Draft Initial Study/Mitigated Negative Declaration for the Topaz Residential Project, Hesperia, San Bernardino County, California

MAY 2024

PREPARED FOR

San Luis Concrete Corp.

PREPARED BY

SWCA Environmental Consultants

DRAFT
INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE TOPAZ RESIDENTIAL PROJECT, HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA

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1 INTRODUCTION

San Luis Concrete Corp. (project applicant) is proposing to develop seven single-family residences on a 2.51-acre property in the City of Hesperia in San Bernardino County, California.

Project Title:	Topaz Residential Project
Lead Agency:	City of Hesperia
Lead Agency Staff Contact:	Edgar Gonzalez, Senior Planner egonzalez@cityofhesperia.us (760) 947-1330
Project Applicant:	San Luis Concrete Corp.

1.1 Project Location

The project site is located in the northwestern side of the city of Hesperia, California. The project site is located within the Low Density Residential (LDR) zone and is located directly west of Topaz Avenue, northwest of the intersection of Topaz Avenue and Courtney Street. The site consists of eight lots on a 2.51-acre property (Assessor Parcel Numbers [APNs] 0405-556-01, 0405-556-02, 0405-556-03, 0405-556-04, 0405-556-05, 0405-556-06, 0405-556-07, and 0405-556-08).

1.2 Environmental Setting

The project site is located on undeveloped land that supports scattered western Joshua trees (*Yucca brevifolia*) with an herbaceous understory dominated by non-native forbs and grasses. Existing site disturbance on-site includes vegetation removal, trash piles, and unmaintained roads associated with off-road vehicle usage.

The project site is surrounded by Topaz Avenue and single-family residential development to the east and undeveloped lands to the north. Private property, owned by the Cal-Earth Institute, is located immediately west and south of the site. The project would take access off Topaz Avenue, an existing paved, north-south directed street consisting of two lanes (one in each direction) and a sidewalk on the east side of the roadway at the project site location and both sides of the roadway directly south of the project site frontage. Topaz Avenue currently continues north past the project site approximately 320 feet before ending in a dead end. Approximately 600 feet south of the project site, Topaz Avenue connects with Live Oak Street, an arterial collector street with nearby public transit stops and continues south to connect with Main Street and beyond.

The project site is located within the Main Street and Freeway Corridors Specific Plan Area. The Main Street and Freeway Corridors Specific Plan was approved in October 2008 and established a development framework for the Main Street and Freeway Corridors, with the intent of facilitating and encouraging development and improvements along these two corridors to help realize the community's vision for the area (City of Hesperia 2021). The Specific Plan was most recently updated in July 2021. The 10,640-acre Specific Plan Area includes a range of uses including industrial, commercial, civic, institutional, residential, mixed-use, and parks and open space. The project site is within the LDR zone of the Specific Plan Area, which is intended to provide areas for single-family residences with a variety of lot sizes and housing choices.

1.3 Project Background

The eight lots on the property were established via a Tract Map that was approved in 2022 (Tract No. 20396). The Tract Map was determined to be exempt from the California Environmental Quality Act (CEQA).

1.4 Project Description

The proposed project includes construction of seven single-family residences, a 0.42-acre-foot retention basin, paved site access driveway and cul-de-sac, and other associated on-site improvements on a 2.51-acre property and off-site improvements along the property frontage (City of Hesperia Engineering Department n.d.).

The project site consists of eight total lots ranging from 7,210 to 13,924 square feet in size. The lot located in the northeastern corner of the project site would be developed with a proposed 0.42-acre-foot stormwater retention basin, while the remaining seven lots would be developed with residential single-family uses.

1.4.1 *On-Site Improvements*

A building pad would be constructed on each residential lot, ranging from 84.9 to 89.3 square feet in area. In addition, each lot would also be constructed with a minimum 25-foot-long concrete driveway. A 6-foot-tall block wall with access gates would be constructed to enclose the rear portion of each residential lot, with the cul-de-sac-facing portion of the wall being adjacent to each residential building pad. Every 10 feet the wall would omit a half-block along the bottom to allow for drainage along the westerly and northerly property lines.

The project includes construction of a 191-foot-long access road and driveway approach terminating in a cul-de-sac. This roadway would be named San Luis Street and would be constructed with a sidewalk, curb, and gutter surrounding it per City standards with ramps at each driveway of the residential lots as well as the gated access of the on-site drainage basin.

The project would include installation of water, wastewater, and stormwater pipelines within the project site. Each proposed residential lot would include a connection to a centrally located 8-inch-diameter water pipeline beneath the proposed on-site access road, which would then connect to existing 12-inch-diameter off-site City water main located beneath Topaz Avenue directly east of the project site. Similarly, each new residential lot would also include a connection to a centrally located 8-inch-diameter wastewater pipeline that would connect to the 8-inch-diameter City sewer system pipeline located beneath Topaz Avenue directly east of the project site. The water and wastewater pipelines would be located approximately 14 feet from each other horizontally. Water meters would be installed for each residential lot water connection.

A proposed 18-inch-diameter storm drain line would be installed on-site to capture on-site stormwater flows and direct them into the on-site drainage basin. A 2-foot-wide rock swale (of varying lengths) and a 9-foot by 9-foot storm drain inlet would be installed on each residential lot which would all be connected by storm drain piping that feeds into the 18-inch -wide storm drain line.

The project includes construction of a retention basin located in the northeastern lot on the project site. This basin would be approximately 10,518 square feet in area and have a storage capacity of 18,156 cubic feet (approximately 0.42 acre-feet). This basin system has been designed to provide water quality treatment of 24-hour, 100-year storm event stormwater flows as well as to reduce the volume of

stormwater flows leaving the site to be less than or equal to predevelopment conditions (Thatcher Engineering & Associates, Inc. 2021). The proposed drainage basin would be surrounded by a 6-foot-tall block wall with an access gate located at the southern end of the basin, facing San Luis Street. Construction of the retention basin would also include a gravel overflow spillway to direct stormwater flows into the City Municipal Separate Storm Sewer System in the event that the retention basin reaches capacity.

Other on-site improvements include, but would not be limited to, the installation of a streetlight on the western end of the proposed cul-de-sac, and the installation of a new three-way fire hydrant on the western end of the proposed cul-de-sac.

1.4.2 *Off-Site Improvements*

The project would include off-site improvements, including the construction of a sidewalk, curb, and gutter along the project site frontage of Topaz Avenue. Sidewalk ramps would be constructed to the north and south of the proposed access road entrance.

1.4.3 *Residences*

The project would include the development of seven single-family residences with attached garages consisting of three different designs, as detailed in Table 1 below. Each proposed residence would have four bedrooms, and a two-vehicle attached garage.

Table 1. Residential Development Details

Design	Lots Proposed On	Total Square Footage	Number of Stories	Number of Bedrooms	Maximum Height
Design A	2, 5, and 7	2,801	1	4	18 feet 8 inches
Design B	3 and 6	3,321	2	4	27 feet 9 inches
Design C	1 and 4	3,723	2	4	27 feet 3 niches

Proposed residences would generally have a craftsman architectural style and be constructed with earthtone colors and materials, including, but not limited to, stucco walls, wood trim, masonry veneer, and concrete or clay tile roofing. All proposed residences would be constructed with heating, ventilation, and air conditioning (HVAC) systems, sprinkler systems, and rooftops with solar photovoltaic-ready zones.

1.4.4 *Construction Details*

Project construction activities would result in approximately 2.51 acres of on-site site disturbance, including 3,558 cubic yards of cut and 1,901 cubic yards of fill material, to be balanced on-site. Project grading and trenching activities would result in a maximum depth of excavation of 108 inches. The project would result in an estimated addition of approximately 5,800 square feet of new impervious surface area on-site. With proposed off-site improvements, the project would result in a total of 12,735 square feet of new impervious surface area. Project construction activities would be expected to last approximately nine months.

The project includes a preliminary erosion control plan, which identifies several stormwater best management practices (BMPs) to be implemented during construction activities. These BMPs include but are not limited to, the installation of gravel bags along the perimeter of the project site, construction of a

stabilized construction entrance to the site, installation of an aboveground concrete washout area, construction of a temporary sediment basin, use of fiber rolls and gravel bags for inlet protection, street sweeping, application of soil stabilizer, and application of wind erosion control sprays.

1.5 Required Discretionary Approvals

The potential authorizations, permits, reviews, and approvals from federal, state, and local agencies that would be required for the project are listed in Table 2.

Table 2. Project Authorizations, Permits, Reviews, and Approvals

Permit / Approval / Consultation	Authorizing Agency
Vesting Tentative Tract Map	City of Hesperia
Building Permits	City of Hesperia
Encroachment Permit	City of Hesperia
CEQA Environmental Compliance	City of Hesperia
California Endangered Species Act and Western Joshua Tree Conservation Act Compliance	California Department of Fish and Wildlife

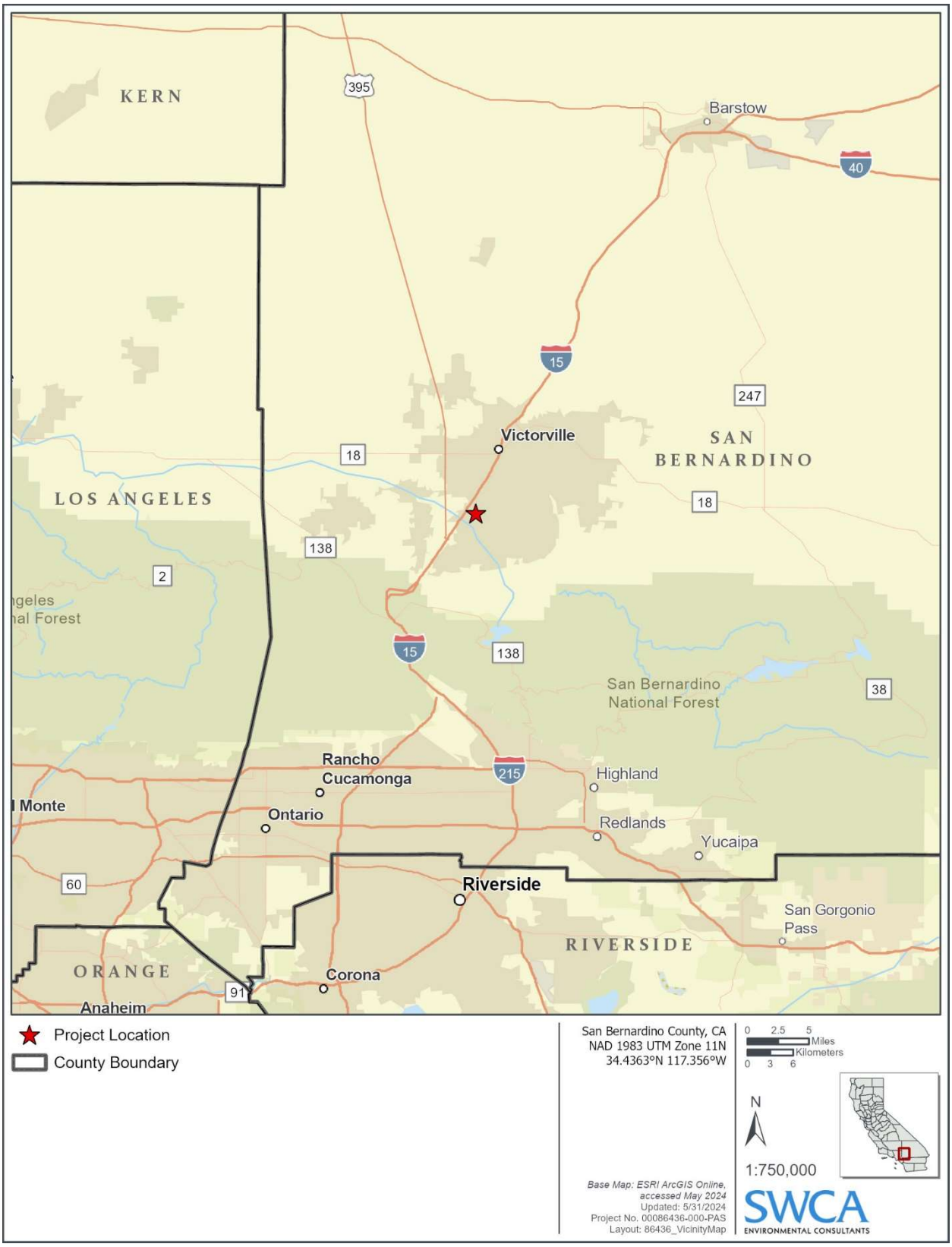

Figure 1. Project vicinity map.

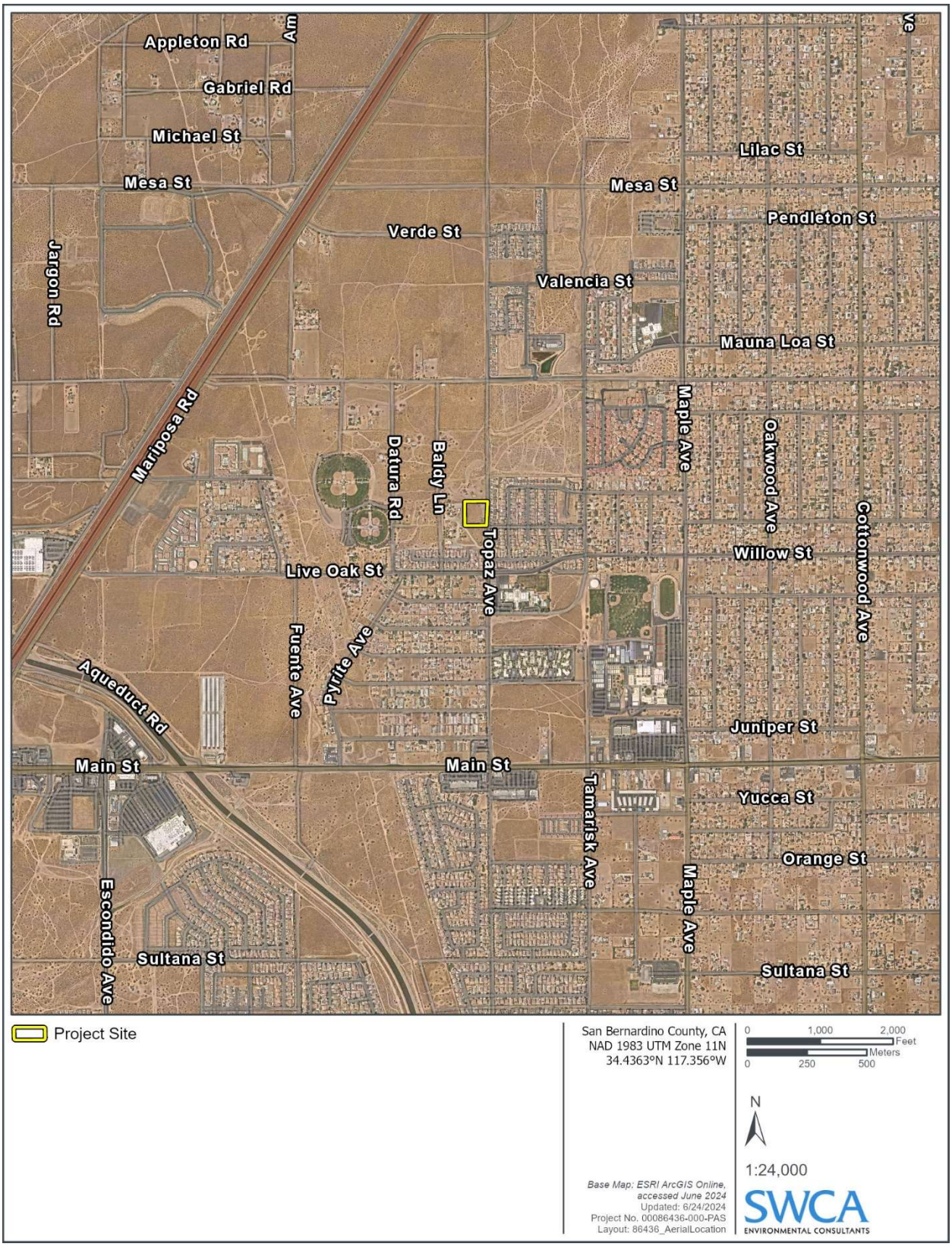

Figure 2. Project location map.

