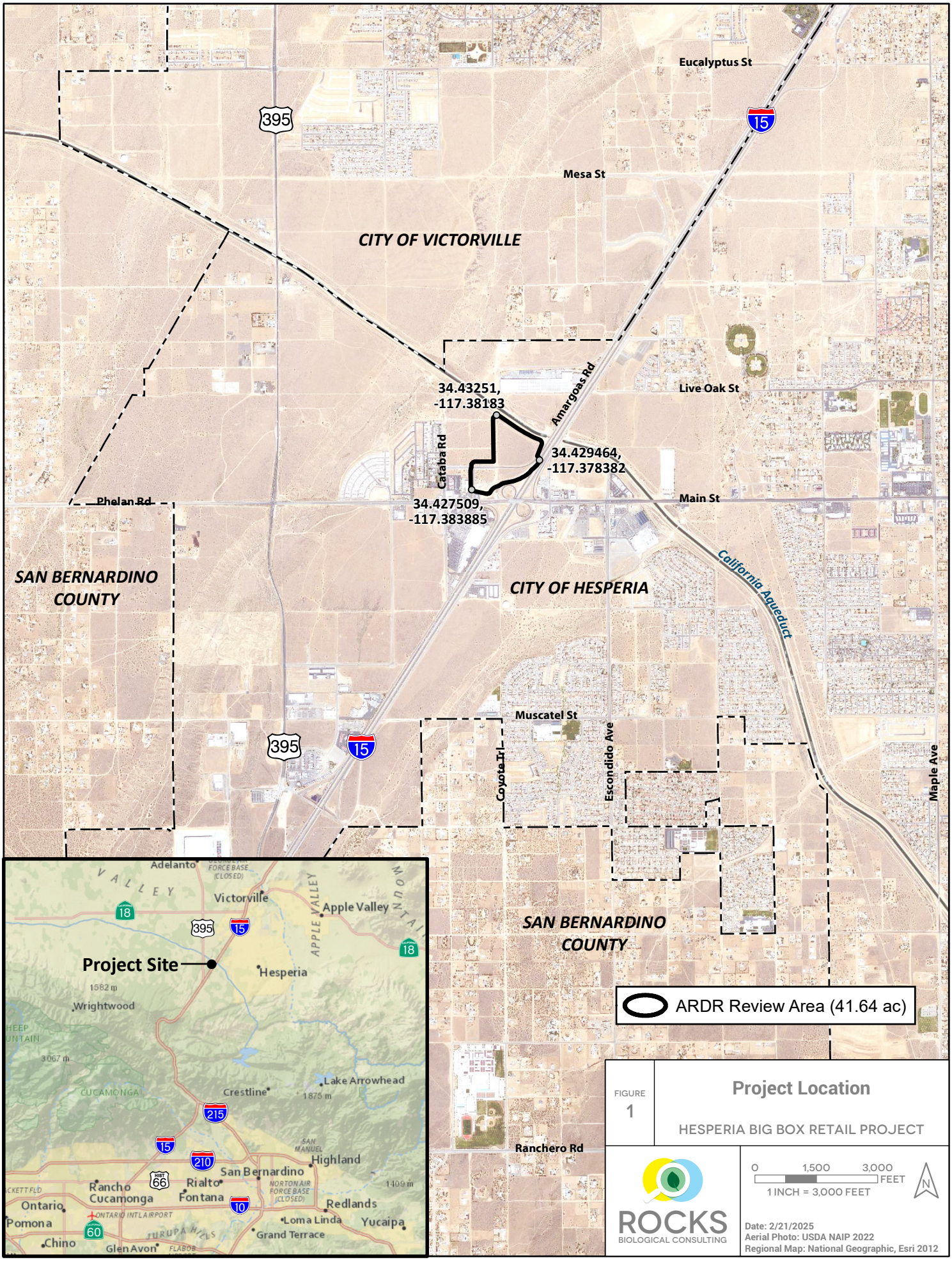
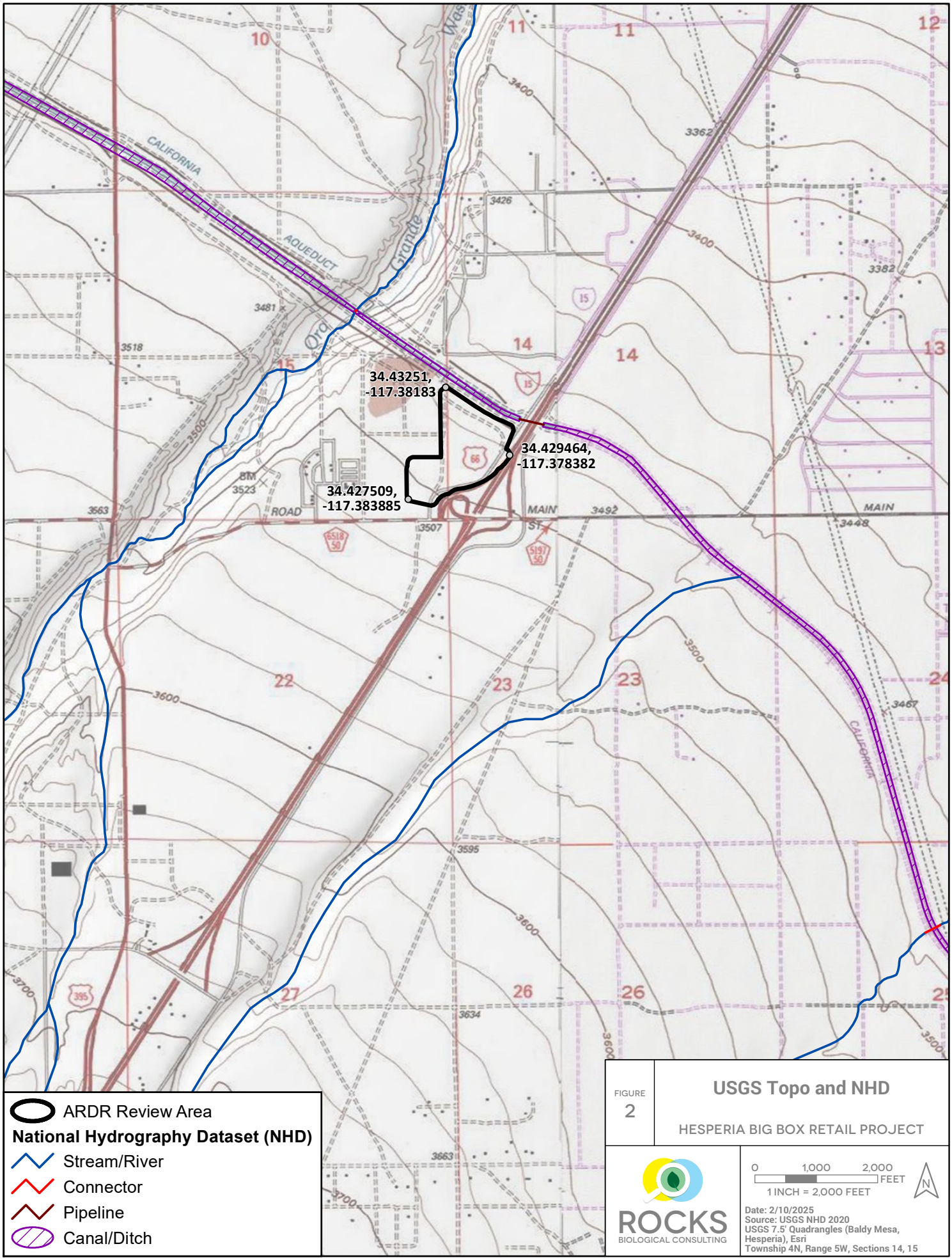
(479) 644-5695

Agent:

Travis Whitney
Rocks Biological Consulting
4312 Rialto Street
San Diego, CA 92107
travis@rocksbio.com
(619) 414-4099

Agency access to the review area can be coordinated with the applicant and/or agent upon request.


Eucalyptus St
Mesa St
CITY OF VICTORVILLE
Live Oak St
Amargosas Rd
Catalba Rd
34.43251,
-117.38183
34.429464,
-117.378382
34.427509,
-117.383885
Phelan Rd
Main St
SAN BERNARDINO
COUNTY
CITY OF HESPERIA
California Aqueduct
Muscatel St
Coyote Trl
Escondido Ave
Maple Ave
SAN BERNARDINO
COUNTY
Ranchero Rd
395
15
Project Site
Victorville
Apple Valley
Hesperia
Adelanto
Wrightwood
Crestline
Lake Arrowhead
Rancho
Cucamonga
Fontana
Rialto
San Bernardino
Highland
Redlands
Loma Linda
Yucaipa
Grand Terrace
Ontario
Pomona
Chino
Glen Avon
ARDR Review Area (41.64 ac)
FIGURE
1
Project Location
HESPERIA BIG BOX RETAIL PROJECT
ROCKS
BIOLOGICAL CONSULTING
0
1,500
3,000
FEET
1 INCH = 3,000 FEET
N
Date: 2/21/2025
Aerial Photo: USDA NAIP 2022
Regional Map: National Geographic, Esri 2012


34.43251,
-117.38183
34.429464,
-117.378382
34.427509,
-117.383885
ARDR Review Area
National Hydrography Dataset (NHD)
Stream/River
Connector
Pipeline
Canal/Ditch
FIGURE
2
USGS Topo and NHD
HESPERIA BIG BOX RETAIL PROJECT
ROCKS
BIOLOGICAL CONSULTING
0 1,000 2,000 FEET
1 INCH = 2,000 FEET
N
Date: 2/10/2025
Source: USGS NHD 2020
USGS 7.5' Quadrangles (Baldy Mesa, Hesperia), Esri
Township 4N, Range 5W, Sections 14, 15

ARDR Review Area
NHD Watershed 8-digit HUC
NHD Watershed 10-digit HUC
NHD Watershed 12-digit HUC

Burkhardt Lake-Mojave River
HUC 12 - 180902080706

Oro Grande Wash
HUC 12 - 180902080704

Desert Knolls Wash-Mojave River
HUC 12 - 180902080703

ARDR Review Area

Antelope Valley-Mojave River
HUC 12 - 180902080702

Detail Area 1 INCH = 1 MILES

Death Valley-Lower Amargosa
HUC 8 - 18090203

Halloran Wash
HUC 10 - 1809020824

Silver Lake
HUC 10 - 1809020826

Ivanpah-Pahrump Valleys
HUC 8 - 16060015

Langford Well Lake
HUC 10 - 1809020815

Cronise Valley
HUC 10 - 1809020817

Soda Lake
HUC 10 - 1809020825

Willow Wash
HUC 10 - 1809020823

Coyote-Cuddeback Lakes
HUC 8 - 18090207

Mojave
HUC 8 - 18090208

Upper Kelso Wash
HUC 10 - 1809020819

Lower Kelso Wash
HUC 10 - 1809020820

Baxter Wash-Mojave River
HUC 10 - 1809020822

Crucero Hill
HUC 10 - 1809020821

Wall Street Canyon
HUC 10 - 1809020812

Manix Wash-Mojave River
HUC 10 - 1809020814

Daggett Wash-Mojave River
HUC 10 - 1809020811

Troy Lake
HUC 10 - 1809020813

Devils Playground Wash
HUC 10 - 1809020818

Broadwell Lake
HUC 10 - 1809020816

Antelope-Fremont Valleys
HUC 8 - 18090206

Buckthorn Wash-Mojave River
HUC 10 - 1809020809

Stoddard Valley
HUC 10 - 1809020810

Lower Fremont Wash
HUC 10 - 1809020806

Wild Wash
HUC 10 - 1809020808

Mojave River

Mojave
HUC 8 - 18090208

Sheep Creek-El Mirage Lake
HUC 10 - 1809020804

Apple Valley Dry Lake
HUC 10 - 1809020803

Bell Mountain Wash-Mojave River
HUC 10 - 1809020807

Upper Fremont Wash
HUC 10 - 1809020805

ARDR Review Area

See Detail

HUC 12 Watersheds:
1 Headwaters Mojave River 180902080701
2 Antelope Valley-Mojave River 180902080702
3 Desert Knolls Wash-Mojave River 180902080703
4 Oro Grande Wash 180902080704
5 Bell Mountain Wash 180902080705
6 Burkhardt Lake-Mojave River 180902080706
7 Town of La Delta-Mojave River 180902080707