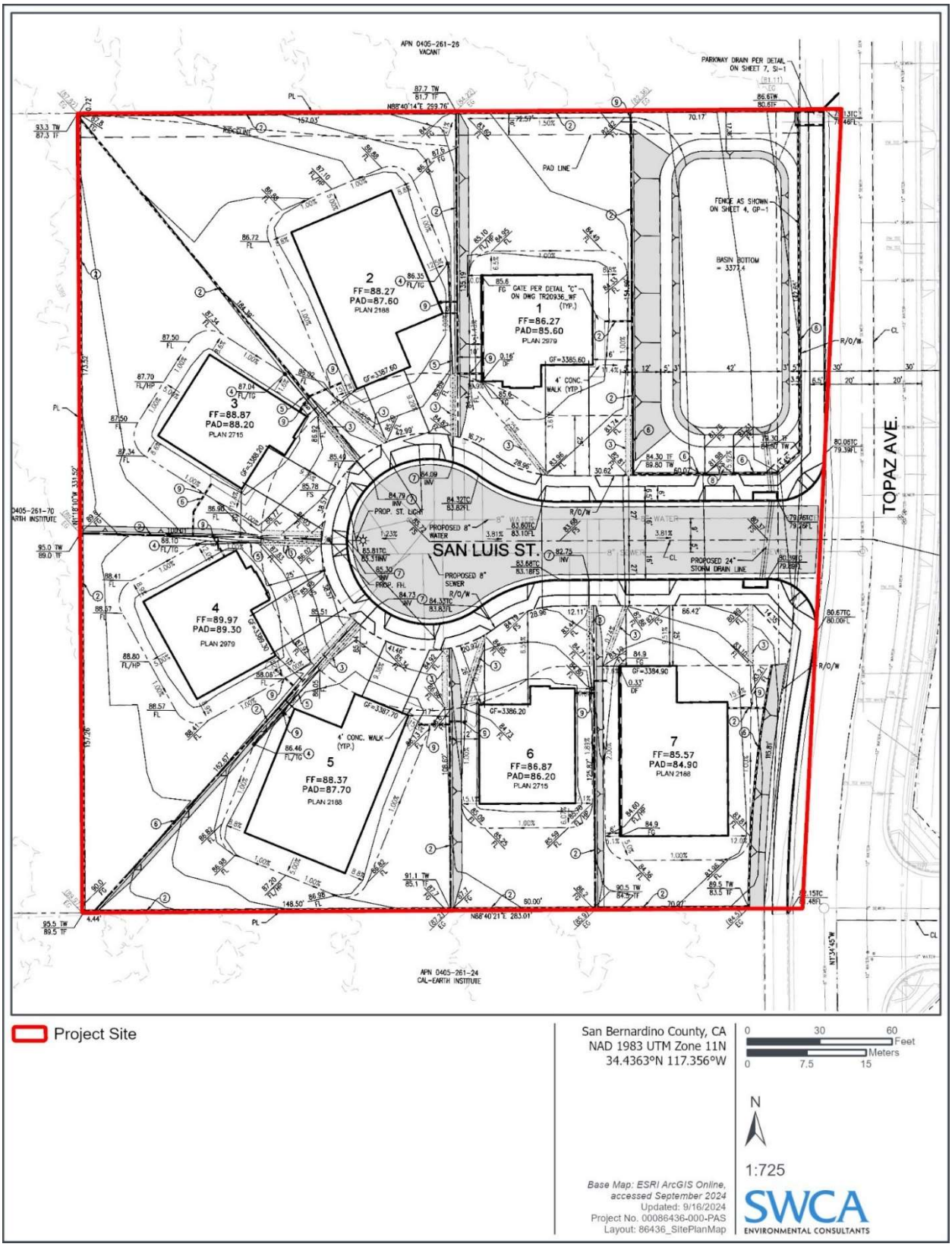

Figure 3. Project site plan.

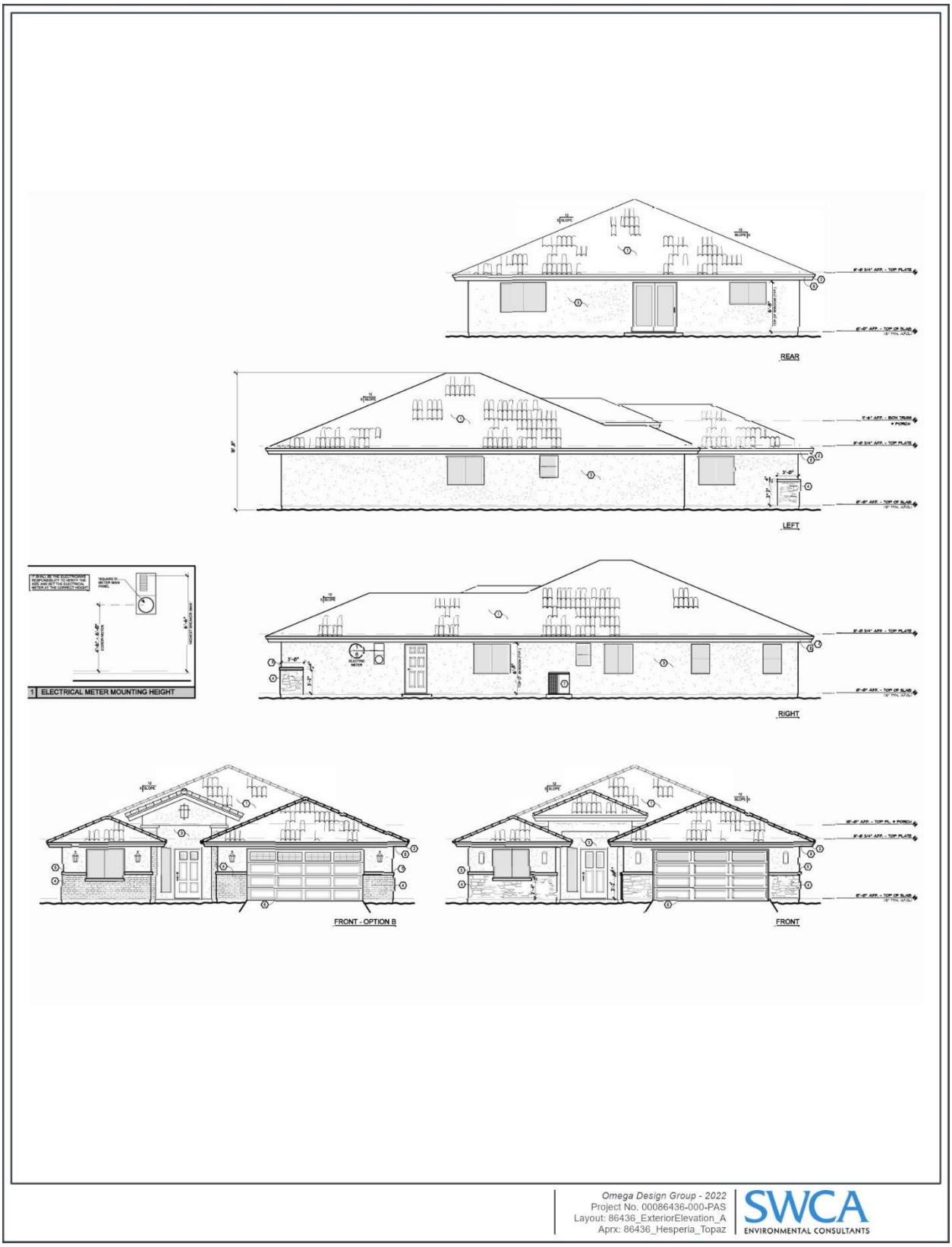

Figure 4. Residential development Design A elevations.

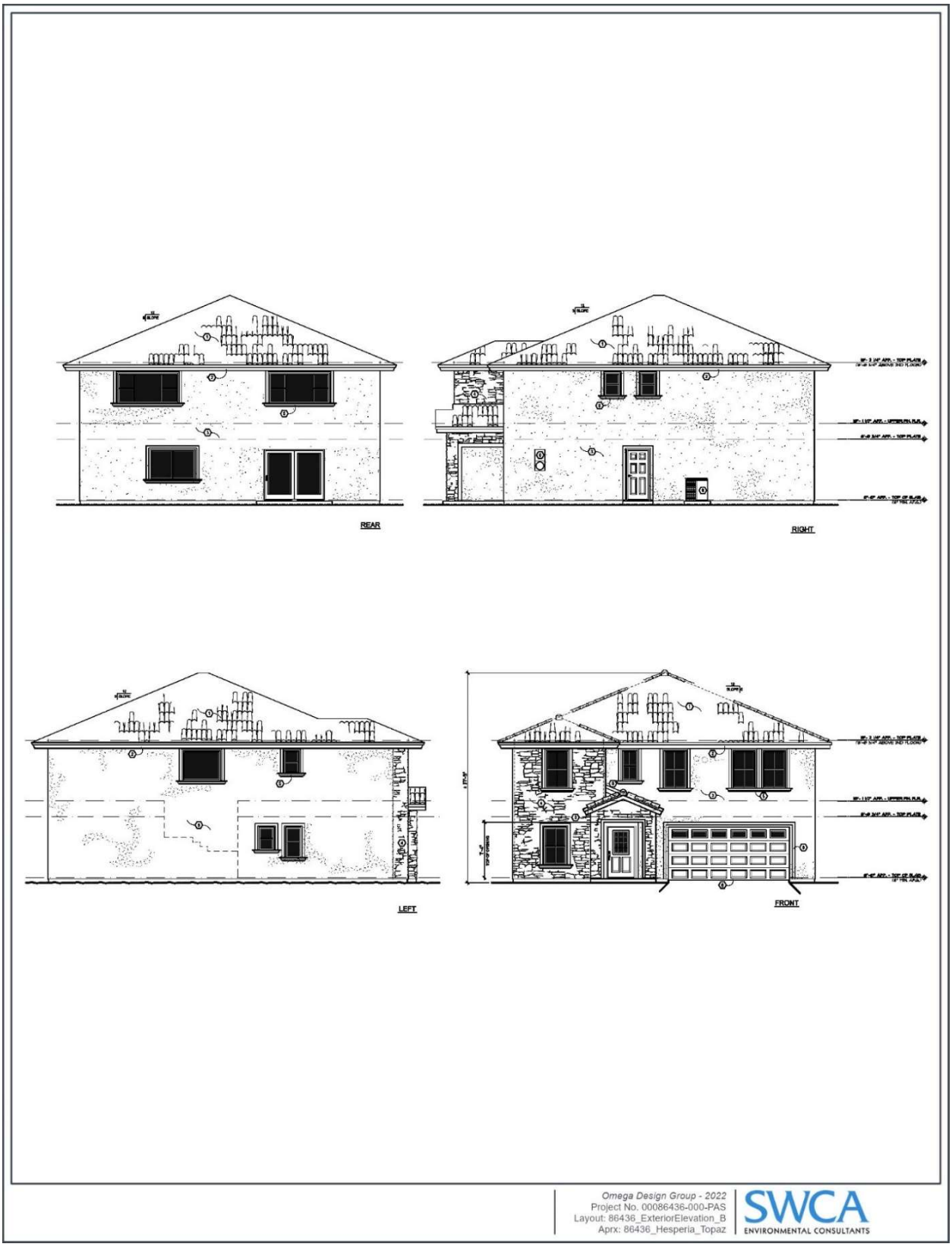

Figure 5. Residential development Design B elevations.

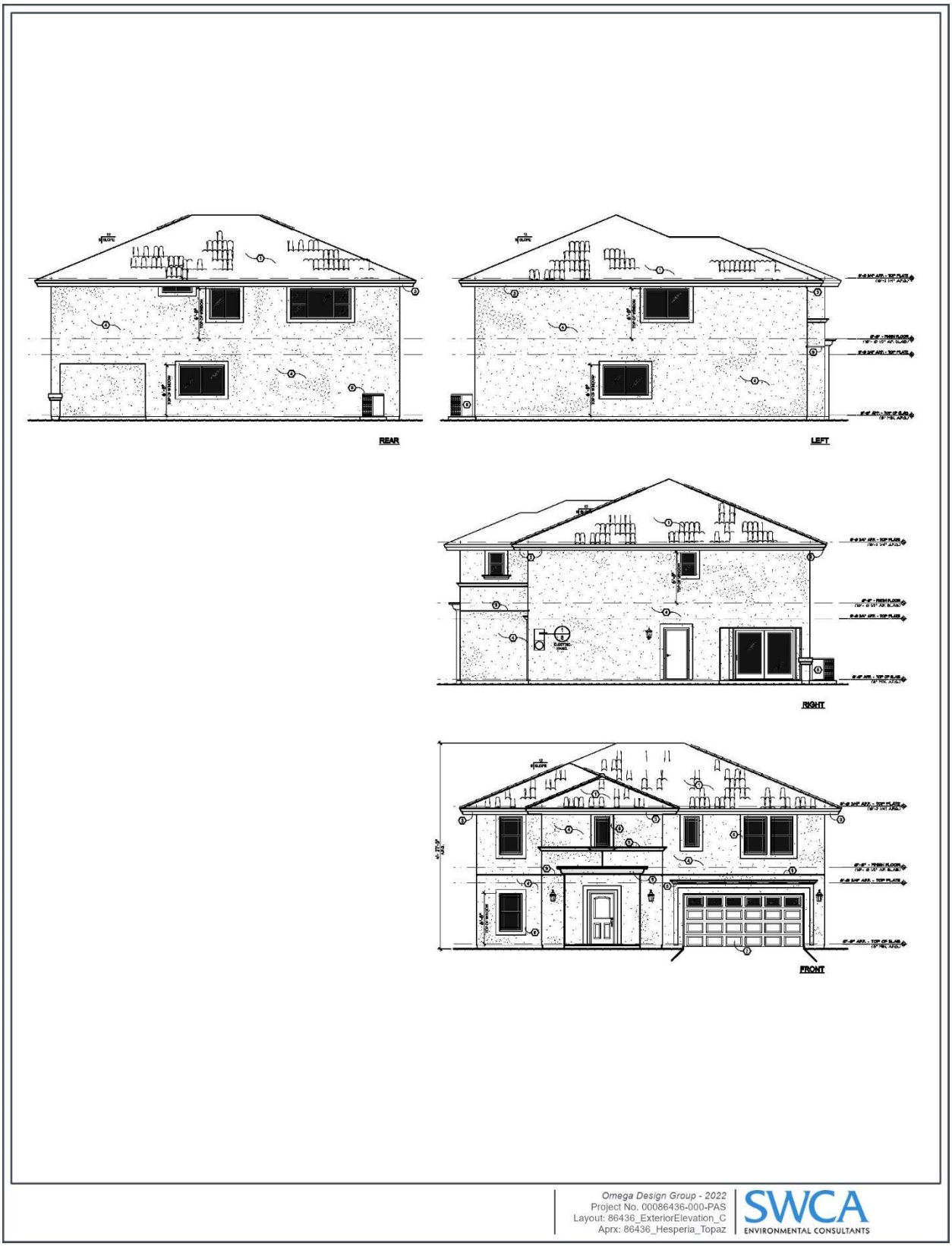

Figure 6. Residential development Design C elevations.

2 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

Environmental Factors Potentially Affected

The proposed project could have a "Potentially Significant Impact" for environmental factors checked below. Please refer to the attached pages for discussion on mitigation measures or project revisions to either reduce these impacts to less than significant levels or require further study.

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

Environmental Determination

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measure based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: _____ **Signed:** _____

I. Aesthetics

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

Setting

STATE SCENIC HIGHWAYS

The California Scenic Highway Program was created by the State Legislature in 1963 with the intention of protecting and enhancing the natural scenic beauty of California highways and adjacent corridors. A highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view. The nearest officially designated State Scenic Highway to the project site is Route 38 near Sugarloaf, California, approximately 30 miles southeast of the site (California Department of Transportation [Caltrans] 2019).

Other proximate highways with scenic qualities include California State Route 138, also known as the Pearblossom Highway/Rim of the World Scenic Byway, located approximately 8.3 miles south of the project site, and State Highway 173, located 8.8 miles south of the project site, which are both designated as Eligible for State Scenic Highway designation. An eligible state highway can become officially designated through a process in which the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a State Scenic Highway by the Caltrans Director (Caltrans 2023).

LOCAL VISUAL RESOURCE REGULATIONS AND DESIGN GUIDELINES

The City of Hesperia is surrounded by natural scenic open space areas including the Mohave River to the east, the San Bernardino and San Gabriel Mountain ranges to the south and the surrounding Victor Valley, along with neighboring hillsides and the natural desert environment. These scenic resources provide a visual relief from the human-made structures in the city and connect its residents to the natural environment. The City's General Plan includes goals and policies pertaining to the preservation, maintenance, and enhancement of scenic resources within the city (City of Hesperia 2010a). Applicable goals and policies pertaining to the proposed project include the following:

Goal LU-2: Protect and enhance the quality of life by ensuring residential development is visually pleasing and compatible with existing uses and neighborhoods as well as the natural desert environment.

- **Implementation Policy LU-2.1.** Strengthen neighborhood identity with new development that exhibits high architectural standards.
- **Implementation Policy LU-2.2.** Provide opportunities for a wide range of quality residential developments that accommodate the City's economic and demographic population.
- **Implementation Policy LU-2.3.** Provide opportunities for a variety of residential densities to accommodate rural and suburban lifestyles, and housing types for all economic and demographic segments of the City's population, with convenient access to public facilities, employment and shopping.