Southern Mojave
HUC 8 - 18100100

West Fork Mojave River
HUC 10 - 1809020802

Deep Creek
HUC 10 - 1809020801

San Gabriel
HUC 8 - 18070106

Santa Ana
HUC 8 - 18070203

FIGURE 3

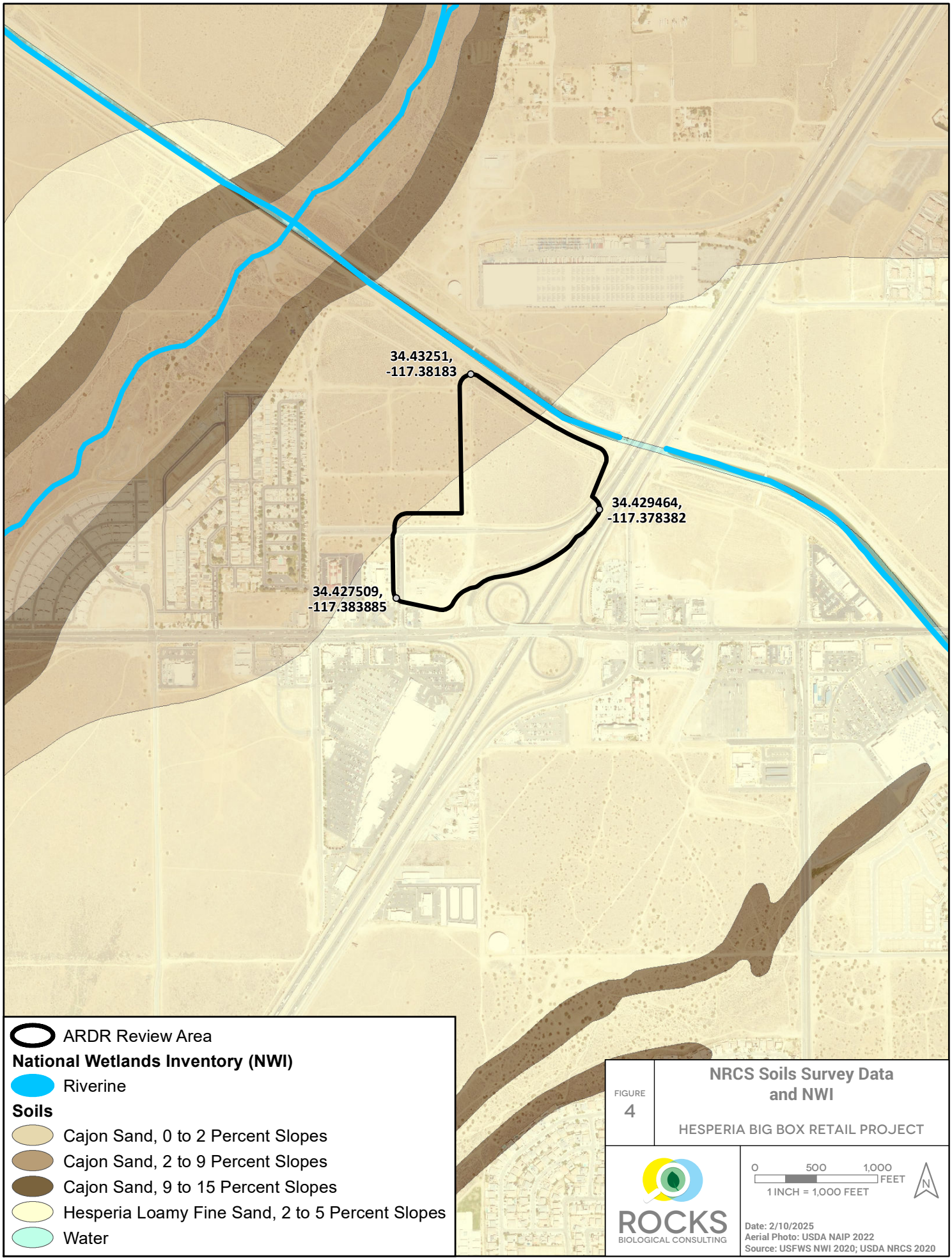
Watershed

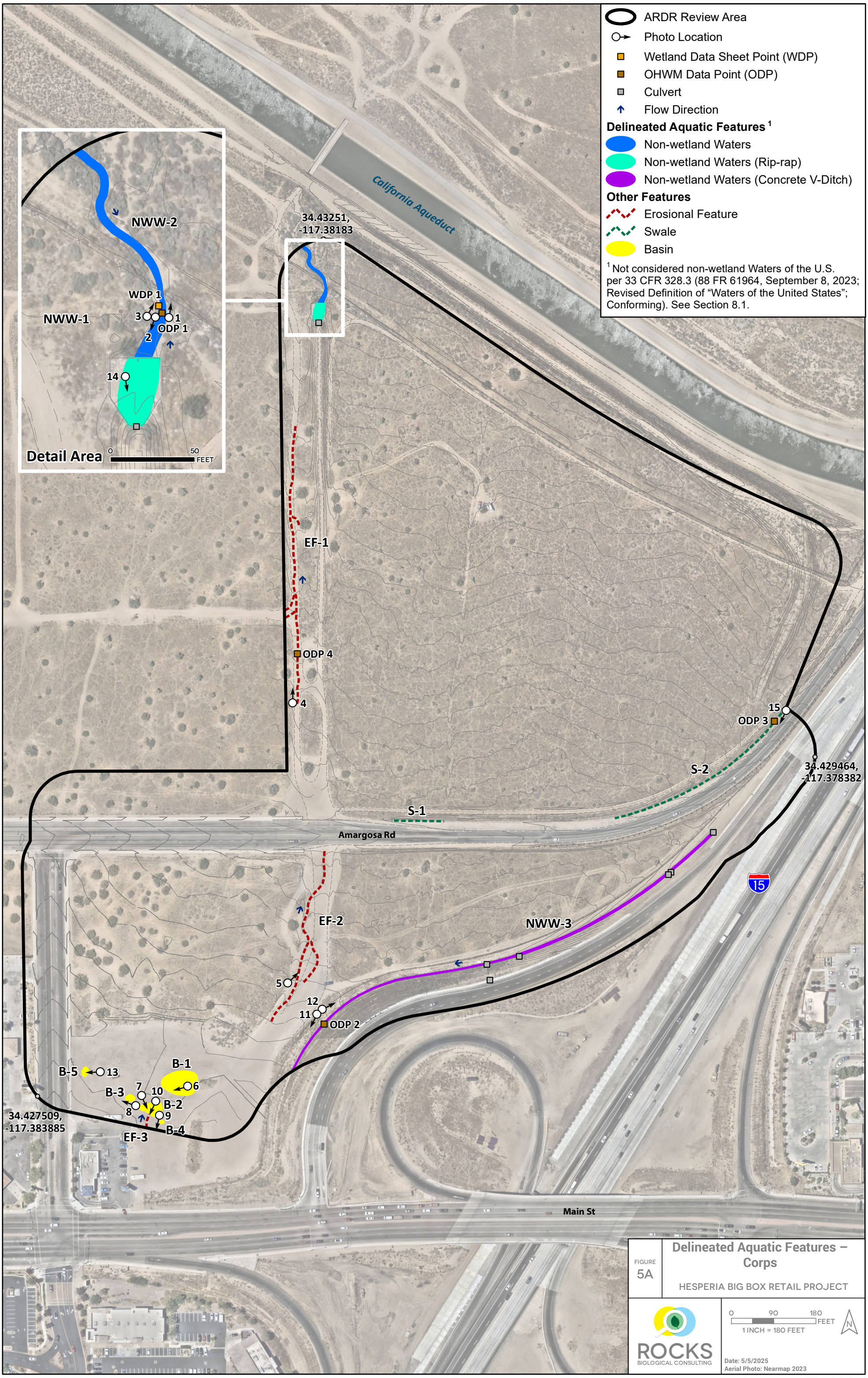
HESPERIA BIG BOX RETAIL PROJECT

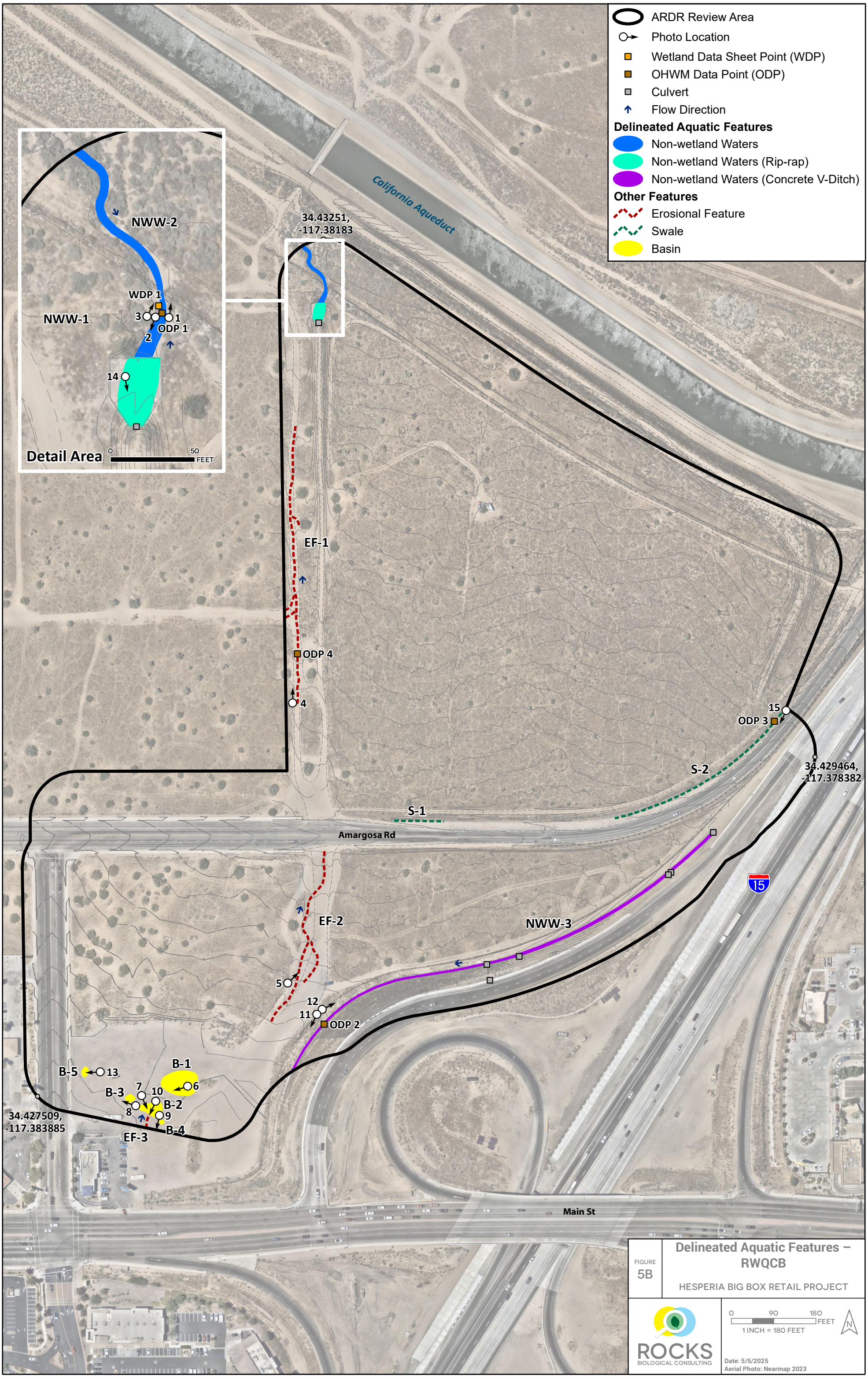
ROCKS BIOLOGICAL CONSULTING

0 5 10 MILES
1 INCH = 10 MILES

Date: 2/10/2025
Aerial Photo: Maxar, Esri 2020
Source: USGS NHD 2020


34.43251,
-117.38183
34.429464,
-117.378382
34.427509,
-117.383885
ARDR Review Area
National Wetlands Inventory (NWI)
Riverine
Soils
Cajon Sand, 0 to 2 Percent Slopes
Cajon Sand, 2 to 9 Percent Slopes
Cajon Sand, 9 to 15 Percent Slopes
Hesperia Loamy Fine Sand, 2 to 5 Percent Slopes
Water
FIGURE
4
NRCS Soils Survey Data
and NWI
HESPERIA BIG BOX RETAIL PROJECT
ROCKS
BIOLOGICAL CONSULTING
0
500
1,000
FEET
1 INCH = 1,000 FEET
N
Date: 2/10/2025
Aerial Photo: USDA NAIP 2022
Source: USFWS NWI 2020; USDA NRCS 2020


ARDR Review Area
Photo Location
Wetland Data Sheet Point (WDP)
OHWM Data Point (ODP)
Culvert
Flow Direction
Delineated Aquatic Features [1]
Non-wetland Waters
Non-wetland Waters (Rip-rap)
Non-wetland Waters (Concrete V-Ditch)
Other Features
Erosional Feature
Swale
Basin
[1] Not considered non-wetland Waters of the U.S. per 33 CFR 328.3 (88 FR 61964, September 8, 2023; Revised Definition of "Waters of the United States"; Conforming). See Section 8.1.
California Aqueduct
34.43251, -117.38183
NWW-2
WDP 1
NWW-1
3
1
ODP 1
2
14
Detail Area
0
50
FEET
EF-1
ODP 4
4
15
ODP 3
34.429464, -117.378382
S-2
S-1
Amargosa Rd
15
EF-2
NWW-3
5
12
11
ODP 2
B-5
13
B-1
6
B-3
7
10
B-2
8
9
B-4
34.427509, -117.383885
EF-3
Main St
FIGURE 5A
Delineated Aquatic Features – Corps
HESPERIA BIG BOX RETAIL PROJECT
ROCKS BIOLOGICAL CONSULTING
0
90
180
FEET
1 INCH = 180 FEET
N
Date: 5/5/2025
Aerial Photo: Nearmap 2023


ARDR Review Area
Photo Location
Wetland Data Sheet Point (WDP)
OHWM Data Point (ODP)
Culvert
Flow Direction
Delineated Aquatic Features
Non-wetland Waters
Non-wetland Waters (Rip-rap)
Non-wetland Waters (Concrete V-Ditch)
Other Features
Erosional Feature
Swale
Basin
California Aqueduct
34.43251, -117.38183
NWW-2
WDP 1
NWW-1
3
1
ODP 1
2
14
Detail Area
0
50
FEET
EF-1
ODP 4
4
15
ODP 3
34.429464, -117.378382
S-2
S-1
Amargosa Rd
EF-2
NWW-3
5
12
11
ODP 2
B-1
B-5
13
6
B-3
7
10
B-2
8
9
B-4
34.427509, -117.383885
EF-3
Main St
15
FIGURE
5B
Delineated Aquatic Features – RWQCB
HESPERIA BIG BOX RETAIL PROJECT
ROCKS
BIOLOGICAL CONSULTING
0
90
180
FEET
1 INCH = 180 FEET
N
Date: 5/5/2025
Aerial Photo: Nearmap 2023

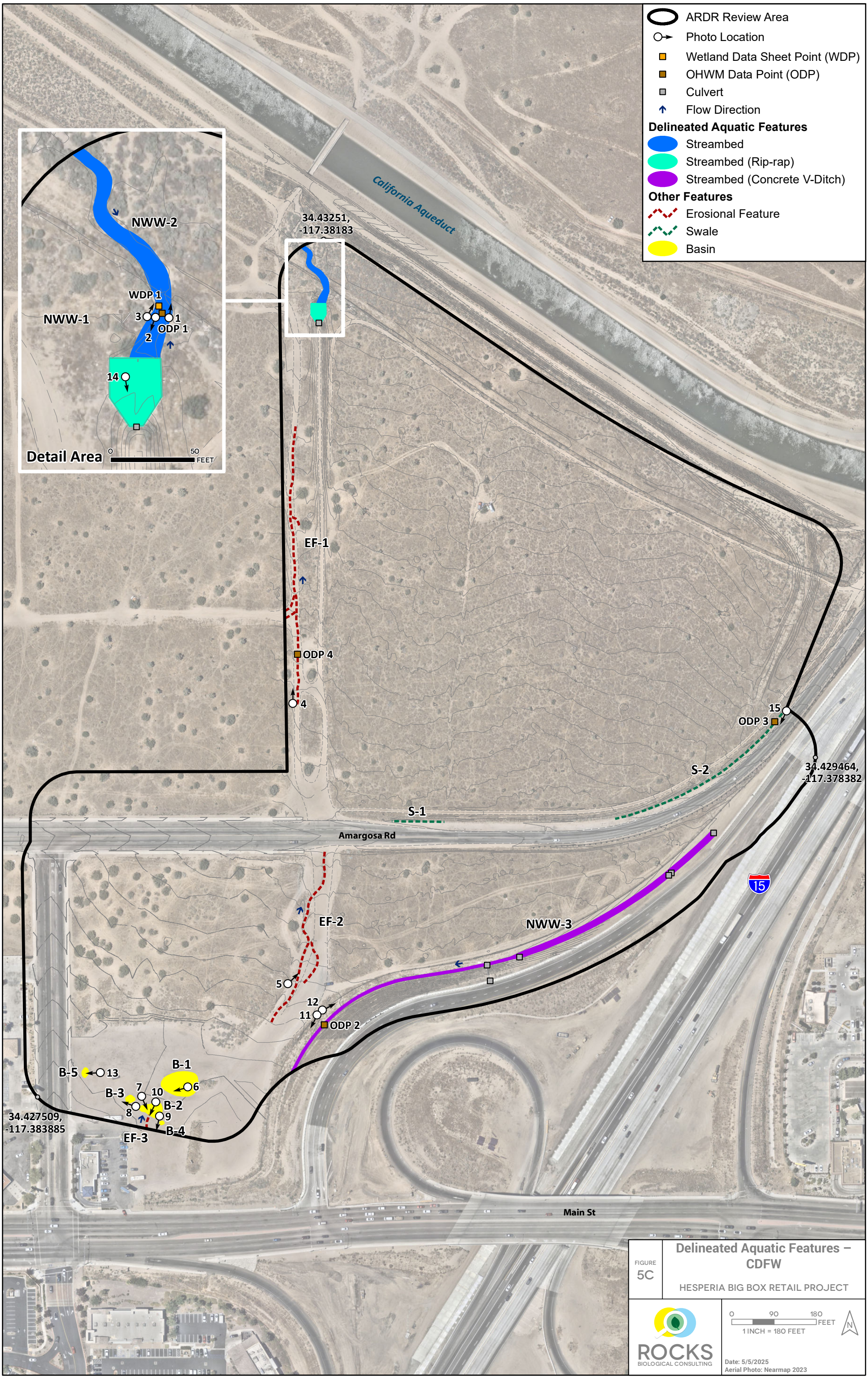

ARDR Review Area
Photo Location
Wetland Data Sheet Point (WDP)
OHWM Data Point (ODP)
Culvert
Flow Direction
Delineated Aquatic Features
Streambed
Streambed (Rip-rap)
Streambed (Concrete V-Ditch)
Other Features
Erosional Feature
Swale
Basin
California Aqueduct
34.43251, -117.38183
NWW-2
NWW-1
WDP 1
3
1
ODP 1
2
14
Detail Area
0
50
FEET
EF-1
ODP 4
4
15
ODP 3
34.429464, -117.378382
S-2
S-1
Amargosa Rd
EF-2
NWW-3
5
12
11
ODP 2
B-5
13
B-1
6
B-3
7
10
B-2
8
9
B-4
34.427509, -117.383885
EF-3
Main St
15
FIGURE
5C
Delineated Aquatic Features – CDFW
HESPERIA BIG BOX RETAIL PROJECT
ROCKS
BIOLOGICAL CONSULTING
0
90
180
FEET
1 INCH = 180 FEET
N
Date: 5/5/2025
Aerial Photo: Nearmap 2023

FIGURE 6

Vegetation

HESPERIA BIG BOX RETAIL PROJECT

ROCKS BIOLOGICAL CONSULTING

0 90 180 FEET

1 INCH = 180 FEET

Date: 2/10/2025

Aerial Photo: Nearmap 2023

APPENDIX A

CHECKLIST: MINIMUM STANDARDS FOR ACCEPTANCE OF AQUATIC RESOURCES DELINEATION REPORTS

APPENDIX A. Checklist: Minimum Standards for Acceptance of Aquatic Resources Delineation Reports, Los Angeles District Regulatory Division, USACE, March 16, 2017

Report Section/ Page Number	Minimum Standards for Acceptance of Aquatic Resources Delineation Reports	Additional Notes
N/A	1. JD REQUEST AND FORMS: A cover letter indicating whether you are requesting a jurisdictional determination (JD). ☐ If you are requesting a JD, you must complete, sign, and return the Request for Corps Jurisdictional Determination (JD) sheet. ☐ For preliminary jurisdictional determinations the Preliminary Jurisdictional Determination Form must be signed and submitted.	Property owner and/or representatives may submit a subsequent request for Corps AJD.
Section 9	2. CONTACT INFORMATION: Contact information for the ☑ applicant(s), ☑ property owner(s), and ☑ agent(s).	
N/A	3. SITE ACCESS: If the property owner or their representatives will not accompany the Corps to the site, a signed statement from the property owner(s) allowing Corps personnel to enter the property and to collect samples during normal business hours. If the property lacks direct access by public roads (in other words, access requires passage through private property not owned by the applicant), the owner or proponent must obtain permission from the adjacent property owner(s) to provide access for Corps personnel.	Property owner and/or representatives will accompany the Corps/RWQCB/CDFW for a site visit upon request.
Section 2.1	4. LOCATION: ☐ Directions to the survey area, ☐ an address (if available) and ☑ one or more set of geographic coordinates expressed in decimal degrees.	
Section 3.2.1	5. DELINEATION MANUAL CONFIRMATION: ☑ A statement confirming the delineation has been conducted in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and applicable regional supplement(s). ☑ The regional supplement(s) used must be identified. ☑ For OHWM delineations, a statement must be included confirming the use of the OHWM field guide or that it is not applicable.	
Section 6; Appendix F, Table F-1	6. AQUATIC RESOURCE(S) DESCRIPTION: ☑ A narrative describing all aquatic resources on-site and an explanation of the mapped boundaries and any complex transition zones. ☑ If the site contains resources that only meet one or two of the three wetland criteria or do not exhibit a clear OHWM, describe the rationale for their inclusion or exclusion from the delineation. ☑ Also explain if any erosional features, upland swales, ditches and other potential aquatic features were considered but not included in the delineation.	
Figure 1 and Figure 5 series; Section 6; Table 6; Appendix F, Table F-1	7. AQUATIC RESOURCE MAPPING AND ACREAGE: ☑ Map of the outside survey boundary, ☑ total extent of aquatic and proposed non-aquatic features, ☑ type of feature(s) (waters of the United States or wetland), and include ☑ the total acreage for each polygon.	
Section 3.2; Table 1	8. FIELD WORK DATES: ☑ Date(s) field work was completed.	
Appendix F, Table F-1	9. AQUATIC RESOURCE TABLE: A table listing all aquatic resources. The table must include ☑ the name of each aquatic resource (actual or arbitrary), ☑ its Cowardin type, ☑ acreage, ☑ summary of OHWM/wetland presence, ☑ dominant vegetation for each, and ☑ location (latitude/longitude in decimal	