According to Development Code §*16.16.140 - Architectural design standards and guidelines***,** the architectural style and design of building elements should be consistent within itself and complementary with the neighborhood and with adjacent houses. To help accomplish this, the City of Hesperia Development Code includes architectural design standards and guidelines for development within the city (City Development Code §16.16.140). These standards and guidelines include, but are not limited to, the following:

- Guidelines for facades and architectural detailing, height and roof lines, front entries, doors and windows, garage doors, and materials and finishes;
- Guidelines for compatibility with the setbacks, proportions, and sales of houses within a given neighborhood;
- Guidelines for front yard landscaping; and,
- Guidelines for the type, design, and location of exterior lighting.

Guidelines for exterior lighting, as detailed in Development Code §16.16. 145.J - Exterior Lighting, include the following:

1. Exterior lighting includes all lighting fixtures on front facades, security lighting, and landscape lighting. Adequate exterior lighting shall be provided on the front of the house to ensure neighborhood safety and security. Exterior lighting that accentuates architectural and landscape elements of the property is encouraged.

2. Recessed porches must be lit.

3. Light fixtures should complement the design of the house.

4. Photo-sensitive off/on switches are strongly encouraged for energy conservation and safety.

5. Exterior lighting should be positioned so that no direct light extends into neighboring properties or public rights-of-way. Illumination should be screened from adjacent properties. Cut-off luminaries should be used to prevent nighttime light pollution.

Lastly, the Main Street and Freeway Corridor Specific Plan includes development standards for development within the LDR zone. Applicable development standards are summarized in Table 3 below.

Table 3. Applicable LDR Development Standards

Development Standard	Requirement
Residential Density	2 to 8 units/acre
Maximum Building Height	35 feet
Front Yard Setback	25 feet
Street Side Yard Setback	15 feet
Interior Side Yard Setback	10 feet on one side, 5 feet on the other side
Rear Yard Setback	15 feet
Garages and Driveways	Garages shall be located to prevent vehicles from projecting into the street/sidewalk right-of-way. In order to prevent vehicles from blocking sidewalk areas, the driveway depth shall be a minimum of 20 feet.
Walls, Fences, and Hedges	Decorative walls and fences are permitted in the setbacks as follows: (1) In no event shall any fence, wall or hedge obscure any clear sight triangle as specified earlier n this chapter. (2) In the street yard setback, a wall, fence or hedge shall not exceed three feet in height above grade when view-obscuring. However, non-view-obscuring estate-type decorative fences may be constructed in the street yard setback up to a maximum height of six feet. A non-view-obscuring estate-type fence is defined as a fence with solid masonry pillars with ornamental metal fencing between. The masonry pillars shall not be more than two feet in width and shall not be placed less than eight feet apart. (3) The wall or fence height shall not exceed six feet in the rear and interior side yard setbacks. (4) Both sides of all perimeter walls should be architecturally treated. Appropriate materials include ornamental metal grillwork, decorative masonry, stone and brick. Chain link is not considered a decorative material and shall not be used.
Landscaping	The provisions of Chapter 16.20, Article XII (Landscape Regulations) and Chapter 16.24 (Protected Plants) of the HMC shall apply. In addition, the design standards and guidelines included in Chapter 8 (Residential Design Standards and Guidelines) of this Plan shall apply.

All new development in the LDR zone is subject to the approval of a Site Plan Review pursuant to Chapter 16.12, Article II (Site Plans and Revised Site Plans) of the Hesperia Municipal Code, with the exception of all single-family residential development on previously subdivided parcels.

The Main Street and Freeway Corridor Specific Plan also includes goals and policies pertaining to preserving existing visual resources within the Specific Plan area expressed as Urban Design and Open Space goals and policies, including:

> **Goal UD-1:** Strengthen the identity of the City of Hesperia and the Specific Plan area by building upon the surrounding natural resources and amenities, and create a new image for Main Street and the Freeway Corridor that expresses an attractive, inviting, high quality character and commercial vitality.
>
> - **Policy UD-1.4:** Preserve views of the mountains - San Gabriel Mountains to the southwest and San Bernardino National Forest to the southeast.
>
> **Goal UD-4:** Enhance the pedestrian environment and driving experience within the City.

PROJECT SITE CONDITIONS AND VISUAL SETTING

The project site is located on undeveloped land that supports scattered Joshua trees with an herbaceous understory dominated by non-native forbs and grasses. Existing site disturbance on-site includes vegetation removal, trash piles, and unmaintained roads associated with off-road vehicle usage (Figures 7 and 8).

Figure 7. View of the project area, facing southwest.

Figure 8. Disturbed Joshua Tree Woodland in the project area, facing southeast.

The project site is surrounded by Topaz Avenue and single-family residential development to the east and undeveloped lands to the north. Private property, owned by the Cal-Earth Institute, is located immediately west and south of the site.

Environmental Evaluation

a) Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is generally defined as a high-quality view displaying good aesthetic and compositional values that can be seen from public viewpoints. Vistas are inherently expansive views, usually from an open area or an elevated point. Some scenic vistas are officially or informally designated by public agencies or other organizations. A substantial adverse effect on a scenic vista would occur if the project would significantly degrade the scenic landscape as viewed from public roads or other public areas. A proposed project's potential effect on a scenic vista is largely dependent upon the degree to which it would complement or contrast with the natural setting, the degree to which it would be noticeable in the existing environment, and whether it detracts from or complements the scenic vista.

The project site is located in an area with relatively flat topography and is primarily visible to the public via Topaz Avenue and other surrounding public roadways, including Baldy Lane and Courtney Street. The visual character of the project area is characterized by one- to two-story residential homes on lots generally ranging between 4,500 square feet and 6,400 square feet in size to the northeast and east, undeveloped land with scattered Joshua trees to the south and north, and dome-shaped adobe structures associated with the Cal-Earth Institute to the west. The project site is not located within a designated scenic vista, an area with a Wash Protection Overlay, or an area otherwise designated as having high scenic value. Therefore, the project would not have a substantial adverse effect on a scenic vista and *no impacts* would occur.

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

The nearest officially designated State Scenic Highway to the project site is Route 38 near Sugarloaf, California, approximately 30 miles southeast of the site (Caltrans 2019).

Other proximate highways with scenic qualities include California State Route 138, also known as the Pearblossom Highway/Rim of the World Scenic Byway, located approximately 8.3 miles south of the project site, and State Highway 173, located 8.8 miles south of the project site, which are both designated as Eligible for State Scenic Highway designation. The proposed project would not be visible from any of these highways due to distance and intervening topography and vegetation. In addition, pursuant to Appendix G of the CEQA Guidelines, this impact analysis only pertains to the State of California's "Officially Designated" scenic highways. Therefore, *no impacts* would occur.

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

The project site is located in the city of Hesperia, which meets the criteria for being designated as an urbanized area based on California Public Resources Code (PRC) Section 21071 (U.S. Census Bureau

2023). The project would be required to comply with the City's regulations and policies pertaining to scenic quality, which include the goals, policies, and development standards of the City General Plan and Main Street and Freeway Corridor Specific Plan, and the development standards set forth in the City's Development Code.

Based on a preliminary review of the current project development plans, the project would include residential development of similar size and scale to surrounding single-family residential neighborhoods and would maintain aspects of rural and suburban character in its design, including building colors and materials consistent with those found within the project vicinity. The proposed project would be compliant with the development standards pertaining to maximum building heights, residential density, and garages and driveways. However, based on the current development plans, it appears that the proposed building pads for several of the proposed residences would have an interior side setback of 5 or 6 feet, which falls below the required minimum interior side setback distance of 10 feet. At the time of application for building permits, the project applicant would be required to demonstrate full compliance with all City Development Code standards, including building setbacks.

Therefore, based on the project's required compliance with applicable regulations pertaining to scenic quality, impacts would be *less than significant*.

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

The project would include exterior lighting throughout the project site as needed to illuminate walkways and building access entryways. In addition, proposed residential development may include future components that could result in glare, such as rooftop solar panels. Due to the height at which rooftop solar panels would be mounted and the generally flat topography of the surrounding area, potential for glare from rooftop solar panels to affect surrounding land uses is low. In addition, there are no proximate sensitive land uses such as airports that could be adversely affected by glare.

All proposed exterior lighting would be required to be designed in compliance with the Guidelines for Exterior Lighting detailed in Development Code §16.16. 145.J. These guidelines include requiring exterior lights to include cutoffs to prevent nighttime light pollution and to be designed and located in a manner that does not illuminate neighboring properties or public right-of-way. At the time of application for building permits, the proposed project would be reviewed by City staff for compliance with all applicable standards regarding lighting. Compliance with these standards would ensure that the project would not create a new source of substantial light that would adversely affect nighttime views. Therefore, impacts would be *less than significant*.

Conclusion

The project site is not located within a scenic vista and is not within the viewshed of a designated State Scenic Highway. The project would be subject to review for consistency with applicable regulations governing scenic quality and exterior lighting, including the City's General Plan, Development Code, and the Main Street and Freeway Corridor Specific Plan. Therefore, project impacts associated with Aesthetics would be less than significant, and no mitigation is necessary.

Mitigation Measures

No mitigation is necessary.

II. Agriculture and Forestry Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
(b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
(c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
(d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
(e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Setting

The California Department of Conservation (CDOC) Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and current land use. For environmental review purposes under CEQA, the FMMP categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land are considered "agricultural land." Other non-agricultural designations include, but are not limited to, Urban and Built-up Land, Other Land, and Water. According to the FMMP, the project site is mostly located on land that is designated as Grazing Land, with a small strip of the western edge being designated as Other Land (CDOC 2024).

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey, the project site is underlain by Cajon sand, 0 to 2 percent slopes. This somewhat excessively drained soil has a high to very high runoff class and a depth-to-restrictive feature of more than 80 inches. The typical soil profile consists of sand, gravely sand, and stratified sand to loamy fine sand. This soil is not designated as Prime Farmland by the NRCS (NRCS 2024).

The Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agriculture or related open space use. In return, landowners receive property tax assessments

that are much lower than normal because they are based on farming and open space uses as opposed to full market value. The project site is not subject to a Williamson Act contract.

According to PRC Section 12220(g), forest land is defined as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Timberland is defined as land, other than land owned by the federal government and land designated by the California Board of Forestry and Fire Protection as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. The project site and surrounding area is not considered forestland by PRC Section 12220(g).

Environmental Evaluation

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

The project site is underlain by land designated as Grazing Land by the FMMP (CDOC 2024). The project site does not consist of designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the FMMP; therefore, the proposed project would not result in conversion of Farmland, and *no impacts* would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The project site is not located within the City's Agricultural land use or zoning designations and is not subject to a Williamson Act contract. Therefore, the project would not result in a conflict with existing zoning for agricultural use or a Williamson Act contract, and *no impacts* would occur.

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

The project site and surrounding area is not within forest land, timberland, or timberland production land use or zoning designations; therefore, the proposed project would not conflict with the zoning, or cause rezoning of, designated forest land, timberland, or timberland production, and *no impacts* would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project site and surrounding area is not designated or zoned for forest land uses and does not meet the definition of forest land established in PRC Section 12220(g). Therefore, the project would not result in the loss or conversion of forest land, and *no impacts* would occur.

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

The project site is not located in close proximity to Farmland or forest land and the project would not conflict with existing agricultural uses. The project would not increase demand on agricultural water supplies or facilities and would not affect proximate agricultural support facilities. Therefore, the project would not result in changes in the existing environment that could result in the conversion of Farmland to non-agricultural uses or forest land to non-forest uses; therefore, *no impacts* would occur.

Conclusion

The proposed project would not result in the conversion of Farmland or forest land and would not interfere with zoning for agricultural or forest land uses. Therefore, the project would not result in impacts related to agriculture and forestry resources.

Mitigation Measures

Mitigation is not necessary.

III. Air Quality

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
(a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
(b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
(c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
(d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Setting

The Federal Clean Air Act, as amended, is the primary federal law that governs air quality, while the California Clean Air Act is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). National and state standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$)—lead (Pb), and sulfur dioxide (SO_2). In addition, state standards exist for visibility-reducing particles,

sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and California Ambient Air Quality Standards (CAAQS) are set at levels that protect public health with a margin of safety and are subject to periodic review and revision.

The City of Hesperia is located within the Mojave Desert Air Basin and under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). The MDAQMD has established air quality thresholds of significance for CO, nitrogen oxides (NO_X), volatile organic compounds (VOC), sulfur oxides (SO_X), PM_{10}, $PM_{2.5}$, H_2S, lead (Pb), and carbon dioxide equivalents as shown in Table 4.

Table 4. MDAQMD Thresholds

Criteria Pollutant	Annual Threshold (tons)	Daily Threshold (pounds)
CO	100	548
NO_X	25	137
VOC	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65
H_2S	10	54
Pb	.6	3

Source: MDAQMD (2023)

OZONE

Ozone is a regional air pollutant. It is generated over a large area and transported and spread by the wind. As the primary constituent of smog, ozone is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, it is not emitted directly into the air by specific sources but is created by sunlight acting on other air pollutants (the precursors), specifically reactive organic gases (ROG) and NO_X. Sources of precursor gases number in the thousands and include common sources, such as consumer products, gasoline vapors, chemical solvents, and combustion byproducts of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. Thus, high ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

COMBUSTION EMISSIONS

Combustion emissions (ROG and NO_X) are most significant when using large diesel-fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators, and other heavy equipment. Emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation. ROG and NO_X are the critical pollutants caused by construction work because of the high output of these pollutants by the heavy diesel equipment normally used in grading operations.

CARBON MONOXIDE

CO, an odorless, colorless, poisonous gas that is highly reactive, is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is a byproduct of motor vehicle exhaust, which contributes more than 66% of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95% of all CO emissions. These emissions can result in

high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources, such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO. High CO concentrations develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

SULFATES

Sulfates (SO_4^{-2}) are particulate products that come from the combustion of sulfur-containing fossil fuels. When sulfur monoxide (SO) or SO_2 is exposed to oxygen, it precipitates out into sulfates (SO_3 or SO_4). Sulfates are the fully oxidized ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline, diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California because of regional meteorological features.

PARTICULATE MATTER

Particulate matter (PM_{10} and $PM_{2.5}$) pollution consists of very small liquid and solid particles floating in the air. Some particles are large and dark enough to be seen as soot or smoke, and others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals and can form when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. Particulate matter or airborne dusts are small particles that remain suspended in the air for long periods of time. Particulates of concern are PM_{10} and $PM_{2.5}$, which are small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, possibly leading to adverse health effects; $PM_{2.5}$ is a subset of PM_{10}.

Environmental Evaluation

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

According to the MDAQMD, a project is determined to conform with the district's attainment plans if it complies with all applicable MDAQMD rules and regulations and is consistent with regional growth forecasts (MDAQMD 2020). The project will comply with MDAQMD rules and regulations and therefore will be consistent with the district's attainment plans. Further, the project would be consistent with the land uses described in the adopted Main Street and Freeway Corridors Specific Plan Area. The project site is within the LDR zone of the Specific Plan Area, which is intended to provide areas for single-family residences with a variety of lot sizes and housing choices. Therefore, the project would not conflict with or obstruct the implementation of the applicable air quality plan, and impacts would be *less than significant.*

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

The Mojave Desert Air Basin is currently designated as non-attainment for ozone, $PM_{2.5}$ and PM_{10} under state ambient air quality standards (MDAQMD 2020).

Construction Emissions

Project construction would require the use of large diesel-fueled equipment, including scrapers, loaders, bulldozers, haul trucks, compressors, and generators, and would result in the entire 2.51-acre site being disturbed. This would result in the generation of construction dust as well as short-term construction vehicle emissions, including diesel PM, ROG, NO_X, and fugitive dust emissions (PM_{10}). Based on proposed project components, estimated construction phases and length, area of site disturbance, and other factors, estimated construction-related emissions that would result from the project were calculated using the California Emissions Estimator Model (CalEEMod version 2022.1; see Appendix A) and compared to applicable MDAQMD thresholds (Table 5).

Table 5. Construction Emissions

Criteria Pollutant	Project Emissions	MDAQMD Threshold	Exceeds Threshold?
Maximum Daily Emissions (pounds/day)			
CO	34.0	548	No
NO_X	36.1	137	No
VOC	3.73	137	No
SO_X	0.05	137	No
PM_{10}	21.5	82	No
$PM_{2.5}$	11.6	65	No
Total Annual Emissions (tons/year)			
CO	0.86	100	No
NO_X	0.68	25	No
VOC	0.07	25	No
SO_X	<0.01	25	No
PM_{10}	0.17	15	No
$PM_{2.5}$	0.09	12	No

Source: MDAQMD (2023); SWCA (2024) (see Appendix A)

Note: Estimates for PM_{10} and $PM_{2.5}$ include both fugitive dust and exhaust emissions.