	degrees). ☑ For linear features, the table must show both acreage and linear feet as well as channel measurements (active channel width).	
Section 4; Tables 1, 4, and 5; Appendices D and E	10. FIELD CONDITIONS: A description of existing field conditions, including ☑ current land use, ☑ normal conditions, ☑ flood/drought conditions, ☐ irrigation practices, ☑ past or recent manipulation to the site, and ☑ characteristics considered atypical (for criteria see OHWM and wetland supplement guides). ☑ Include WETS tables or pre-site visit precipitation data as appropriate: https://www.wcc.nrcs.usda.gov/climate/wets_doc.html.*	N/A for unchecked; APT data provided in lieu of WETS tables
Section 4.2	11. HYDROLOGY: ☑ A discussion of the hydrology at the site, including ☑ all known surface or subsurface sources, ☑ drainage gradients, ☑ downstream connections to the nearest traditional navigable waterway or interstate water, and ☑ any influence from manmade water sources such as irrigation.	
N/A	12. REMOTE SENSING: ☐ If remote sensing was used in the delineation, provide an explanation of how it was used and include the name, date and source of the tools and data used and copies of the maps/photographs.	N/A
Section 4.1; Table 2; Figure 4; Appendix E	13. SOILS: ☑ Soil descriptions, ☑ soil map(s), ☑ soil photos, and ☑ a discussion of hydric soils (for wetland delineations only).	
Figure 2	14. USGS QUADRANGLE: ☑ A site location map on a 7.5-minute USGS quadrangle. The map must provide ☑ the name of the USGS quadrangle, ☑ Section, ☑ Township, ☑ Range, and ☑ the latitude and longitude in decimal degree format.	
N/A	15. BULK UPLOAD FORM: ☐ For sites with 3 or more separate aquatic features a completed copy of the ORM Bulk Upload Aquatic Resources or Consolidated Excel spreadsheet must be submitted.	N/A; no Corps features
Figure 5 series	16. FIGURES: ☑ Map(s) of all delineated aquatic resources in accordance with the Final Map and Drawing Standards for the South Pacific Division Regulatory Program.	
Figure 5 series and Appendix E	17. SITE PHOTOGRAPHS: ☑ Ground photographs showing representative aquatic resource sites (or lack of), ☑ as well as an accompanying map of photo-points and table of photographic information (see Final Map and Drawing Standards for the South Pacific Division Regulatory Program item no. 8 a-c).	
Appendix C	18. DATA FORMS: ☑ Completed data forms including all essential information to make a jurisdictional determination [e.g. 2006 Wetland Determination Data Form -- Arid West Supplement; 2010 Arid West Ephemeral and Intermittent Streams OHWM Datasheet].	
Section 3	19. METHODS: ☑ A description of the methods used to survey the aquatic resource boundaries. ☑ If GPS data is used, the level of accuracy must be included. Ideally, the GPS equipment should have the capability of sub-meter (<=1 meter) level horizontal accuracy.	
Appendix H	20. GIS DATA: ☑ Digital data for the site, aquatic resource boundaries, and data point locations must be provided in a geographic information system (GIS) format, preferably either ESRI shapefiles or Geodatabase format, but GoogleEarth KMZ or KML files may be acceptable non-complex projects. Each GIS data file must be accompanied by a metadata file containing the appropriate geographic coordinate system, projection, datum, and labeling description. If GIS data is unavailable or otherwise cannot be produced and the Corps determines a site visit is necessary, the aquatic resource boundaries should be physically marked with numbered flags or stakes to facilitate verification by the Corps.	

APPENDIX B

APPLICABLE AQUATIC RESOURCE PROTECTION REGULATIONS

APPENDIX B. Applicable Aquatic Resource Protection Regulations

Several regulations have been established by federal, state, and local agencies to protect and conserve aquatic resources. The descriptions below provide a brief overview of agency regulations that may be applicable to the project.

Executive Order 11990

Executive Order 11990 aims to avoid direct or indirect impacts on wetlands from federal or federally approved projects when a practicable alternative is available. If wetland impacts cannot be avoided, all practicable measures to minimize harm must be included.

Clean Water Act

Pursuant to Section 404 of the Clean Water Act (CWA; 33 U.S.C.§ 1344), the U.S Army Corps of Engineers (Corps) is authorized to regulate any activity that would result in the discharge of dredged or fill material into waters of the U.S. (including wetlands), which include those waters listed in 33 Code of Federal Regulations (CFR) 328.3 (88 FR 61964, September 8, 2023; Revised Definition of "Waters of the United States"; Conforming). The Corps, with oversight from the U.S. Environmental Protection Agency (EPA), has the principal authority to issue CWA Section 404 permits. The Corps requires a Standard Individual Permit (SIP) for what they consider to be more than minimal impacts on waters of the U.S. Projects with minimal individual and cumulative adverse impacts on the environment may meet the conditions of an existing Nationwide Permit (NWP).

A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for all Section 404 permitted actions. The nine separate Regional Water Quality Control Boards (RWQCBs), divisions of the State Water Resources Control Board (SWRCB), provide oversight of the Section 401 certification process in California. The RWQCBs are required to provide Water Quality Certification for licenses or permits that authorize an activity that may result in a discharge from a point source into a water of the U.S. Water Quality Certification authorization "is limited to assuring that a discharge from a Federally licensed or permitted activity will comply with water quality requirements" (40 CFR 121.3).

The National Pollutant Discharge Elimination System (NPDES) is the permitting program for discharge of pollutants into surface waters of the U.S. under Section 402 of the CWA (33 U.S.C. § 1342).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq.) provides for statewide coordination of water quality regulations. The SWRCB was established as the statewide authority and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis. The RWQCBs have primary responsibility for protecting water quality in California. As discussed above, the RWQCBs regulate discharges to surface waters under the CWA. In addition, the RWQCBs are responsible for administering the Porter-Cologne Water Quality Control Act.

Pursuant to the Porter-Cologne Water Quality Control Act, the state is given authority to

regulate waters of the State, which are defined as any surface water or groundwater, including saline waters. As such, any person proposing to discharge waste into a water body that could affect its water quality must first file a Report of Waste Discharge if a Section 404 permit is not required for the activity. “Waste” is partially defined as any waste substance associated with human habitation, including fill material discharged into water bodies.

California Fish and Game Code Section 1600-1602

Pursuant to Division 2, Chapter 6, Section 1602 of the California Fish and Game Code (CFGC), California Department of Fish and Wildlife (CDFW) regulates all diversions, obstructions, or changes to the natural flow or bed, channel or bank of any river, stream or lake that supports fish or wildlife. A Notification of Lake or Streambed Alteration must be submitted to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW has jurisdiction over riparian habitats associated with watercourses and wetland habitats supported by a river, lake, or stream. Jurisdictional waters are delineated by the outer edge of riparian vegetation (i.e., drip line) or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources (e.g., riparian or wetland areas not supported by a river, lake, or stream). CDFW reviews the proposed actions and, if necessary, submits (to the applicant) a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and applicant is the Lake or Streambed Alteration Agreement.