Operational Emissions

Implementation of the project would result in an increase in vehicle trips, energy use, and architectural coating off-gassing that would generate criteria pollutant emissions. Long-term operational emissions were also calculated using CalEEMod and are summarized in Appendix A. Daily and annual operational emissions of criteria air pollutants are summarized in Table 6.

Table 6. Operational Emissions

Criteria Pollutant	Project Emissions	MDAQMD Threshold	Exceeds Threshold?
Maximum Daily Emissions (pounds/day)			
CO	16.0	548	No
NO_X	0.55	137	No
VOC	11.4	137	No

SO_X	0.03	137	No
PM_{10}	2.25	82	No
$PM_{2.5}$	1.93	65	No
Total Annual Emissions (tons/year)			
CO	0.95	100	No
NO_X	0.07	25	No
VOC	0.56	25	No
SO_X	<0.01	25	No
PM_{10}	0.15	15	No
$PM_{2.5}$	0.09	12	No

Source: MDAQMD (2023); SWCA (2024) (see Appendix A)

Note: Estimates for PM_{10} and $PM_{2.5}$ include both fugitive dust and exhaust emissions.

As shown in Tables 5 and 6, estimated daily and annual construction and operational emissions would not exceed the MDAQMD significance thresholds. As such, the project would not result in a cumulatively considerable net increase in emissions of any criteria pollutants for which the project region is nonattainment during construction or operation; therefore, potential impacts would be *less than significant.*

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

The project is a residential subdivision and does not produce toxic air emissions such as those generated by industrial manufacturing uses or uses that generate heavy-duty diesel truck emissions. According to the MDAQMD, sensitive receptors are considered land uses or other types of population groups that are more sensitive to air pollution exposure. Sensitive population groups include children, the elderly, the acutely and chronically ill, and those with cardio-respiratory diseases. The closest sensitive land use is the single-family homes located adjacent to the site across Topaz Street to the east. The nearest school, Topaz Preparatory Academy is located approximately 700 feet to the southeast of the project site.

The MDAQMD identified the following land uses as potentially significant generators of toxic air contaminants that could cause the exposure of sensitive receptors to substantial pollutant concentrations: industrial projects, distribution centers, major transportation projects (50,000 or more vehicles per day), dry cleaners using perchloroethylene, or gasoline dispensing facilities (MDAQMD 2020). As such, the project is not considered a substantial source of stationary pollution and would not expose sensitive receptors to substantial pollutant concentrations. Construction-related activities would result in temporary, intermittent emissions of diesel particulate matter (DPM) from the exhaust of off-road equipment and on-road, heavy-duty trucks. However, as shown in Table 5, pollutants emitted during project construction would be minimal and would not exceed MDAQMD thresholds. Additionally, the maximum daily emissions of exhaust PM_{10} (used as a surrogate for DPM) would only be 1.60 pounds during peak construction activities (Appendix A). Project construction would not expose sensitive receptors to substantial pollutant concentrations due to the relatively low mass of DPM emissions, the relatively short duration of DPM-emitting activity at the project site, and the highly dispersive properties of DPM. Therefore, the project would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be *less than significant.*

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

Typically, construction activities have the potential to emit odors from diesel equipment, paints, solvents, fugitive dust, and adhesives. Any odors generated by construction activities would be intermittent and temporary, and generally would not extend beyond the construction area. Future residential uses would not include any components or operational activities that would generate substantial long-term adverse odors. Therefore, odors generated by the project would be short-term, intermittent, and primarily undetectable. Additionally, the project site is not located in an area with known naturally occurring asbestos (NOA) (California Geological Survey [CGS] 2011). The project does not require demolition that could inadvertently release asbestos-containing material (ACM), lead paint, or other hazardous materials and contaminants. The project is not anticipated to result in other adverse emissions or odors; therefore, impacts would be *less than significant.*

Conclusion

The proposed project would result in minimal criteria pollutant emissions during construction and operation and would not exceed any MDAQMD thresholds. The project would not expose sensitive receptors to substantial pollutant concentrations and would not be a source of odors or other adverse emissions. Therefore, the project would not result in impacts related to air quality.

Mitigation Measures

Mitigation is not necessary.

IV. Biological Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
(b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐
(c) 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?	☐	☐	☐	☒
(d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
(f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Setting

FEDERAL AND STATE ENDANGERED SPECIES ACTS

The federal Endangered Species Act of 1973 (FESA) provides legislation to protect federally listed plant and animal species. Under state law, the California Department of Fish and Wildlife (CDFW) has the authority to review projects for their potential to impact special-status species and their habitats. The California Endangered Species Act of 1984 (CESA) provides legal protection for plants listed as rare or endangered, and wildlife species listed as endangered, threatened, and for species that are candidates for CESA listing. CESA prohibits the "taking" of listed and candidate species except as otherwise provided by state law. Section 86 of the California Fish and Game Code defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA applies these take prohibitions to species accepted as candidates for listing. Pursuant to the requirements of the CESA, state lead agencies (as defined under CEQA PRC 21067) are required to consult with CDFW to ensure that any action or project is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat. Additionally, CDFW encourages informal consultation on any proposed project that may impact a candidate species because they are temporarily assigned the same protections as a state-listed endangered or threatened species.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE SPECIES OF SPECIAL CONCERN

CDFW also maintains a list of California Species of Special Concern (SSC). SSC status is assigned to species that have limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value.

CALIFORNIA NATIVE PLANT SOCIETY

In addition, the California Native Plant Society (CNPS) maintains a list of plant species ranging from presumed extinct to limited distribution, based on the following:

- California Rare Plant Ranks (CRPR)
    - 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
    - 1B: Plants rare, threatened, or endangered in California and elsewhere
    - 2A: Plants presumed extirpated in California, but common elsewhere
    - 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
- California Rare Plant Threat Ranks
    - 0.1: Seriously threatened in California

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

CALIFORNIA DESERT NATIVE PLANT ACT

The California Desert Native Plant Act (CDNPA) prohibits the harvest, transport, sale or possession of certain desert native plants without a permit in San Bernardino, Inyo, Kern, Imperial, Los Angeles, San Diego, Riverside and Mono Counites. A plant removal permit would be required under the City of Hesperia's Code of Ordinances Chapter 16.24, Protected Plants articles I-II. Valid permits or wood receipts to allow for harvest of plants protected under the CDNPA may be obtained through either the sheriff or County commissioner.

WESTERN JOSHUA TREE CONSERVATION ACT

The Western Joshua Tree Conservation Act (WJTCA) prohibits the take, possession, purchase, or sale of any western Joshua tree in California unless authorized by CDFW. Pursuant to the WJTCA, CDFW may issue permits for the incidental take of western Joshua trees as long as certain criteria are met. In lieu of conducting mitigation activities permittees may pay specified fees deposited into the Western Joshua Tree Conservation Fund for the purposes of acquiring, conserving, and managing western Joshua tree conservation lands and completing other activities to conserve the western Joshua tree. CDFW may enter into an agreement with any county or city to delegate limited authority to permit the taking of a western Joshua tree associated with developing single-family residences, multifamily residences, accessory structures, and public works projects.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) protects all migratory birds, including their eggs, nests, and feathers. The MBTA was originally drafted to put an end to the commercial trade in bird feathers, popular in the latter part of the 1800s. The MBTA is enforced by the U.S. Fish and Wildlife Service (USFWS), and potential impacts to species protected under the MBTA are evaluated by the USFWS in consultation with other federal agencies and are required to be evaluated under CEQA.

CALIFORNIA FISH AND GAME CODE

California Fish and Game Code Sections 3511, 4700, 5050 and 5515 identify a Fully Protected Species (FPS) classification to identify and provide additional protection to those wildlife species that were rare or faced possible extinction. FPS may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for scientific research, for relocation of the bird species for the protection of livestock, or if they are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan.

WILDLIFE MOVEMENT CORRIDORS

Wildlife corridors and habitat connectivity are important for the movement of wildlife between different populations and habitats. Wildlife movement corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations.

BIOLOGICAL RESOURCES ANALYSIS AND METHODOLOGY

The following setting analysis and environmental evaluation in this section are based, in part, on the *Biological Resources Technical Memorandum for the Hesperia-Topaz Land Development Project* prepared by SWCA (2024). Preparation of this report included a query of the California Natural Diversity Database (CNDDB) RareFind 5 and the CNPS Rare Plant Inventory, the Consortium of California Herbaria, the U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal, the USFWS National Wetlands Inventory, and other sources.

Following completion of the desktop review, in April 2024, a biological resources reconnaissance/botanical survey was conducted of the entire project area and a 15-meter (approximately 50-foot) buffer beyond the project boundary (herein referred to as the study area). The purpose of the survey was to document existing plants, wildlife, vegetation communities, and potentially regulated aquatic resources. In conjunction with the field survey, a western Joshua tree census was conducted per the WJTCA guidelines. The biologist walked parallel transects spaced approximately 10 meters (approximately 33 feet) apart to achieve 100% visual coverage. The biologist recorded each tree on a GPS unit with submeter accuracy using the CDFW Survey123 Western Joshua Tree Census Form. Each tree was measured and photographed in accordance with the WJTCA guidelines. Trees that had evidence of flowers and/or fruit were considered mature and were noted in the Survey123 form. Measurements and locations of trees located in the inaccessible portions of the buffer were estimated from the project area. Locations of these inaccessible trees were later refined via desktop (SWCA 2024).

EXISTING CONDITIONS

The project site is located on undeveloped land with the dominant vegetation consisting of scattered Joshua trees with an herbaceous understory dominated by non-native forbs and grasses. Disturbances observed included vegetation removal, trash piles, and unmaintained roads associated with off-road vehicle usage. The project site supports two defined *Manual of California Vegetation* (MCV) vegetation communities: Joshua Tree Woodland (*Yucca brevifolia* Woodland Alliance) and Red Brome or Mediterranean Grass Grasslands (*Bromus rubens* Schismus [*arabicus, barbatus*] Herbaceous Semi-Natural Alliance), and two land cover types: Developed and Disturbed (Figure 9) (SWCA 2024).

- **Joshua Tree Woodland** is concentrated in the southern portion of the project site and study area. Within the project site, western Joshua trees are dominant in an evenly distributed tree layer consisting of a sparse herbaceous understory comprising Mediterranean grass, red brome and red-stem filaree (*Erodium cicutarium*). Isolated Joshua trees located in the northern portion of the project site were not included in the vegetation community. Joshua Tree Woodland located in the southern study area consists of western Joshua trees with a subdominant shrub layer consisting of Nevada joint-fir (*Ephedra ephedra*) and rubber rabbitbrush (*Ericameria nauseosa*).

  Due to the presence of disturbed areas within the project site, the Joshua Tree Woodland that intersects within the project site was classified as Disturbed Joshua Tree Woodland. Approximately 0.71 acre of the study area is classified as Joshua Tree Woodland and Disturbed Joshua Tree Woodland.

- **Red Brome or Mediterranean Grass Grasslands** is the predominant community generally occupying the central and northern portion of the study area. Mediterranean grass, red brome and red-stem filaree were dominant in the herbaceous layer intermixed with a variety of forbs including native species such as devil's lettuce (*Amsinckia tessellata* var. *tessellata*). Approximately 1.39 acres of the study area are classified as Red Brome or Mediterranean Grass Grasslands.

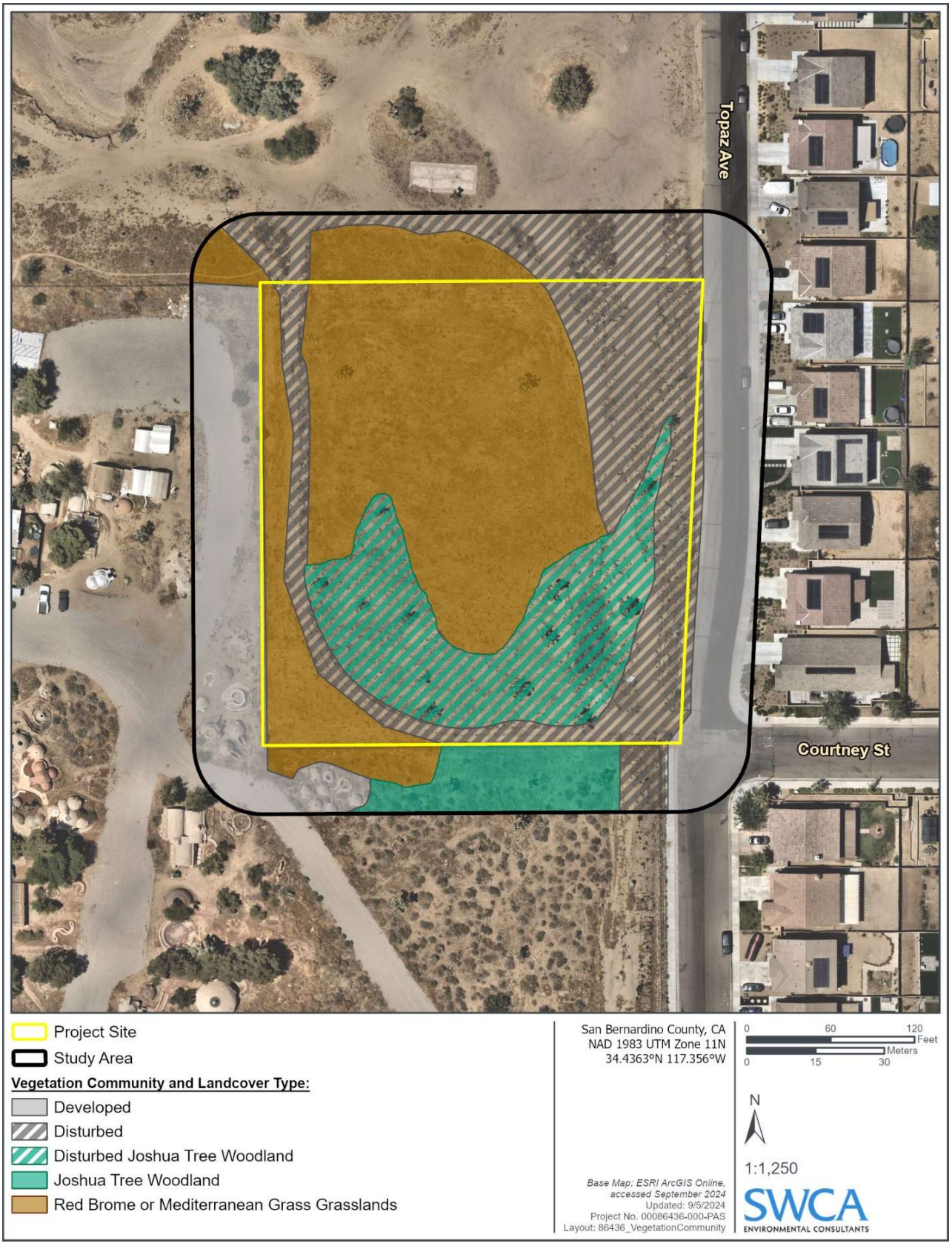

Figure 9. Vegetation communities and landcover types within the study area.

- **Developed** areas include paved roads, maintained unpaved roads, road shoulders, and structures and buildings. In the study area, this includes paved Topaz Avenue and portions of the adjacent private property that intersect with the study area. Approximately 0.92 acre of the study area is classified as Developed.
- **Disturbed** Areas classified as Disturbed are subject to heavy and include recently graded areas. These areas generally have little or no vegetation. Some areas classified as Disturbed consists of a composition of species that do not form a defined MCV alliance. In the study area, barren areas and unmaintained dirt roads were classified as Disturbed. Approximately 0.93 acre of the study area is classified as Disturbed.

Environmental Evaluation

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

Special-Status Plants

The CNDDB and CNPS query resulted in 27 special-status plants species observations located within the nine-quadrangle vicinity of the project area. Western Joshua tree (Candidate State Threatened) is present on-site. One species, beaver dam breadroot (*Pediomelum castoreum* [CRPR 1B.2; moderately threatened in California]), was determined to have low potential to occur due the marginally suitable habitat on-site and the presence of CNDDB records located in the survey area vicinity. In addition, one species was found during the survey. Seven silver chollas (*Cylindropuntia echinocarpa*), a species covered by the CDNPA, were found within the survey area. However, none were found within the project site; therefore, no impacts to this species would result from the project. Due to the anthropogenic disturbances and surrounding development on-site, no additional special-status plant species were determined to have any potential to occur within the survey area.

Western Joshua Tree

A total of 31 live western Joshua trees were detected within the survey area as a result of the census survey, including 27 within the project site and four located within the 50-foot survey area boundary. All 27 trees located within the project site, 18 of which are mature, directly overlap the proposed project infrastructure and would be removed prior to the start of construction. The four trees outside of the project site boundary but within the 50-foot survey area would potentially be exposed to indirect impacts to their root systems. Removal or indirect impacts to western Joshua trees would require consultation with CDFW and an application for an incidental take permit (ITP). A plant removal permit would also be required under the City of Hesperia's Code of Ordinances Chapter 16.24, Protected Plants articles I-II. Mitigation Measures BIO-1 through BIO-11 have been identified to ensure take of western Joshua tree is minimized to the greatest practical extent and mitigated wherever feasible. These measures, include, but are not limited to, retention of a biological monitor to ensure project work is implemented in full compliance with the ITP issued for the project, avoidance of western Joshua trees to the greatest extent possible, dust control, hazardous waste spill cleanup protocol, cleaning equipment to prevent the spread of invasive plants, and implementation of a Worker Environmental Awareness Program (WEAP). Upon implementation of these measures, impacts to western Joshua tree would be *less than significant with mitigation*.

Beaver Dam Breadroot

Beaver dam breadroot is known to occur in disturbed sites and there are some CNDDB records located in the vicinity of the project site. The nearest CNDDB records are approximately six miles away from the project site and the project site has marginally suitable habitat present, as the species is known to occur in disturbed areas. Accordingly, this species was determined to have a low potential to occur on-site. In April 2024, a biological resources reconnaissance/botanical survey was conducted of the entire study area. The biologist walked parallel transects spaced approximately 10 meters (approximately 33 feet) apart to achieve 100% visual coverage. This survey occurred during the appropriate blooming period for this species. No evidence of this species was observed during the appropriately timed field survey. However, the project site had been recently scraped at the time of the survey and due to beaver dam breadroot's tendency to establish within disturbed areas, its presence on the site during construction activities could not be ruled out. Therefore, mitigation has been identified to require a focused survey during the appropriate blooming period for the species (April–May). Although beaver dam breadroot is most easily identified in bloom, certain morphological features may allow for identification outside of the typical blooming period. Should preconstruction constraints prevent surveys during peak bloom, the project applicant should coordinate with a qualified botanist to determine if alternative identification methods are feasible during off-peak months. If beaver dam breadroot is detected on-site, the project applicant would be required to establish avoidance buffers, purchase mitigation credits and/or other compensatory mitigation, habitat restoration, and/or development of a propagation program to salvage the plant for transplantation. Upon implementation of Mitigation Measure BIO-12, impacts to beaver dam breadroot would be *less than significant with mitigation*.

Special-Status Wildlife

A desktop review revealed the potential for 41 special-status species of wildlife to occur within the general project site vicinity. Due to the project site's location surrounded by existing development and habitat degradation and fragmentation, six special-status species and nesting birds protected under the MBTA were determined to have low potential to occur within the survey area and one special-status species was determined to have moderate potential to occur on-site. Species with low potential to occur on the project site include desert tortoise (*Gopherus agassizii*), coast horned lizard (*Phrynosoma blainvillii*), Crotch's bumble bee (*Bombus crotchii*), American badger (*Taxidea taxus*), golden eagle (*Aquila chrysaetos*), and loggerhead shrike (*Lanius ludovicianus*). Species with moderate potential to occur on-site include the western burrowing owl (*Athene cunicularia*). Each of these species and their potential to be impacted by the project are described below. For each species with potential to be impacted by the project, mitigation measures have been identified to reduce potential impacts to *less than significant.*

Desert Tortoise and Coast Horned Lizard

The project site is located within the historic range of the desert tortoise, a species that is listed as Threatened per FESA and Endangered per CESA. The project site supports minimal habitat for the species due to the high level of on-site disturbance and no suitable desert tortoise burrows were observed on-site. Surrounding development including buildings and highways would limit migration of the species into the project site. The nearest occurrence is from 2000 is located approximately 4.3 miles southeast of the project site. An additional occurrence from 2007 is located 6.4 miles north of the project site. Therefore, desert tortoise was determined to have low potential to occur on-site.

The project is located within the known range of coast horned lizard, an SSC. Marginally suitable habitat is present; however, on-site disturbances and surrounding development limits the likelihood of occurrence. The nearest occurrence, from 1919 is located 2.7 miles southeast of the project site. A non-

historical occurrence, from 2008 is located 4.7 miles south closer to the foothills of the San Bernardino Mountains. Coast horned lizard was determined to have low potential to occur on-site.

Project grading, vegetation removal, and construction activities could result in direct adverse impacts to desert tortoise and/or coast horned lizard if they are present on-site during these activities. Mitigation Measure BIO-13 has been identified to require preconstruction clearance surveys for desert tortoise to be conducted by a qualified biologist prior to vegetation clearance and ground-disturbing activities in accordance with USFWS's *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009). If desert tortoise are not observed during the preconstruction clearance surveys, no impacts would occur. If desert tortoise are observed during the preconstruction surveys and impacts cannot be avoided via a no-activity buffer, the project applicant would be required to implement mitigation measures such as consultation with USFWS and CDFW to secure an ITP. Mitigation measures may include providing WEAP training, monitoring, and the establishing of exclusionary fencing. Additional measures may be required during the process of securing an ITP. USFWS and CDFW would determine the appropriate mitigation actions necessary to reduce potential impacts on this species to a less-than-significant level. Upon implementation of Mitigation Measure BIO-13, impacts to desert tortoise would be *less than significant with mitigation*.

Mitigation measure BIO-14 requires a preconstruction survey for coast horned lizard. If coast horned lizard is found within the project site, daily inspections would be required, and all found individuals would be required to be relocated outside of project disturbance areas by a qualified biologist. Upon implementation of Mitigation Measure BIO-14, impacts to coast horned lizard would be *less than significant with mitigation*.

Crotch's Bumble Bee

The project is within the known range of Crotch's bumble bee, a candidate for listing as endangered under CESA. Due to the disturbed and grubbed areas of the project site, few host plants are anticipated to be present. The nearest occurrence is from 1939, approximately 8.3 miles southeast of the project site. A 2023 iNaturalist occurrence is located 3.2 miles south southeast of the project.

While no bumblebees were observed during the field surveys conducted on-site, potentially suitable food plants for Crotch bumble bee were observed within the project site. Therefore, Crotch's bumblebee was determined to have a low potential to occur on-site. Mitigation Measure BIO-15 requires surveys of suitable habitat areas. If a Crotch's bumble bee nest is found within the project disturbance areas, the project applicant would be required to implement mitigation measures including preconstruction surveys during the appropriate lifecycle periods, establishing appropriate buffers around nests and if necessary, consultation with CDFW to secure an ITP. Upon implementation of identified mitigation measures, impacts to Crotch's bumble bee species would be *less than significant with mitigation*.

American Badger

The project is within the known range of the American badger and marginally suitable habitat is present. However, the project site is relatively small, subject to disturbances and partially surrounded by development which limits the likelihood of occurrence. The nearest CNDDB occurrence is from 1987, approximately 7.3 miles south of the project site. The American badger is typically found in grasslands and requires friable soils for digging burrows. However, American badger is a generalist occupying a wide range of habitats and could potentially utilize the site for denning. No suitable American badger dens were observed during the field survey.

Any project activities including grading or excavation work could result in impacts to this highly mobile species. Mitigation Measure BIO-16 has been identified to avoid impacts to American badgers by conducting a preconstruction survey to identify if badgers are present, inspection of dens (if present) to

determine if they are occupied, and establishment of no-disturbance buffers accordingly. Upon implementation of Mitigation Measure BIO-17, impacts to American badger would be *less than significant with mitigation*.

Golden Eagle

No suitable nesting habitat is present within the project site, but the golden eagle may forage on-site. A historic nest site was documented in 1927, approximately 6.6 miles northeast of the project site. More recent nest sites, from 2011 are documented approximately 14 miles northeast of the project site. There are some recent incidental records of the species in the general vicinity of the project site recorded in iNaturalist and eBird. Golden eagle and other birds that may only forage on-site would move out of harm's way and would not be killed or injured during construction activities. Implementation of the project would eliminate a very small fraction of the foraging habitat available for this species. Therefore, potential impacts to golden eagle would be *less than significant* and no mitigation is necessary.

Burrowing Owl

Burrowing owl is classified as a candidate species for listing under the CESA. The burrowing owl was determined to have a moderate potential to occur due to the presence of several suitable California ground squirrel (*Otospermophilus beecheyi*) burrows within the survey area.

Project construction activities such as grading and other excavation work could potentially result in direct impacts to burrowing owl individuals, habitat loss, and/or mortality, if present. Mitigation Measure BIO-12 has been identified to avoid impacts to this species during the winter season by conducting a preconstruction survey of the site and a buffer surrounding the site consistent with CDFW recommended methods described in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If burrowing owl or evidence of burrowing owl are detected during this survey, Mitigation Measure BIO-18 dictates additional surveys be conducted to determine owl occupancy and establishment of no-disturbance buffers in accordance with CDFW ITP requirements. In addition, if burrowing owl are present in project work areas during the breeding season, Mitigation Measure BIO-17 has been identified to require avoidance and protection of any breeding pair if present. Upon implementation of Mitigation Measures BIO-12, BIO-17, and BIO-18, impacts to burrowing owl would be *less than significant with mitigation*.

Loggerhead Shrike and Nesting Birds

The presence of western Joshua trees along with other towering structures and/or vegetation could provide suitable habitat for nesting birds. The project is within the known range for loggerhead shrike, an SSC. The species is known to nest in Joshua trees, which are present. However, the project site is disturbed with sparse coverage of native shrubs. The nearest CNDDB record is from 2007, 3 miles northwest of the project site. There are several eBird records in the vicinity of the project site.

Mitigation Measure BIO-17 would require a qualified biologist to conduct a preconstruction survey and establish no-work buffers if active nests are identified. Avoidance measures would include appropriate buffer sizes around the nest depending on the species and tolerance levels to construction activities. Upon implementation of BIO-17, potential impacts to loggerhead shrike and other nesting birds protected under the MBTA would be *less than significant with mitigation*.

Critical Habitat

There is no designated critical habitat for federally listed species within or immediately adjacent to the project. The nearest critical habitat, which is designated for southwestern willow flycatcher (*Empidonax traillii extimus*), is located approximately 6.2 miles northeast of the survey area (SWCA 2024).

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

Sensitive vegetation communities are defined by CDFW as those "... communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects" (CDFW 2018). Vegetation communities with a State Rank of 1, 2, or 3 are considered sensitive by CDFW. One sensitive vegetation community with a rank of 3.2, indicating the Global and State ranks, and therefore with a State Rank of 2, was identified in the survey area: Joshua Tree Woodland (SWCA 2024). Permanent direct impacts within this vegetation community would include clearing and grading of vegetated areas to accommodate the project. Compensatory mitigation addressing impacts to Joshua Tree Woodland may be incorporated into the mitigation measures implemented in support of the Joshua tree ITP. Impacts to the remaining vegetation and land cover types are not anticipated to require mitigation. Therefore, the project would have *less than significant impacts with mitigation incorporated*.

c) Would the project 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?

No state or federally protected wetlands or aquatic resources were identified during the desktop analysis and verified during the biological resource survey (SWCA 2024). Therefore, the proposed project would have *no impacts* to state or federally protected wetlands within the survey area.

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

The project site is surrounded by Topaz Avenue and single-family residential development to the east and undeveloped lands to the north. Private property, owned by the Cal-Earth Institute, is located immediately west and south of the site. No riparian corridors, critical habitats, wildlife corridors, or wildlife nursery sites were identified during the desktop analysis or during the biological resource survey conducted on-site (SWCA 2024). Therefore, the proposed project would have *no impacts* to these wildlife resources within the survey area.

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

The proposed project would require the direct removal and/or transplantation of native plant species subject to the City of Hesperia's Protected Plant Policy (Code of Ordinances Chapter 16.24), which conforms to the Desert Native Plant Act. Under this policy, the project would be required to prepare and submit a protected plant plan subject to review and approval by the City.

In addition, the City of Hesperia Conservation Element includes a Goal and policies associated with protection of the natural environment and habitat of the City's biological resources. Policies relevant to the project include requiring proper assessments in areas known as possible habitat for endangered and sensitive species before authorizing development (Implementation Policy CN-4.4) and requiring appropriate actions to preserve the habitat and protect the identified endangered or sensitive species (Implementation Policy CN-4.5). Mitigation Measures BIO-1 through BIO-18 have been identified to

avoid and mitigate project impacts to sensitive biological resources. Based on the project's required compliance with the City's Protected Plant Policy and implementation of identified mitigation measures, project impacts associated with conflicting with any local policies or ordinances related to protection of biological resources would be *less than significant with mitigation.*

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

No habitat conservation plan, natural community conservation plan, or equivalent is currently enforced in the project area. Therefore, the proposed project would have *no impacts* on compliance with local, regional or state adopted conservation plans.

Conclusion

Project grading, vegetation removal, and construction activities have the potential to adversely affect biological resources that may occur within the project site, including western Joshua trees, beaver dam breadroot, desert tortoise, coast horned lizard, Crotch's bumble bee, golden eagle, loggerhead shrike, other nesting birds protected under the MBTA, American badger, and western burrowing owl. Mitigation Measures BIO-1 through BIO-18 have been identified to avoid and/or reduce potential impacts to biological resources. Upon implementation of the identified mitigation measures, impacts to biological resources would be less than significant with mitigation.

Mitigation Measures

BIO-1 **Project Biological Monitor.** At the time of application for grading permits, the project applicant shall retain a qualified biological monitor(s) and include the monitor's credentials with grading permit application materials submitted to the City. Biological monitoring shall be performed during initial laydown and ground disturbance of any new portion of the project area, including grubbing and grading, during project construction activities. The biological monitor(s) shall have sufficient education and field experience to understand resident wildlife species biology; have experience conducting botanical and wildlife surveys in desert ecosystems. To avoid and minimize effects on biological resources, the biological monitor(s) shall be responsible for the following:

a. Be present during initial laydown and ground disturbance of any new portion of the project area, including grubbing and grading, that take place in suitable habitat for desert tortoise, burrowing owl, badger, Crotch's bumble bee, coast horned lizard, rare plants or other protected species to prevent or minimize harm or injury to these species.

b. Activities of the biological monitor(s) include, but are not limited to, ensuring compliance with all avoidance and minimization measures; halting construction activity in the area if a special-status species is found; and verifying that disturbance areas are marked with staking or flagging and that construction activities stay within the staked/flagged limits.

c. If desert tortoise, burrowing owl, American badger, or other protected species are found within a work area, the biological monitor(s) shall halt work in the vicinity; if impacts to a special-status species cannot be avoided, the biological monitor(s) will immediately notify the relevant agency(ies), who shall determine measures to be taken to ensure that the individual is not harmed. This may result in the need for the project applicant to apply for an incidental take permit (ITP).

d. Inspect the study area for any special-status wildlife species and active bird nests.

e. In the event of the discovery of a non-listed, special-status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat at least 200 feet from the limits of construction activities.

f. At the end of each work day, inspect all potential wildlife pitfalls (e.g., trenches, bores, other excavations) for wildlife and remove wildlife as necessary. If the potential pitfalls will not be immediately backfilled following inspection, the biological monitor(s) will ensure that the construction crew slopes the ends of the excavation (3:1 slope), provides wildlife escape ramps, or completely and securely covers the excavation to prevent wildlife entry. Handling of special-status species will be conducted only if the biologist and project have all required authorizations from the California Department of Fish and Wildlife (CDFW) and/or the U.S. Fish and Wildlife Service (USFWS).

g. Inspect the site to ensure trash and food-related waste is placed in closed-lid containers and that workers do not feed wildlife. Ensure that pets are not allowed on-site prior to or during construction to minimize disturbances to wildlife. Also inspect the work area each day to ensure that no microtrash (e.g., bolts, screws, etc.) is left behind.

BIO-2 **Worker Environmental Awareness Program.** Prior to the onset of construction activities, the project biological monitor shall provide Worker Environmental Awareness Program (WEAP) training. Any employee responsible for the construction, operation, and/or maintenance of the project shall attend the WEAP. The WEAP will be developed by a qualified biologist and all training materials shall be submitted to the City with a copy of the names of all staff who attended prior to the onset of construction activities. The WEAP shall include the following content:

a. The program will include information on the life history of sensitive biological resources that may occur within the project area, including western Joshua tree and other listed or special-status species that could be present on-site.

b. The program will discuss each species' legal protection status, the definitions of take under the California Endangered Species Act (CESA) and the federal Endangered Species Act (FESA), measures the project operator is implementing to protect the species, reporting requirements, specific measures that each worker will employ to avoid take of wildlife species, and penalties for violation of the CESA and the FESA.

c. An acknowledgement form signed by each worker indicating that environmental training has been completed will be kept on record.

d. A sticker will be placed on worker hard hats upon the worker's successful environmental training completion. Construction workers will not be permitted to operate vehicles or equipment within the construction areas unless they have attended the training and are wearing hard hats with the required sticker.

e. The WEAP will identify a point of contact if a listed or special-status species is observed on the project site.