APPENDIX C

ARID WEST WETLAND DETERMINATION DATA FORMS AND EPHEMERAL AND INTERMITTENT STREAMS OHWM DATASHEETS

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hesperia Big Box Retail Project
Project Number: N/A
Stream: ODP 1
Investigator(s): Kelsey Woldt & Travis Whitney

Date: 2/4/25 **Time:** 0940
Town: San Bernardino County **State:** CA
Photo begin file#: 1 **Photo end file#:** 2

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
Hesperia Big Box Retail Project Aquatic Resources Delineation Report

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.432212, -117.381829

Potential anthropogenic influences on the channel system:

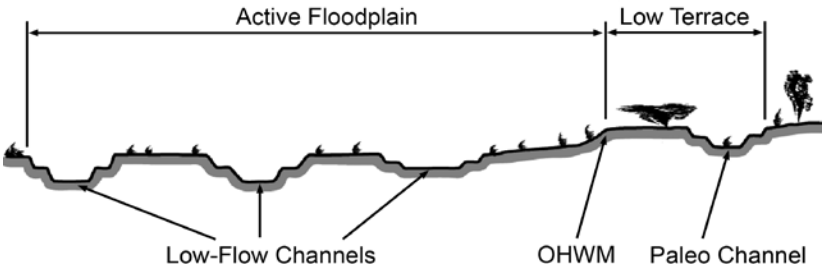
Brief site description:

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☑ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

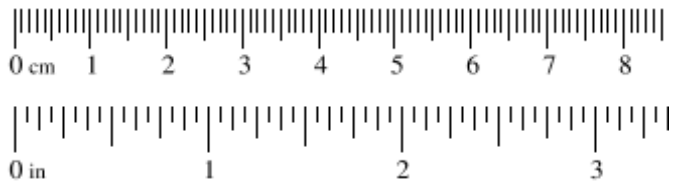


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

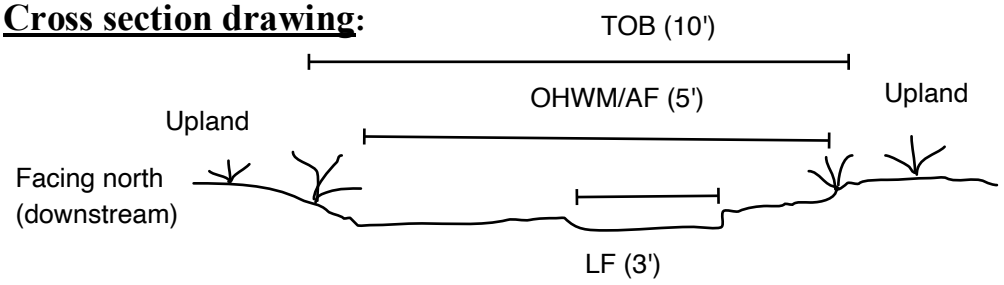
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 1 **Date:** 2/4/25 **Time:** 0940

Cross section drawing:



OHWM

GPS point: 34.432212, -117.381829

Indicators:

- ☑ Change in average sediment texture
- ☑ Change in vegetation species
- ☑ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit:

☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand with pebbles

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

3-foot wide unvegetated low flow (LF) channel with a moderately incised break in bank slope between the LF and active floodplain (AF). Coarse sand sediment texture with some pebbles throughout.

Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 1 **Date:** 2/4/25 **Time:** 0940

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Coarse sand with pebbles

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☑ Drift and/or debris
- ☑ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Approximately 5-foot wide unvegetated active floodplain (AF) with a clear break in bank slope. Coarse sand sediment texture with some pebbles throughout. Drift and debris present as trash.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace/Upland

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Medium sand

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☑ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☑ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No true low terrace present; continues from AF to upland. Soil development and surface relief define uplands. Medium sand sediment texture throughout. Vegetation: Ericameria nauseosa, Bromus madritensis, Avena barbata, Hirschfeldia incana

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hesperia Big Box Retail Project
Project Number: N/A
Stream: ODP 2
Investigator(s): Kelsey Woldt & Travis Whitney

Date: 2/4/25 **Time:** 1050
Town: San Bernardino County **State:** CA
Photo begin file#: 11 **Photo end file#:** 12

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
Hesperia Big Box Retail Project Aquatic Resources Delineation Report

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.427927, -117.381872

Potential anthropogenic influences on the channel system:

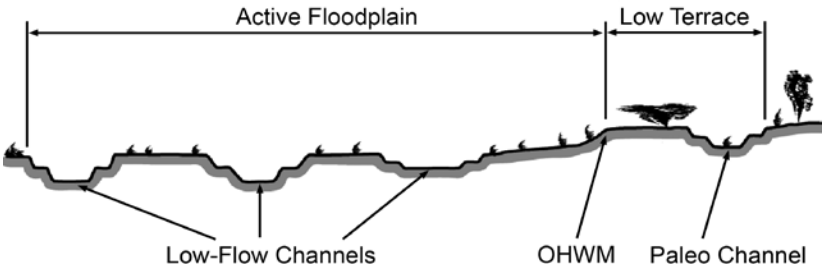
Brief site description:

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☑ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

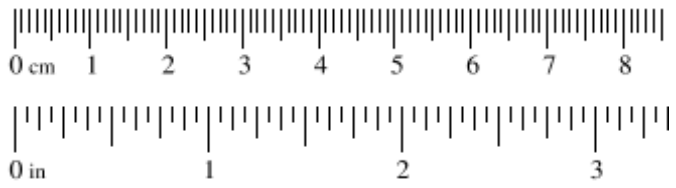


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

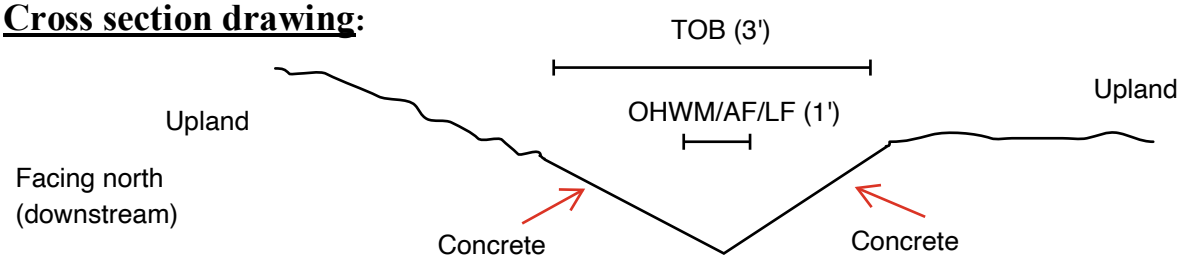
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 2 **Date:** 2/4/25 **Time:** 1050

Cross section drawing:



OHWM

GPS point: 34.427927, -117.381872

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [ ] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Low flow (LF) indistinguishable from active floodplain (AF).

Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 2 **Date:** 2/4/25 **Time:** 1050

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Concrete

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Approximately 1-foot wide unvegetated concrete active floodplain (AF) with a clear break in bank slope.

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace/Upland

GPS point: Just above AF/OHWM

Characteristics of the floodplain unit:

Average sediment texture: Medium silt

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☑ Soil development
- ☑ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

No true low terrace present; continues from AF to unvegetated uplands. Soil development and surface relief define uplands. Medium silt sediment texture throughout.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hesperia Big Box Retail Project
Project Number: N/A
Stream: ODP 3
Investigator(s): Kelsey Woldt & Travis Whitney

Date: 2/4/25 **Time:**
Town: San Bernardino County **State:** CA
Photo begin file#: 15 **Photo end file#:** 15

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
Hesperia Big Box Retail Project Aquatic Resources Delineation Report

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.429738, -117.378584

Potential anthropogenic influences on the channel system:

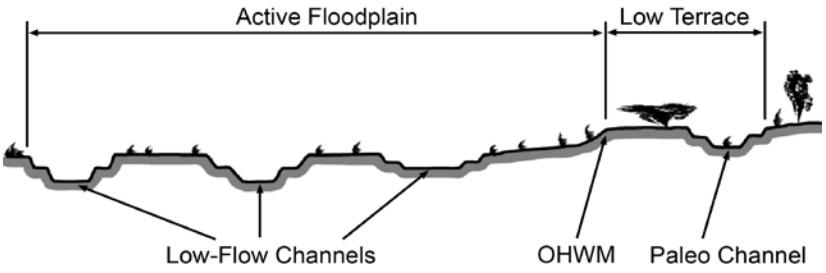
Brief site description:

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☑ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

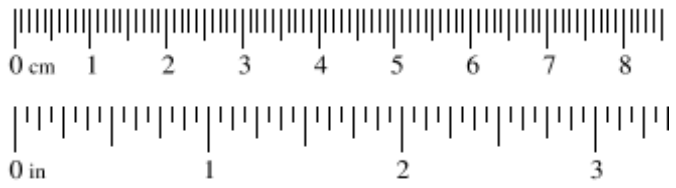


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

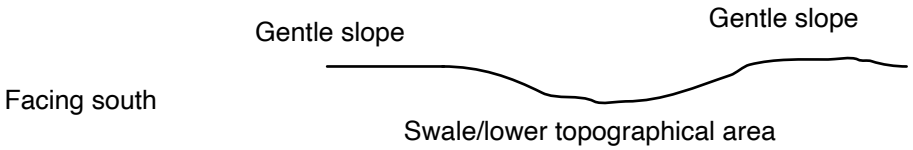
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 3 **Date:** 2/4/25 **Time:** 11:00

Cross section drawing:



OHWM

GPS point: 34.429738, -117.378584

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☐ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 3 **Date:** 2/4/25 **Time:** 1100

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☑ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Hesperia Big Box Retail Project
Project Number: N/A
Stream: ODP 4
Investigator(s): Kelsey Woldt & Travis Whitney

Date: 2/4/25 **Time:** 1130
Town: San Bernardino County **State:** CA
Photo begin file#: 4 **Photo end file#:** 4

Y ☑ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☑ Is the site significantly disturbed?