BIO-3 **Western Joshua Tree Monitoring.** The biological monitor(s) shall be responsible for the following:

a. All western Joshua tree avoidance buffer(s) shall be established before the start of any activity. These buffers shall be established specifically for the Joshua trees located outside of the project site but within the study area buffer. The biological monitor(s) shall be present at the initial tailboard meeting to discuss any biological issues with the crew, and as needed, for monitoring.

b. Ground and vegetation disturbance within 50 feet of a western Joshua tree shall be avoided if possible and minimized where it cannot be avoided.

BIO-4 **Western Joshua Tree Avoidance, Minimization, and Mitigation.** If ground disturbance within 50 feet of western Joshua trees cannot be avoided, then the project applicant shall consult with the California Department of Fish and Wildlife (CDFW) and, if recommended, apply for a Western Joshua Tree Conservation Act (WJTCA) permit. The project applicant shall pay the required compensatory mitigation fee and implement all avoidance, minimization, and reporting requirements in the permit.

BIO-5 **Designated Work Areas.** All project work activities shall be limited to designated work areas. To the greatest extent possible, crews shall confine work areas to previously disturbed areas. The project applicant shall clearly delineate the boundaries of the project area with fencing, stakes, or flagging, as necessary, to remain in place throughout the duration of project construction activities.

BIO-6 **Vehicles and Staging.** Throughout all project construction activities, vehicles shall be staged or stored at least 50 feet from any western Joshua trees, unless take of that tree is authorized by the California Department of Fish and Wildlife (CDFW).

BIO-7 **Hazardous Waste.** The permittee will immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. The permittee will exclude the storage and handling of hazardous materials from the project area and will properly contain and dispose of any unused or leftover hazardous products off-site.

BIO-8 **Dust Control.** Control of dust will be implemented during construction activities. The primary mechanism for dust control will be the use of water trucks with a spray bar and hose(s). Proactive controls will be instituted to reduce the amount of dust generated during site activities, including enforcement of low speed limits (below 15 mph) for vehicular traffic, decontamination of trucks leaving the remediation work areas, and a 5-foot height limit for temporarily stockpiled material.

BIO-9 **Refuse Removal.** Upon completion of each project component, all remaining materials and equipment will be removed from the site.

BIO-10 **Invasive Plants.** To prevent the spread of invasive plants that have the potential to outcompete native plant species, all vehicles and any ground- or vegetation-disturbing equipment and tools will be cleaned free of mud, soil, and plant material before entering the project site for the first time, and any time after driving off pavement outside the project site. Cleaning can be through car washes, compressed air, pressure washes, brushes, or similar equipment.

BIO-11 **Beaver Dam Breadroot Avoidance, Minimization, and Mitigation.** Prior to any vegetation removal or ground-disturbing activities, focused surveys shall be conducted during the blooming period (April and May) or during other periods when beaver dam

breadroot is identifiable to determine whether beaver dam breadroot is present within the proposed areas of disturbance of the project. Surveys shall be conducted in accordance with the California Department of Fish and Wildlife's (CDFW's) Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Surveys shall be conducted by a qualified botanist experienced in conducting floristic botanical field surveys, knowledgeable of plant taxonomy and plant community ecology and classification, familiar with the plants of the area, including special-status and locally significant plants, and familiar with the appropriate state and federal statutes related to plants and plant collecting. If no beaver dam breadroot is found on the project site during an appropriately timed survey, no additional mitigation measures are necessary.

If beaver dam breadroot is found on the project site, the following measures shall be implemented:

a. A qualified botanist shall evaluate the feasibility of avoiding direct impacts to beaver dam breadroot and all impacts to beaver dam breadroot shall be avoided to the greatest extent feasible. In addition to avoiding direct impacts to beaver dam breadroot, potential indirect impacts during project construction and project operation shall be minimized to the maximum extent feasible through means including, but not limited to, the installation of protective fencing and environmentally sensitive area signage. Additionally, the Worker Environmental Awareness Program (WEAP) shall address beaver dam breadroot, in addition to other sensitive resources in and near the project site.

b. If beaver dam breadroot is found on-site and cannot be avoided, the project applicant shall consult with the California Department of Fish and Wildlife (CDFW) to mitigate the loss of the plant(s) through purchase of mitigation credits from a CDFW-approved bank and/or land acquisition and conservation at a mitigation ratio determined by CDFW after project analysis. Through consultation with CDFW, the project applicant shall determine feasible impact minimization and mitigation measures for this special-status species and implement mitigation measures to reduce impacts to less than significant, which may include, but are not limited to, one or more of the following mitigation strategies:

    1. Habitat restoration to mitigate for unavoidable temporary construction impacts to habitat supporting special-status plants on-site.
    2. In conjunction with academic institutions and/or regional native plant nurseries, and following consultation with CDFW, a propagation program may be developed for the salvage and transfer of special-status plant populations known to succeed after transplantation, from the project site before the initiation of construction activities. Propagation methods for the salvaged plant population must be developed on a case-by-case basis and must include the involvement of local conservation easements/preserves/open space, where applicable). The propagation of individual plant species must be performed at the correct time of year and successfully completed before project construction activities eliminate or disturb the plants and habitats of concern.
    3. Efforts may be made to salvage portions of the habitat or plant populations that could be lost as a result of implementation of the proposed project. In addition to salvaging special-status plants, such as beaver dam breadroot plants themselves, salvage efforts shall include

soil and seedbanks surrounding impacted plants, if doing so will not contribute to the spread of invasive or noxious plant species.

4. Appropriate off-site conservation opportunities may be identified and, if feasible, protected in perpetuity through conservation easements and/or purchase of mitigation bank credits from a CDFW-approved bank at a mitigation ratio determined by CDFW. The habitat value of off-site conservation areas shall be enhanced where feasible through means such as reducing grazing intensity and restricting off-highway vehicle access. The acreage of off-site habitat conserved shall meet or exceed a 1:1 ratio of impacted rare plant habitat on the project site and the final required mitigation ratio will be determined by CDFW during consultation based on factors such as the quality and area of habitat being impacted.

If beaver dam breadroot is found on-site and the above-stated off-site mitigation measures are implemented, the project applicant shall design and implement a monitoring program to evaluate compliance with and the effectiveness of these mitigation measures. The monitoring program shall be conducted by a qualified botanist, and shall take place periodically during project construction, and annually, following the completion of construction, for 5 years. The project applicant shall bear the financial responsibility for mitigation measure monitoring and reporting for the entirety of the 5-year reporting period. If the monitoring program identifies mitigation measure noncompliance or ineffectiveness, the project applicant shall fund and implement remedial measures. The project applicant shall ensure that sufficient funding exists to complete all reasonably foreseeable remedial actions prior to the commencement of project construction. Annual monitoring reports shall be submitted to CDFW.

BIO-12 **Desert Tortoise Avoidance, Minimization, and Mitigation.** Focused surveys for desert tortoise shall be conducted prior to vegetation clearance and ground-disturbing activities. These surveys shall be conducted when tortoises are most active (April–May or September–October) by qualified biologists in accordance with U.S. Fish and Wildlife Service's (USFWS's) *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009). If desert tortoise is not detected during the preconstruction surveys, then construction may commence without any further actions.

If desert tortoise is detected during the preconstruction surveys, and if it is determined that impacts to desert tortoise cannot be avoided and may result in incidental take of the species, the following mitigation measures shall be implemented, at a minimum:

a. Consultation with the California Department of Fish and Wildlife (CDFW) and USFWS shall occur and an incidental take permit (ITP) shall be secured from USFWS and CDFW if take of desert tortoise habitat (as defined by the federal Endangered Species Act) cannot be avoided. An ITP would ensure that any impacted habitat is offset with mitigation habitat at a ratio to be determined in consultation with USFWS and CDFW. If required, all permit conditions would be as followed.

b. Prior to the onset of construction activities, the project proponent should provide a Worker Environmental Awareness Program (WEAP) training, as described under Mitigation Measure BIO-2. The WEAP shall be developed by a qualified biologist and shall include information on the life history of desert tortoise and protocol for if the species is observed on the project site.

c. The project applicant shall retain a qualified biologist with demonstrated expertise with desert tortoise to monitor all construction activities and assist the project applicant in the implementation of the monitoring program. The biologist shall be approved by USFWS and CDFW prior to the commencement of project activities. The biologist shall be present during all activities immediately adjacent to or within habitat that supports desert tortoise.

d. The project applicant shall coordinate with USFWS and CDFW to determine whether desert tortoise fencing is needed. If required, the work areas would be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The qualified approved biologist shall assist in determining the boundaries of the area to be fenced in consultation with USFWS and CDFW. All workers shall be advised that equipment and vehicles must remain within the fenced work areas. Installation of the fencing and any necessary surveys shall be directed and/or conducted by the approved biologist in concurrence with USFWS and CDFW, as applicable.

e. A qualified biologist shall be on-site to survey for tortoises prior to vegetation clearance and grubbing of the project site fence line during fence installation to ensure that desert tortoises and active burrows are not impacted. Limited vegetation clearing activity, such as removal of individual Joshua trees for translocation shall be permitted prior to the installation of the fencing, provided that a qualified biologist conducts a survey for tortoises and their burrows immediately in front of each motor vehicle and site(s) of vegetation clearance. In the event that tortoises or active burrows are discovered, all work shall be immediately halted within a 500-foot radius of the tortoise or burrow.

f. If desert tortoises are found within an area that has been fenced to exclude the species, activities will cease within 500 feet of the tortoise(s). If permitted by USFWS and CDFW, the approved biologist may move the desert tortoise(s). If desert tortoises are found in a construction area where fencing was deemed unnecessary, work will cease until the approved biologist moves the individual(s) or the tortoise(s) leave on their own.

g. If an injured or dead tortoise is encountered during construction, or if any desert tortoise is injured or killed, all construction activities within 500 feet of the vicinity shall be halted and the approved biologist immediately contacted. The biologist shall have the responsibility for contacting the USFWS and the CDFW.

h. The approved biologist shall remain on-site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a regular (monthly) schedule throughout construction in order to ensure that the project is in compliance with the mitigation measures.

i. The approved biologist shall remain on-call throughout construction in the event a tortoise occurs on the site during construction.

j. Employees and contractors shall be required to look under vehicles and equipment for the presence of wildlife prior to moving vehicles and equipment. If present, the animal shall be left to move on its own or until it is removed by the approved biologist. No listed species shall be handled without concurrence from USFWS and/or CDFW, as applicable.

If an ITP is required, a Habitat Mitigation and Monitoring Plan shall be prepared that outlines all of the compensatory mitigation required for the project; the plan may cover

multiple species. The plan should identify the compensatory mitigation lands and the conservation actions proposed to ensure that they are managed to ensure the continued existence of all species covered by the plan. The plan shall include the funding assurances for long-term management of the mitigation lands. The plan shall be submitted to USFWS and/or CDFW, as applicable, as well as the City of Hesperia prior to initiation of project construction activities.

BIO-13 **Coast Horned Lizard Protection Measures.** To avoid potential impacts to coast horned lizard, a qualified biologist will conduct a preconstruction clearance survey on the day that construction activities—including vehicular access and grading activities—begin within the project site where suitable habitat is present. The preconstruction survey shall be conducted by a qualified biologist familiar with coast horned lizard and survey methods, and with appropriate permits to relocate horned lizards out of harm's way. The scope of the survey shall be determined by a qualified biologist and shall be sufficient to determine presence or absence in the project areas.

If coast horned lizards are found to be present in the proposed work areas during the preconstruction survey, the following steps shall be taken:

a. See BIO-1 (f.)

BIO-14 **Crotch's Bumble Bee Avoidance, Minimization, and Mitigation**. At the time of application for building permits, the project applicant shall prepare and submit a Preconstruction Survey Plan identifying the timing and methodology of surveys to be conducted for Crotch's bumble bee to the City of Hesperia and the California Department of Fish and Wildlife (CDFW) for review. Preconstruction surveys for Crotch's bumble bee shall be conducted by a qualified biologist prior to vegetation clearance and ground-disturbing activities in accordance with CDFW's *Survey Considerations for CESA Candidate Bumble Bee Species* (CDFW 2023). Preconstruction surveys shall occur no less than 15 days prior to the initiation of ground-disturbing activities scheduled to occur during the following lifecycle periods:

- Queen flight seasons, when queens emerge in the spring searching for nest sites (February–March);
- Gyne flight season, when gynes mate and search for overwintering habitat (September–October); and
- The colony active period when nests are detectable (April–August).

The Preconstruction Survey Plan shall provide justification for timing and method of survey design (e.g., elevation, climatic conditions, previous year's precipitation, average ambient temperature, species Colony Active Period and Queen/Gyne Flight Season, etc.). It shall also include the identification protocol(s) for Colony Active Period surveys. If photographs will be used as vouchers, the Preconstruction Survey Plan must identify the person(s) who will provide positive identification.

a. If Crotch's bumble bee nests are detected on-site, then the establishment of a 50-foot avoidance buffer will be implemented under the discretion of a biological monitor.

b. If it is determined that impacts to Crotch's bumble bee cannot be avoided and the project may result in incidental take of the species, then the project applicant shall be required to complete consultation with CDFW, and may be required to apply for an incidental take permit (ITP) pursuant to CESA to continue work

within the buffer until senescence. Additional mitigation measures may be required as part of the ITP process. An incidental take permit would ensure that any impacted habitat or nests is offset with mitigation habitat at a ratio to be determined in consultation with CDFW.

BIO-15 **American Badger Protection Measures.** To avoid direct impacts to American badger, preconstruction surveys shall be conducted for this species no more than 30 days prior to the start of construction activities. Surveys shall be conducted as described below:

a. Biological monitors shall perform preconstruction surveys for badger dens in the project disturbance area, including a 20-foot buffer beyond the disturbed area, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active.

b. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers.

c. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the biological monitor for 3 consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance.

d. If no tracks are observed in the tracking medium or no photos of the target species are captured after 3 consecutive nights, the den shall be excavated and backfilled by hand.

e. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers are trapped in the den.

f. If an active natal den is detected on the site, the California Department of Fish and Wildlife (CDFW) shall be contacted within 24 hours to determine the appropriate course of action to minimize the potential for harm or mortality. The course of action would depend on the age of the cubs, location of the den on the site (e.g., is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around active natal dens.

BIO-16 **Burrowing Owl Avoidance, Minimization, and Mitigation.** No more than 14 days prior to the start of ground disturbance, a preconstruction survey for burrowing owls in conformance with the California Department of Fish and Wildlife (CDFW) *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) shall be completed within suitable habitat at every work area and within a 150-m buffer zone of each work area. Work areas shall be resurveyed following periods of inactivity of 2 weeks or more. The project applicant/owner shall submit the results of the preconstruction survey to the City of Hesperia and CDFW.

If occupied burrows are identified on-site or within the 150-meter buffer, the following measures shall be implemented:

a. No disturbance shall occur within 160 feet (50 m) of occupied burrows during the non-breeding season (September 1–January 31) or within 650 feet (200 m) during the breeding season (February 1–August 31);

b. Occupied burrows shall not be disturbed during the nesting season (February 1–August 31);

c. Unless otherwise authorized by CDFW, a 650-foot buffer within which no activity shall be maintained between project activities and nesting burrowing owls during the nesting season. This protected area shall remain in effect until August 31 or at CDFW's discretion and, based on monitoring evidence, until the young owls are foraging independently.

If it is determined that impacts to burrowing owl cannot be avoided and may result in incidental take of the species, the biological monitor(s) shall immediately halt work. The project applicant shall be required to complete consultation with CDFW to apply for an ITP pursuant to CESA. Additional mitigation measures may be required as part of the ITP process.

BIO-17 **Nesting Bird Surveys and Nest Avoidance.** If site preparation, grading or construction activities are proposed during the typical nesting bird season (February 1–September 15), within 1 week prior to ground-disturbing activities, a nesting bird survey shall be conducted by a qualified biologist to determine presence/absence of nesting birds. Surveys shall cover all areas potentially affected by the project via direct impacts (e.g., nest destruction) or indirect impacts (e.g., noise, vibration, odors, movement of workers or equipment, etc.). If absence of nesting birds is verified, construction activities may begin upon submittal of a survey report to the City of Hesperia Planning Department. If nesting activities are detected, the following measures shall be implemented:

a. **Buffer Establishment.** If an active bird nest is observed during preconstruction surveys or during construction, a minimum no-disturbance buffer of 250 feet around active nests of non-listed passerine bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors shall be implemented using high visibility markers or fencing. These buffers shall remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

b. **Variance of Buffer Distances.** Variance from the no-disturbance buffers described above may be allowable when there is a compelling biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. Any variance from the no-disturbance buffers shall be advised and supported by a qualified biologist and CDFW shall be notified in advance of implementing a variance.

c. **Nest Monitoring.** If nest buffers are reduced, the biologist shall monitor any construction activities that take place within 250 feet of non-listed passerine bird species nests, and 500 feet of non-listed raptor nests. If nesting birds show any signs of disturbance, including changes in behavior, significantly reducing frequency of nests visits, or refusal to visit the nest, the biologist will stop work and increase the nest buffer. If appropriate on a case-by-case basis, as determined by the qualified biologist, nest monitoring may be reduced to weekly spot-check monitoring, at a minimum, if the biologist determines that the nesting birds have

shown no signs of disturbance from construction activities and a continuation of the same types of construction activities are unlikely to disturb the nesting birds.

d. **Nest Removal.** Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code shall not be moved or disturbed until a qualified biologist has determined that the nest has become inactive or young have fledged and become independent of the nest.

e. **Reporting.** A qualified biologist shall document all active nests and submit a letter report to the City of Hesperia Planning Department documenting project compliance with the MBTA, California Fish and Game Code, and applicable project mitigation measures.