Location Details:
Hesperia Big Box Retail Project Aquatic Resources Delineation Report

Projection: NAD 83 **Datum:** WGS 84
Coordinates: 34.430088, -117.382032

Potential anthropogenic influences on the channel system:

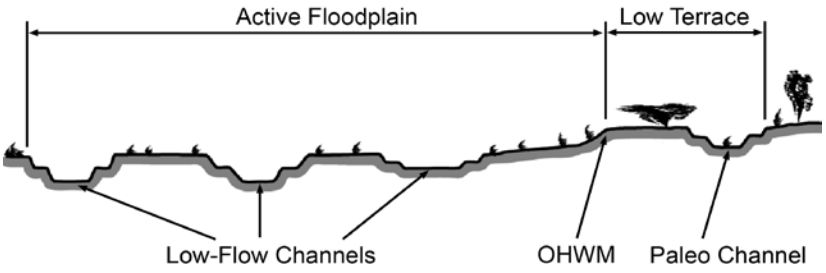
Brief site description:

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☑ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

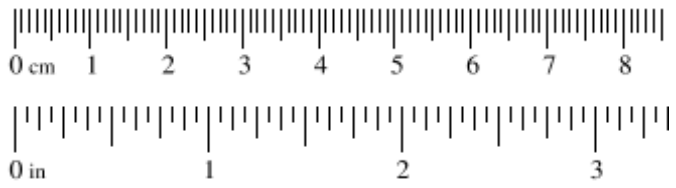


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☑ Mapping on aerial photograph
   - ☑ Digitized on computer
   - ☑ GPS
   - ☐ Other:

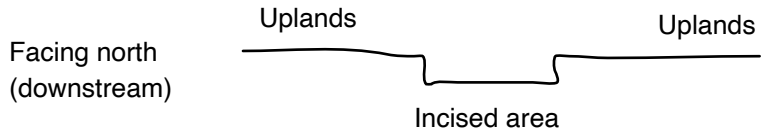
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 4 **Date:** 2/4/25 **Time:** 1130

Cross section drawing:



OHWM

GPS point: 34.430088, -117.382032

Indicators:

- ☐ Change in average sediment texture
- ☐ Change in vegetation species
- ☐ Change in vegetation cover
- ☑ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☑ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: Hesperia Big Box Retail Project **Cross section ID:** ODP 4 **Date:** 2/4/25 **Time:** 1130

Floodplain unit: ☐ Low-Flow Channel ☑ Active Floodplain ☐ Low Terrace/Upland

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☑ Low Terrace/Upland

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: _____ % Tree: _____% Shrub: _____% Herb: _____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hesperia Big Box Retail Project City/County: Hesperia/San Bernardino Sampling Date: 2/4/25

Applicant/Owner: Kimley Horn State: CA Sampling Point: WDP 1

Investigator(s): Kelsey Woldt & Travis Whitney Section, Township, Range: Township 4N, Range 5W, Sections 14, 15

Landform (hillslope, terrace, etc.): Depressional area Local relief (concave, convex, none): concave Slope (%): 0-1%

Subregion (LRR): LRR D - Interior Deserts Lat: 34.432224 Long: -117.381835 Datum: WGS 84

Soil Map Unit Name: Cajon Sand, 0 to 2 Percent Slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

Sample point taken within unvegetated drainage in area mapped as disturbed land.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 100% % Cover of Biotic Crust 0%

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Sample point taken in unvegetated portion of area mapped as disturbed land.

SOIL

Sampling Point: WDP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-24	10 YR 5/4	100%	N/A	N/A	N/A	N/A	Sand	No evidence of redox observed

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: N/A

Depth (inches): N/A

Hydric Soil Present? Yes ____ No ✔

Remarks:

Moist soils. Uniform soils throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✔ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✔ Depth (inches): N/A

Water Table Present? Yes ____ No ✔ Depth (inches): N/A

Saturation Present? (includes capillary fringe) Yes ____ No ✔ Depth (inches): N/A

Wetland Hydrology Present? Yes ✔ No ____

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

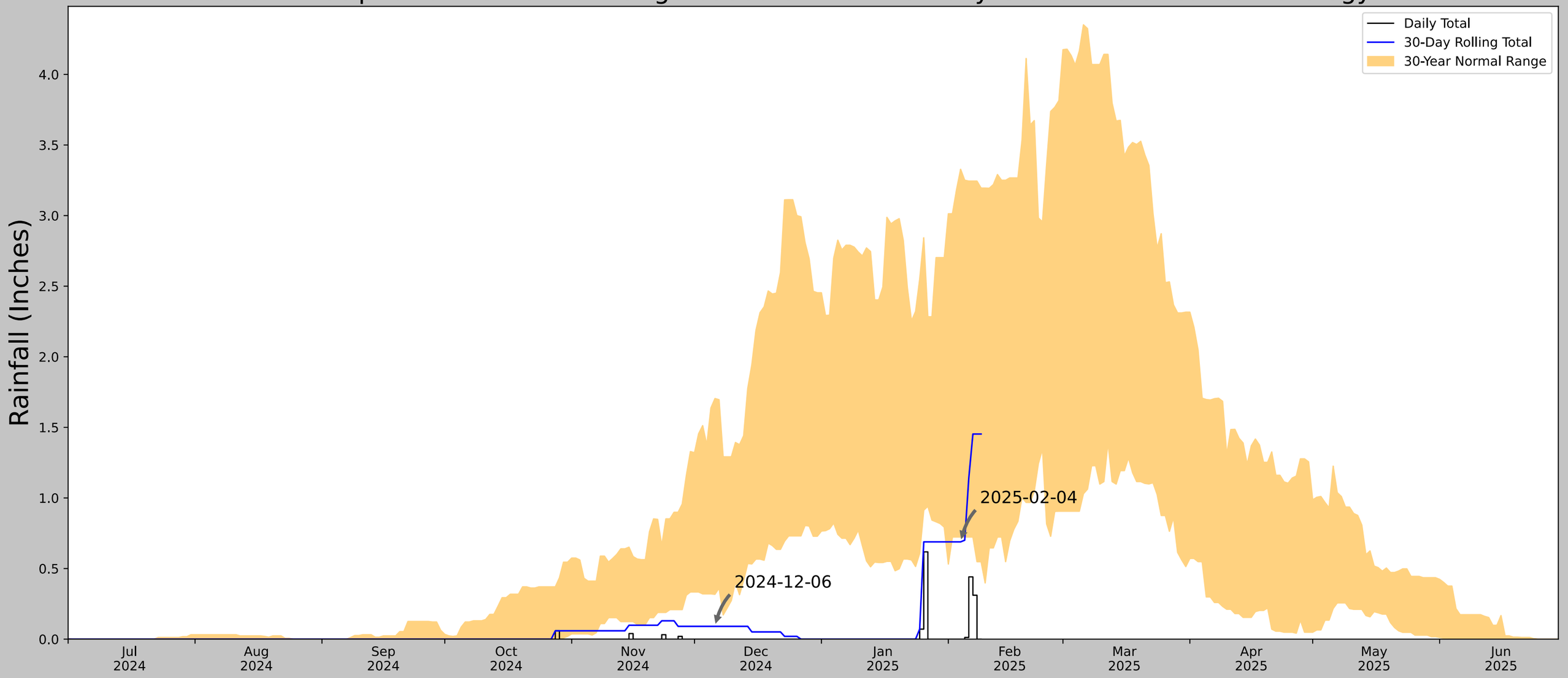
N/A

Remarks:

Primary wetland hydrology indicator (surface soil cracks) observed.