BIO-18 **Dead or Injured Special-status Wildlife.** If any dead or injured special-status wildlife are discovered at the proposed project during construction, the project applicant shall stop work in the immediate vicinity. The project applicant will notify the City, the on-call biologist, and the appropriate resource agency (USFWS and/or CDFW) before construction shall be allowed to resume.

V. Cultural Resources

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

Setting

As defined by CEQA, a historical resource includes:

1. A resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR).

2. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant. The architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural records of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence.

Pursuant to CEQA, a resource included in a local register of historic resources or identified as significant in a historical resource survey shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

The City Conservation Element includes a Goal and policies related to identification and protection of historical and cultural resources, as summarized below:

> **Goal CN-5.** The City shall establish policies and procedures in compliance with state and Federal laws and regulations to identify and properly protect found historical, cultural and paleontological artifacts and resources.
>
> - **Policy CN-5.1.** Encourage the preservation of historical, paleontological and cultural resources.
> - **Policy CN-5.2.** In those areas where surveys and records indicate historical, cultural or paleontological resources may be found, undertaken appropriate surveys and record searches to determine the presence of such resources, if any.
> - **Policy CN-5.3.** Inventory and evaluate all historical, paleontological and cultural resources discovered according to CEQA regulations and the California Office of Historic Preservation.
> - **Policy CN-5.4.** Coordinate with the Archeological Information Center at the San Bernardino County Museum in reviewing potential records and in preserving such artifacts as may be found.
> - **Policy CN-5.5.** Through its CEQA and other environmental procedures, notify appropriate Native American representatives of possible development and shall comply with all State and Federal requirements concerning the monitoring and preservation of Native American artifacts and places.

The *Technical Background Report in Support of the Cultural Resource Element: City of Hesperia General Plan Update* includes a Cultural Resource Sensitivity Key Map**,** which consists of cultural resource sensitivity maps that define areas in the city of Hesperia that might hold more cultural resource sites than other areas. "Sensitivity" has been divided into low, medium, and high designations, and the gradation was developed based on recorded site information. Areas deemed "Low" generally exhibit 0 to 1 recorded site per 160 acres exhibited by modern development. "Medium" areas of sensitivity generally exhibit 2 to 9 sites per 160 acres and are focused along important historic road alignments. Areas of "High" sensitivity generally exhibit 10 or more sites per 160 acres and are located near permanent water sources. In addition to utilizing the number of previously known cultural resources of 160 acres, sensitivity zones were also developed utilizing knowledge about landforms and water resources. Based on the Cultural Resource Sensitivity Key Map, the project site is located in an area with low cultural resource sensitivity (Michael Brandman Associates 2010).

Environmental Evaluation

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

A records search was conducted by SWCA Environmental Consultants for the project site that included a review of the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS). The records search was conducted in person and the results concluded that there were 10 historic sites recorded within a 0.5-mile buffer of the project site, but none of these sites were located immediately adjacent to the site. The records search also revealed that the project site had been subject to a prior cultural resources study which included an intensive level pedestrian survey in 2010 which concluded that no historic or cultural resources were identified.

The project site does not contain, nor is it located near, any historic resources identified in the National Register of Historic Places or California Register of Historic Resources. The project site does not contain structures of historic age (50 years or older) that could be potentially significant as a historical resource. Therefore, the project would not result in an adverse change in the significance of a historical resource and *no impacts would occur.*

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

Project construction activities would result in approximately 2.51 acres of on-site site disturbance, including 3,558 cubic yards of cut and 1,901 cubic yards of fill material, to be balanced on-site. Project grading and trenching activities would result in a maximum depth of excavation of 108 inches. Based on the Cultural Resource Sensitivity Key Map, the project site is located in an area with low cultural resource sensitivity (Michael Brandman Associates 2010). A records search was conducted by SWCA Environmental Consultants for the project site that included a review of the SCCIC of the CHRIS. The records search was conducted in person and the results concluded that there were 10 historic sites recorded within a 0.5-mile buffer of the project site; however, none of these sites were located within or immediately adjacent to the site. The records search also revealed that the project site had been subject to a prior cultural resources study which included an intensive level pedestrian survey in 2010 which concluded that no historic or cultural resources were identified within the project site. This study also included a geoarchaeological assessment which indicated that the site is predominately made up of Pleistocene sediments, which are generally too old for archaeological resources.

In addition, SWCA Environmental Consultants conducted a records search of the Sacred Lands File via the Native American Heritage Commission. The results of this search indicate whether a tribal entity has any known sacred sites in the general vicinity; however, the search does not identify any specific locations of these sites. The Sacred Lands File (SLF) search returned with positive results. While the SLF search indicates that a tribe has identified one or more sacred sites in the general vicinity of the project, there are no known sacred sites or other cultural resources known to occur within the project site.

Based on the low archaeological sensitivity of the site, the negative results of previous archaeological pedestrian survey results, and the results of the geoarchaeological assessment of the site, the project's potential to disturb archaeological resources is low. However, the project would still have the potential to result in impacts to previously unidentified subsurface resources within the site during construction and grading activities, if present. Mitigation Measures CR-1 through CR-3 have been identified to require the project applicant to retain a qualified archaeologist, conduct worker environmental awareness training, and implement appropriate protocol in the event an archaeological resource is discovered during project construction activities. With the implementation of these mitigation measures, impacts to archaeological resources would be *less than significant with mitigation*.

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

Based on existing conditions and results of the intensive pedestrian survey conducted on-site and negative results of the SCCIC records search, buried human remains are not expected to be present in the site area. However, the discovery of unknown human remains is possible during ground-disturbing activities associated with the proposed project. In the event of an accidental discovery or recognition of any human remains, California Health and Safety Code Section 7050.5 requires that no further disturbances shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. Mitigation Measure CR-4 has been identified to require these measures to be included on all relevant sheets of the project grading and construction plans. Potential impacts related to the disturbance of human remains would be less than significant with the incorporation of Mitigation

Measure CR-4. Therefore, impacts related to disturbance of human remains would be *less than significant with mitigation.*

Conclusion

The project site does not contain any known historical or archaeological resources. The project would have the potential to result in adverse impacts to previously unidentified subsurface archaeological resources and/or human remains. Mitigation measures have been identified to reduce these impacts to a less than significant level. Therefore, the project's impacts associated with cultural resources would be less than significant with mitigation.

Mitigation Measures

CR-1 **Retain a Qualified Archaeologist.** At the time of application for grading or construction permits, whichever occurs first, the project applicant shall submit evidence of retaining a qualified archaeologist for the development and implementation of the worker environmental awareness training to be conducted for all construction personnel as described under Mitigation Measure CR-2, below.

CR-2 **Worker Environmental Awareness Training.** Prior to initial ground-disturbing activities, the project archaeologist shall conduct a brief construction worker awareness training for all construction personnel. This training shall include, but not be limited to, the following information:

a. Review the types of archaeological artifacts that may be uncovered;

b. Provide examples of common archaeological artifacts to examine;

c. Review what makes an archaeological resource significant to archaeologists and local Native Americans;

d. Review reporting requirements, relevant environmental laws, and penalties;

e. Describe procedures that would be followed in the event of a new discovery;

f. Best management practices;

g. Responsibilities of project personnel; and

h. Who to contact in the event of an inadvertent discovery, inclusive of local Native American tribes.

The name and qualifications of the archaeologist who provided the training and a list of all construction personnel who completed the training shall be provided to the City prior to initiation of construction activities.

CR-3 **Inadvertent Discovery of Archaeological Resources Protocol.** If cultural resources are encountered during subsurface earthwork activities, all ground-disturbing activities within a 60-foot radius of the find shall cease, the City shall be notified immediately, and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work shall not continue until the project archaeologist assesses the find and determines the need for further study. If the find includes Native American-affiliated materials, a local Native American tribal representative will be contacted to work in conjunction with the project archaeologist to determine the need for further study. Additionally, the Yuhaaviatam of San Manuel Nation Cultural Resources Department (YSMN) shall be contacted, as detailed within TCR-1, regarding any pre-contact finds

and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment. A standard inadvertent discovery clause shall be included in every grading and construction contract to inform contractors of this requirement. Any previously unidentified resources found during construction shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist.

If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan, in conjunction with locally affiliated Native American representative(s) as necessary, that will capture those categories of data for which the site is significant. The archaeologist shall also perform appropriate technical analysis, prepare a comprehensive report, file it with the South Central Coastal Information Center and the City of Hesperia Planning Department, and provide for the permanent curation of the recovered materials.

In addition, if significant pre-contact cultural resources, as defined by CEQA, are discovered and avoidance cannot be ensured, the archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to YSMN for review and comment, as detailed within TCR-1. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly.

CR-4 **Discovery of Human Remains Protocol.** In the event that human remains are exposed during earth-disturbing activities associated with the project, an immediate halt work order shall be issued, and the City of Hesperia shall be notified. California Health and Safety Code Section 7050.5 requires that no further disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to California Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner shall notify the Native American Heritage Commission within 24 hours. These requirements shall be printed on all relevant sheets of building and grading plans.

VI. Energy

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

Setting

The project site is located in the Southern California Edison (SCE) service area. The 2022 SCE electric power mix consists of 33.2% renewable energy sources (SCE 2022).

STATE BUILDING CODE REQUIREMENTS

The California Building Code (CBC) contains standards that regulate the method of use, properties, performance, or types of materials used in the construction, alteration, improvement, repair, or rehabilitation of a building or other improvements to real property. The CBC includes mandatory green building standards for residential and nonresidential structures, the most recent version of which is referred to as the *2023 Building Energy Efficiency Standards.* These standards focus on four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to the exterior and vice versa), residential and nonresidential ventilation requirements, and nonresidential lighting requirements. While the CBC has strict energy and green building standards, U-occupancy structures (such as greenhouses used for cultivation activities) are typically not regulated by these standards.

VEHICLE FUEL ECONOMY STANDARDS

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

As part of California's overall approach to reducing pollution from all vehicles, CARB has established standards for clean gasoline and diesel fuels and fuel economies of new vehicles. CARB has also put in place innovative programs to drive the development of low-carbon, renewable, and alternative fuels, such as their Low Carbon Fuel Standard (LCFS) Program pursuant to California Assembly Bill (AB) 32 and the Governor's Executive Order S-01-07.

In January 2012, the CARB approved the Advanced Clean Cars Program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15% of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34% fewer global warming gases and 75% fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2022).

All self-propelled off-road diesel vehicles 25 horsepower (hp) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the CARB's Regulation for In-Use

Off-Road Diesel Fueled Fleets (Off-Road regulation). This includes vehicles that are rented or leased (rental or leased fleets). The overall purpose of the Off-Road regulation is to reduce emissions of NO_X and particulate matter from off-road diesel vehicles operating within California through the implementation of standards, including, but not limited to, limits on idling, reporting, and labeling of off-road vehicles, limitations on use of old engines, and performance requirements.

Environmental Evaluation

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

Construction activities for the proposed project would require the use of energy in the form of electricity, diesel fuel, and gasoline for workers and construction vehicles and equipment. The project would require limited construction activities and would be subject to state and local diesel idling restrictions and other equipment standards. Therefore, construction is not anticipated to result in wasteful, inefficient, or unnecessary consumption of energy resources.

Implementation of the proposed project would result in seven single-family residences that would be subject to green building and CBC standards. The project would provide electricity from SCE, which sources 33.2% of electricity from renewable resources (SCE 2022). Based on required compliance with green building standards and the use of electricity from renewable resources, the operation of the project is not anticipated to result in environmental impacts due to wasteful or otherwise inefficient use of energy during project construction or operation; therefore, impacts would be *less than significant.*

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

The project would comply with CBC 2023 *Building Energy Efficiency Standards* and the 2023 *Green Building Code* and is not anticipated to result in wasteful use of energy. Therefore, the project would comply with applicable energy efficiency plans, and impacts would be *less than significant*.

Conclusion

The project would not result in a wasteful, inefficient, or unnecessary consumption of energy resources during short-term construction or long-term operation and would not conflict with state or local renewable energy or energy efficiency plans. Therefore, potential impacts related to energy would be less than significant, and mitigation measures are not necessary.

Mitigation Measures

Mitigation is not necessary.

VII. Geology and Soils

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

Setting

Ground shaking refers to the motion that occurs in response to regional and local earthquakes. Seismic ground shaking is influenced by the proximity of the site to an earthquake fault, the intensity of the seismic event, and the underlying soil composition. Ground shaking can endanger life and safety due to damage or collapse of structures or lifeline facilities. Liquefaction is the sudden loss of soil strength due to a rapid increase in soil pore water pressure resulting from ground shaking during an earthquake. Landslides and slope instability can occur as a result of wet weather, weak soils, improper grading, improper drainage, steep slopes, adverse geologic structures, earthquakes, or a combination of these factors.

The project site is located in seismically active Southern California, a region that has experienced numerous earthquakes in the past. The Alquist-Priolo Special Studies Zones Act specifies certain areas as Earthquake Fault Zones if surrounding faults that are deemed sufficiently active or well defined after a

review of seismic records and geological studies. Neither the project site is located within any Alquist-Priolo Special Studies Zones (CDOC 2015).

According to the *City of Hesperia Hazard Mitigation Plan,* the nearest faults of major significance in San Bernadino County are the Southern San Andreas, the San Jacinto, the Elsinore, and the Garlock Faults (City of Hesperia 2017). According to the CDOC Fault Activity Map of California, the nearest potentially active fault to the project site is the Ord Mountains fault zone, located approximately 8 miles southeast of the project site (CDOC 2015).

Highly erodible soils are those that are easily carried by water and, to a lesser extent, by wind. Surface erosion is more commonly visible, but subsurface erosion can lead to damage to pipes, roads, foundations, and other structural elements. Expansive soils are largely comprised of clays, which expand in volume when water is absorbed and shrink as the soil dries. Expansion is measured by shrink-swell potential, which is the volume change in soil with an increase in moisture. If the shrink-swell potential is rated moderate to high, then damage to buildings, roads, structural foundations, and pipes can occur. In the northern portion of the county, there are some areas of expansive clay soil that require special construction standards for foundations and infrastructure. Expansive clay problems can be surmounted by appropriate engineering design and construction techniques.

According to the NRCS Web Soil Survey, the project site is underlain by Cajon Sand, with 0 to 2 percent slopes. This somewhat excessively drained soil has a high to very high runoff class and a depth-to-restrictive feature of more than 80 inches. The typical soil profile consists of sand, gravely sand, and stratified sand to loamy fine sand. The Cajon Sand soils formed in alluvium are derived primarily from granite and related rocks.

Environmental Evaluation

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

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

There are no active faults located within or adjacent to the project site (CDOC 2015). Because the project site is not underlain by an Alquist-Priolo or other active fault zone, rupture of a known Alquist-Priolo fault would not occur within the project site; therefore, *no impacts* would occur.

a-ii) Strong seismic ground shaking?

The nearest potentially active fault to the project site is the Ord Mountains fault zone approximately 8 miles southeast of the project site (CDOC 2015). The project includes the development of seven single-family residences. New occupiable buildings would be required to be constructed in accordance with the most recent CBC to address seismic risk. Based on required compliance with the CBC, the project would not result in the risk of loss, injury, or death as a result of seismic-induced hazards, including seismic ground shaking; therefore, impacts would be *less than significant*.

a-iii) Seismic-related ground failure, including liquefaction?

According to the California Geological Survey's Earthquake Hazards Zone Application, the project site is not located in a liquefaction zone (CDOC 2021). The project includes the development of seven single-family residences. New occupiable buildings would be required to be constructed in accordance with the most recent CBC to address seismic risk. Based on required compliance with the CBC, the project would not result in the risk of loss, injury, or death as a result of seismic-induced hazards, including liquefaction; therefore, impacts would be *less than significant.*

a-iv) Landslides?