APPENDIX D

ANTECEDENT PRECIPITATION TOOL OUTPUT



Coordinates	34.429648, -117.381116
Observation Date	2025-02-04
Elevation (ft)	3489.35
Drought Index (PDSI)	Severe drought (2025-01)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-02-04	0.723228	3.328347	0.688976	Dry	1	3	3
2025-01-05	0.74252	2.825984	0.0	Dry	1	2	2
2024-12-06	0.317717	1.704331	0.090551	Dry	1	1	1
Result							Drier than Normal - 6

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ONTARIO INTL AP	34.0531, -117.5769	923.885	28.318	2565.465	85.393	9616	90
SUNNYSLOPE 1.6 W	34.0158, -117.4498	945.866	7.72	21.981	3.644	1	0
MONTCLAIR 1.2 NE	34.0857, -117.6816	1151.903	6.402	228.018	4.341	1	0
RANCHO CUCAMONGA 1.6 W	34.1223, -117.5977	1378.937	4.927	455.052	4.459	1	0
CLAREMONT 0.6 SSE	34.1135, -117.7113	1367.126	8.75	443.241	7.816	2	0
SAN BERNARDINO F S 226	34.1344, -117.2539	1140.092	19.316	216.207	12.868	1695	0
REDLANDS	34.0369, -117.1947	1410.105	21.91	486.22	20.513	37	0

APPENDIX E

SITE PHOTOGRAPHS

Appendix E

Site Photographs[1]

Hesperia Big Box Retail Project Aquatic Resources Delineation Report – February 21, 2025

Photo 1. Downstream view of Ordinary High Water Mark Data Point (ODP) 1 within Non-Wetland Water (NWW) -1 facing north, within disturbed land. NWW-2 is visible in the background (yellow arrow) within rubber rabbitbrush scrub. ODP 1 exhibited a break in bank slope, change in average sediment texture, change in vegetation species, and change in vegetation cover. (34.432211, -117.381824). February 4, 2025.

Photo 2. Upstream view of ODP 1 within NWW-1, facing south, within disturbed land. (34.432217, -117.381832). February 4, 2025.

Photo 3. View of Wetland Data Point (WDP) 1, facing north within disturbed land. WDP 1 met the hydrology parameter; however, it did not meet the hydrophytic vegetation or hydric soils parameters. (34.432206, -117.381826). February 4, 2025.

Photo 4. Downstream view of EF-1, facing north, shallow erosive feature within disturbed land. (34.429799, -117.382067). February 4, 2025.

[1] See corresponding Figures 5A – 5C for photo point locations. See Aquatic Resources Delineation Report Sections 6 and 8 and Appendix F for a description of each feature.

Photo 5. Downstream view of EF-2, facing north, shallow erosive feature within developed land. (34.428162, -117.382114). February 4, 2025.

Photo 6. View of Basin (B)-1, facing west, within developed land. (34.427562, -117.382824). February 4, 2025.

Photo 7. View of B-2, facing south, within developed land. (34.427492, -117.383145). February 4, 2025.

Photo 8. View of B-3, facing west, within developed land. (34.427471, -117.383167). February 4, 2025.

Photo 9. View of B-4, facing south, within developed land. (34.427396, -117.383017). February 4, 2025.

Photo 10. View of EF-3 draining into B-2, facing south, within developed land. (34.427475, -117.383050). February 4, 2025.

Photo 11. Downstream view of NWW-3 and ODP 2, facing east, within disturbed *Ericameria nauseosa* shrubland alliance. ODP 2 exhibited a break in bank slope and change in average sediment texture. (34.427998, -117.381896). February 4, 2025.

Photo 12. Upstream view of NWW-3 and ODP 2, facing south, within disturbed *Ericameria nauseosa* shrubland alliance. (34.427984, -117.381905). February 4, 2025.

Photo 13. View of B-5, facing west, within developed land. (34.427649, -117.383440). February 4, 2025.

Photo 14. View of concrete culvert associated with NWW-1, facing south, within disturbed land. (34.432104, -117.381889). February 4, 2025.

Photo 15. View of ODP 3 within Swale (S)-2, facing south, within disturbed land. ODP 3 exhibited a slight break in bank slope, change in vegetation species, and change in vegetation cover; however, these indicators are due to roadside vegetation clearing and construction of a berm on the west bank. ODP-3 did not exhibit any other OHWM indicators and is classified as a roadside ditch/swale. (34.429738, -117.378584). February 4, 2025.

APPENDIX F

AQUATIC RESOURCE SUMMARY TABLES

Table F-1. Aquatic Resource Summary: RWQCB

Aquatic Resource Name	Cowardin Code	Active Channel Width Range (Linear Feet)	Observed OHWM Indicators[1]	Observed Wetland Parameters	Presence of OHWM/ Wetland	Dominant Vegetation[3]	General Characteristics	Location (Latitude, Longitude)	Acre(s)	Linear Feet
NWW-1	R6	5 - 22	CVC, CVS, BBS	WH[2,]	Yes/No	Disturbed Land	Unvegetated, stormwater outfall and single-thread feature within disturbed land; originates south of review area as part of stormwater infrastructure; continues north to confluence with NWW-2 (See Photos 1 – 3 and 14 on Figures 5A – 5B and Appendix E.)	34.4321701, -117.3818356	0.02	72
NWW-2	R6	2 - 4	CVC, CVS, BBS	WH[2,]	Yes/No	Rubber Rabbitbrush Scrub[4]	Unvegetated, single-thread feature within disturbed rubber rabbitbrush scrub; originates north of review area; continues to confluence with NWW-1 (See Photo 1 on Figures 5A – 5B and Appendix E.)	34.4323604, -117.3819014	0.01	110
NWW-3	R6	1 - 3	CVC, CVS, BBS	WH[2,]	Yes/No	Rubber Rabbitbrush Scrub[4]	Unvegetated, concrete v-ditch within disturbed rubber rabbitbrush scrub; originates in culvert within review area and continues outside of review area to the south; (See Photos 11 and 12 on Figures 5A – 5B and Appendix E.)	34.4284779 -117.3802088	0.05	1,065
								Total[5]	0.08	1,247

[1] OHWM Indicators: CVS = Change in vegetation species; CVC = Change in vegetation cover; BBS = Break in bank slope
[2] Wetland Indicators: WH = Wetland hydrology
[3] See Figure 6 for all vegetation communities present within/around each aquatic resource.
[4] Mapped vegetation community; however, no vegetation technically present within the OHWM.
[5] Acreages and linear feet totals were summed using raw numbers provided during GIS analysis (available upon request) and thus, the sum of the total rounded numbers may not directly add up in this table.

Table F-2. Aquatic Resource Summary: CDFW

Aquatic Resource Name	Aquatic Resource Type	Dominant Vegetation	Width Range[1] (Min to Max) (Linear Feet)	General Characteristics	Location (Latitude, Longitude)	Acre(s)	Linear Feet
NWW-1	Unvegetated Streambed[2]	Disturbed Land	8 - 30	Unvegetated, stormwater outfall and single-thread feature within disturbed land; originates south of review area as part of stormwater infrastructure; continues north to confluence with NWW-2 (See Photos 1 – 3 and 14 on Figures 5A – 5B and Appendix E.)	34.4321701, -117.3818356	0.03	72
NWW-2	Unvegetated Streambed[2]	Rubber Rabbitbrush Scrub[4]	6 -12	Unvegetated, single-thread feature within disturbed rubber rabbitbrush scrub; originates north of review area; continues to confluence with NWW-1 (See Photo 1 on Figures 5A – 5B and Appendix E.)	34.4323604, -117.3819014	0.02	110
NWW-3	Unvegetated Streambed[2]	Rubber Rabbitbrush Scrub[4]	3 - 10	Unvegetated, concrete v-ditch within disturbed rubber rabbitbrush scrub; originates in culvert within review area and continues outside of review area to the south; (See Photos 11 and 12 on Figures 5A – 5B and Appendix E.)	34.4284779 -117.3802088	0.15	1,065
					Total[4]	0.20	1,247

[1] Corresponds with the approximate stream bank widths observed during delineation. Width range accounts for entirety of streambed delineated not individual vegetation communities.
[2] A "streambed" under CFGC Section 1602 includes the channel of a watercourse that is generally defined to include the depression between the banks worn by the regular and usual flow of water.
[3] Unvegetated streambed within mapped vegetation community; however, no vegetation technically present within the streambed.
[4] Acreages and linear feet totals were summed using raw numbers provided during GIS analysis (available upon request) and thus, the sum of the total rounded numbers may not directly add up in this table.

APPENDIX G

LITERATURE CITATIONS AND REFERENCES

APPENDIX G. Literature Citations and References

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APPENDIX H

GIS DATA (PROVIDED ELECTRONICALLY TO AGENCIES)