According to the California Geological Survey's Earthquake Hazards Zone Application, the project site is not located landslide zone (CDOC 2021). The project includes the development of seven single-family residences. New occupiable buildings would be required to be constructed in accordance with the most recent CBC to address seismic risk. Based on required compliance with the CBC, the project would not result in the risk of loss, injury, or death as a result of seismic-induced hazards, including landslide; therefore, impacts would be *less than significant.*

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

Construction activities would result in approximately 2.51 acres of ground disturbance. Proposed ground-disturbing activities would have the potential to increase erosion or loss of topsoil at the project site. The project would disturb more than 1 acre of soil and would be required to comply with State Water Resources Control Board (SWRCB) general construction permit requirements to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) with BMPs to address erosion and other pollutant control at the project site. Because the project would disturb more than 1 acre of soil, the project would also be required to comply Hesperia Municipal Code Section 8.30.210, which requires preparation and implementation of an Erosion Control Plan (ESCP). Following construction activities, the project site would be covered with hardscapes to reduce the potential for erosion or loss of topsoil to occur at the project site. Based on required compliance with SWRCB and City requirements, implementation of the proposed project would not result in substantial soil erosion or the loss of topsoil; therefore, impacts would be *less than significant*.

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

According to the California Geological Survey's Earthquake Hazards Zone Application, the project site is not located in a liquefaction or landslide zone (CDOC 2021). The project site is also not located in an area with known land subsidence (USGS 2024). New occupiable buildings would be required to be constructed in accordance with the most recent CBC to address geologic risk. Based on required compliance with the CBC, the project would not result in the risk associated with ground failure; therefore, impacts would be *less than significant.*

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

Expansive soils are typically comprised of clay. Soils at the project site consist of sand, gravely sand, and stratified sand to loamy fine sand; therefore, there is a low risk of soil expansion at the project site (NRCS

2024). New occupiable buildings would be required to be constructed in accordance with the most recent CBC to address geologic risk. Based on required compliance with the CBC, the project would not result in the risk associated with development on expansive soils; therefore, impacts would be *less than significant*.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project does not include the installation of septic tanks or alternative wastewater disposal systems; therefore, *no impacts* would occur.

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

Paleontological resources are the preserved fossilized remains of plants and animals. According to the Cultural and Paleontological Resources Study for the City's General Plan, the site is located in an area with a low sensitivity for paleontological resources (City of Hesperia 2010b). The project site is underlain by sediments from the Holocene eras (USGS 1965), which has a low paleontological sensitivity because it is typically too young to yield scientifically significant paleontological resources. Based on the low paleontological sensitivity of the underlying geologic unit, the proposed project would not adversely affect paleontological resources; therefore, impacts would be *less than significant*.

Conclusion

Based on required compliance with the CBC, the project would not result in the risk associated with seismic-related or ground-failure events. Based on required compliance with SWRCB and City requirements, implementation of the proposed project would not result in substantial soil erosion or the loss of topsoil. The project does not include the installation of septic tanks or alternative wastewater disposal systems. The project would not adversely affect paleontological resources. Therefore, impacts related to geology and soils would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

VIII. Greenhouse Gas Emissions

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

Setting

GHGs are any gases that absorb infrared radiation in the atmosphere. The primary GHGs that are emitted into the atmosphere as a result of human activities are carbon dioxide (CO_2), methane (CH_4), NOx, and fluorinated gases. These are most commonly emitted through the burning of fossil fuels (oil, natural gas, and coal), agricultural practices, decay of organic waste in landfills, and a variety of other chemical reactions and industrial processes (e.g., the manufacturing of cement). CO_2 is the most abundant GHG and is estimated to represent approximately 80% to 90% of the principal GHGs that are currently affecting the earth's climate. According to the CARB, transportation (vehicle exhaust) and electricity generation are the main sources of GHGs in the state.

In October 2008, CARB published the Climate Change Proposed Scoping Plan, which is the state's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan included CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations were associated with improving emissions standards for light-duty vehicles, implementing the LCFS program, implementation of energy efficiency measures in buildings and appliances, the widespread development of combined heat and power systems, and developing a renewable portfolio standard for electricity production.

Senate Bill (SB) 32 and Executive Order (EO) S-3-05 extended the state's GHG reduction goals and require the CARB to regulate sources of GHGs to meet the following goals:

- Reduce GHG emissions to 1990 levels by 2020;
- Reduce GHG emissions to 40% below 1990 levels by 2030; and
- Reduce GHG emissions to 80% below 1990 levels by 2050.

The initial Scoping Plan was first approved by CARB on December 11, 2008, and is updated every 5 years. The first update of the Scoping Plan was approved by the CARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030–2035) toward reaching the 2050 goals. The CARB released the 2017 Climate Change Scoping Plan in November 2017. The 2017 Climate Change Scoping Plan incorporates strategies for achieving the 2030 GHG-reduction target established in SB 32 and EO S-3-05. CARB's most recent update is the 2022 Scoping Plan for Achieving Carbon Neutrality, dated November 16, 2022, which identifies a plan to reach carbon neutrality by 2045 or earlier.

The City of Hesperia Climate Action Plan (CAP) was adopted in June of 2010. The CAP outlines a course of action for the City to reduce per capita GHG emissions 29% below 2010 levels by 2020 and to adapt to the effects of climate change. The CAP includes actions such as reducing emissions from new development, increasing bicycle use through a safe and well-connected system of bicycle paths and end of trip facilities, reducing energy use from the transport and treatment of water, and improving recycling and source reduction programs to make continued progress in minimizing waste.

Environmental Evaluation

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

MDAQMD has an adopted bright-light annual GHG threshold of 100,000 metric tons of carbon dioxide equivalent (CO_2e) per year for all new development projects. According to the CalEEMod model prepared for the project (Appendix A), the project is expected to emit a total of 230 metric tons of CO_2e during construction, and 143 metric tons of CO_2e annually during operation. After amortizing the construction emissions over 30 years, the project would emit a total of approximately 151 metric tons of

CO_2e per year, which is well below the MDAQMD threshold of 100,000 tons of CO_2e per year. Therefore, impacts would be *less than significant.*

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

According to the MDAQMD, a project is determined to be conforming with the district's attainment plans if it complies with all applicable MDAQMD rules and regulations and is consistent with regional growth forecasts (MDAQMD 2020). The project will comply with MDAQMD rules and regulations and therefore will be consistent with the district's attainment plans. Further, the project would be consistent with the land uses described in the Main Street and Freeway Corridors Specific Plan Area. The project site is within the LDR zone of the Specific Plan Area, which is intended to provide areas for single-family residences with a variety of lot sizes and housing choices.

According to the City's CAP, projects that are consistent with the CAP would result in less than significant GHG impacts. This is because the emissions from such projects are generally accounted for in the CAP and would be consistent with the CAP reduction target. To be consistent with this CAP, projects must implement applicable CAP implementation strategies. The project would be consistent with the following implementation actions:

> **CAP-5.2** Upgrade pedestrian infrastructure when roadways are reconstructed or expanded and right-of-way is available.
>
> **CAP-5.5** The City should work with developers to ensure that safe and attractive sidewalks, walkways, bike lanes, and crosswalks that facilitate use are provided in accordance with City standards. The City should work with developers to construct links to adjacent communities, using open space easements and utility easements when appropriate.
>
> **CAP-11.2** Require new commercial, multi-family residential, and industrial development to incorporate storage of recyclables in site designs.
>
> **CAP-14.1** New projects should assess the significance of wildfires, water supply, flooding, and any other potential impacts from climate change in California Environmental Quality Act documents.
>
> **CAP-14.2** Developers should provide an assessment of a project's potential impacts on the local and subregional storm drainage systems, so that the City can determine appropriate mitigation to ensure that system capacity and peak flow restrictions are not exceeded.
>
> **CAP-14.4** Low-impact development techniques should be used in new development to infiltrate and store runoff.

As such, the project would be consistent with the City's CAP and MDAQMD guidelines. Therefore, the project would not conflict with the implementation of applicable plans, policies or regulations adopted for the purpose of GHG emissions reductions, and impacts would be *less than significant.*

Conclusion

The project would be consistent with the City's 2010 CAP and would not exceed the MDAQMD annual GHG threshold. As such, the project would not result in a conflict with an applicable plan or policy

adopted for reducing GHG emissions. Therefore, the project would not result in impacts related to GHG emissions.

Mitigation Measures

Mitigation is not necessary.

IX. Hazards and Hazardous Materials

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

Setting

The Hazardous Waste and Substances Site (Cortese) List is a planning tool used by the state, local agencies, and developers to comply with CEQA requirements related to the disclosure of information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to develop an updated Cortese List at least annually. Various state and local government agencies are required to track and document hazardous material release information for the Cortese List. The California Department of Toxic Substance Control (DTSC) EnviroStor database tracks DTSC cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination, such as federal superfund, state response, voluntary cleanup, school cleanup, school investigation, and military evaluation sites (DTSC 2024). The

SWRCB GeoTracker database contains records for sites that impact, or have the potential to impact, water in California, such as Leaking Underground Storage Tank (LUST), Department of Defense, and Cleanup Program Sites (SWRCB 2024). The remaining data regarding facilities or sites identified as meeting the "Cortese List" requirements can be located on the CalEPA website.

Based on a query of the DTSC EnviroStor and SWRCB GeoTracker databases, there are no hazardous materials sites located within or adjacent to the project site (DTSC 2024; SWRCB 2024). There is a closed LUST cleanup site located approximately 1.5 miles north of the project site and another closed LUST cleanup site located approximately 1.25 miles southwest of the project site (SWRCB 2024).

Environmental Evaluation

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

The proposed project would require limited quantities of hazardous substances, including gasoline, diesel fuel, hydraulic fluid, solvents, oils, paints, etc. during construction, which has the potential to result in an accidental spill or release. Construction contractors would be required to comply with applicable federal and state environmental and workplace safety laws for the handling, transport, and storage of hazardous materials, including 22 California Code of Regulations (CCR) Division 4.5.

Operation of the project would be limited to residential uses and would not require the routine transport, use, or disposal of hazardous materials that could lead to significant upset in the event of an accidental spill. Household waste would be stored and hauled in accordance with City regulations; therefore, impacts would be *less than significant*.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As previously discussed, temporary construction activities would include the use of construction equipment, vehicles, and commonly used hazardous substances, including, but not limited to, paint, solvents, oils, fuel, and gasoline. Commonly used hazardous substances within the project site would be transported, stored, and used according to regulatory requirements and existing procedures for the handling of hazardous materials. Operation of the project would not require the handling or use of hazardous materials or volatile substances that would result in a significant risk of upset or accidental release conditions.

The project site is not located in an area with the potential for NOA to occur and would not require the demolition of existing on-site structures that could release ACM or lead-based paint if present within the building materials (CGS 2011). The project does not require soil disturbance within or adjacent to existing major roadways that could release aerially deposited lead (ADL) if present within the soil. Therefore, based on compliance with existing regulations during proposed construction activities, potential impacts would be *less than significant.*

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

The nearest school is the Topaz Preparatory Academy located approximately 0.15 miles southeast of the project site. As previously discussed, temporary construction activities would include the use of construction equipment, vehicles, and commonly used hazardous substances, including, but not limited to, paint, solvents, oils, fuel, and gasoline. Commonly used hazardous substances within the project site would be transported, stored, and used according to regulatory requirements and existing procedures for the handling of hazardous materials. Operation of the project would not require the handling or use of hazardous materials or volatile substances that would result in a significant risk of upset or accidental release conditions. However, current local, State, and federal laws relating to the use, storage, and disposal of these materials make it unlikely that the project would have a significant effect on the Topaz Preparatory Academy. Therefore, impacts would be *less than significant.*

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

Based on a query of the DTSC EnviroStor and SWRCB GeoTracker databases, there are no hazardous materials sites located within or adjacent to the project site (DTSC 2024; SWRCB 2024). The project site is not located on or adjacent to a site that is on a list of hazardous materials sites pursuant to California Government Code Section 65962.5; therefore, the project would not create a significant hazard to the public or the environment related to disturbance of a known hazardous materials site, and *no impacts* would occur.

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

The nearest airport is the Hesperia Municipal Airport, located approximately 4.5 miles southeast of the project site. The project site is not located within an airport land use plan or within 2 miles of an airport; therefore, the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area, and *no impacts* would occur.

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

According to the California Department of Forestry and Fire Protection (CAL FIRE) fire hazard severity maps, the project site and surrounding area is located in a local responsibility area (LRA) (CAL FIRE 2024b). The project includes the development of seven single-family residences. Each residence would also be constructed with a minimum 25-foot-long driveway. The project includes construction of a paved access road and driveway approach terminating in a cul-de-sac. This roadway would be named San Luis Street and would be constructed per City standards and California Fire Code (CFC) requirements to ensure adequate emergency access. The new single-family residences would generate a negligible increase in vehicle trips to and from the site; therefore, implementation of the project would not increase vehicle congestion in a manner that could interfere with emergency response or evacuation efforts within the project area, and impacts related to emergency response and evacuation would be *less than significant*.

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

The project site and surrounding area is located in a LRA (CAL FIRE 2024b). The project includes the development of seven single-family residences on an undeveloped project site with relatively flat topography. New occupiable buildings would be required to be constructed in accordance with the CFC to address fire risk. Based on required compliance with the CFC, the project would not exacerbate the risk of wildfire; therefore, impacts would be *less than significant*.

Conclusion

The project is located within 0.25 mile of a school; however, based on required compliance with the CCR, the project would not result in significant hazards related to the routine transport, use, or disposal of hazardous materials. The project site is also not within 2 miles of an airport, or within or adjacent to a previously recorded hazardous materials site. The project would not impair implementation of an adopted emergency response plan or emergency evacuation plan and would not expose people or structures to a significant risk involving wildfires. Therefore, impacts related to hazards and hazardous materials would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

X. Hydrology and Water Quality

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

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
(e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Setting

STATE AND REGIONAL WATER QUALITY REGULATORY SETTING

The project site is located within the jurisdiction of the California Regional Water Quality Control Board, Lahontan Region. The Water Quality Control Plan for the Lahontan Region (Basin Plan) sets forth water quality standards for the surface and groundwaters of the region, which include both designated beneficial uses of water and the narrative and numerical objectives which must be maintained or attained to protect those uses. There are 24 categories of beneficial uses, including, but not limited to, municipal water supply, water contact recreation, non-water contact recreation, and cold freshwater habitat. Water quality objectives are then established to protect the beneficial uses of those water resources. The Regional Board implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose discharges can affect water quality (California Regional Water Quality Control Board Lahontan Region 2021).

The U.S. Army Corps of Engineers (USACE), through Section 404 of the Clean Water Act (CWA), regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. are typically identified by the presence of an ordinary high-water mark (OHWM) and connectivity to traditional navigable waters or other jurisdictional features. The SWRCB and nine Regional Water Quality Control Boards regulate discharges of fill and dredged material in California, under Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act, through the State Water Quality Certification Program. State Water Quality Certification is necessary for all projects that require a USACE permit, or fall under other federal jurisdiction, or have the potential to impact waters of the State. Waters of the State are defined by the Porter-Cologne Act as any surface water or groundwater, including saline waters, within the boundaries of the state.

LOCAL STORMWATER MANAGEMENT

The City of Hesperia is subject to requirements of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Permit, General Permit No.CAS000004 (MS4 Permit) issued by the SWRCB. The MS4 Permit requires the City to implement a Construction Site Stormwater Runoff Control Program. Construction projects generally 1 acre or larger which are subject to the Statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ: NPDES No. CAS000002) (Construction General Permit) must prepare and submit a SWPPP to the City for review. The City will review the SWPPP for compliance with City construction requirements, and for completeness and accuracy of information required by the Construction General Permit. An acceptable SWPPP is required before any Grading or Building Permit will be issued by the City (City of Hesperia 2016).

LOCAL GROUNDWATER SUPPLY

The City operates and maintains a water supply system through the Hesperia Water District (HWD), which serves as a subsidiary special district of the City. Water use in the region has historically been sourced from surface supplies derived from the Mojave River and groundwater supplies from the Upper Mojave River Groundwater Basin (Mojave Basin). The rapid expansion of groundwater pumping from the Mojave Basin and increased use from the surface water supplies to serve the region's growing population led to the Mojave Basin Area Adjudication (Adjudication). The Adjudication is the primary governing structure that allocates water supplies among the regional water purveyors and individual water users to meet regional water needs. The Mojave Water Agency is the Watermaster for the Adjudication (Tully & Young, Inc. and HWD 2021).

The HWD's current primary water supply includes groundwater pumped from the Alto subarea, which is one of the five subareas created by the Adjudication. The Adjudication assigned Base Annual Production (BAP) rights to each producer using 10 acre-feet or more, from which parties of the Adjudication are assigned a free production allowance (FPA), which is a percentage of the BAP set annually by the Court for reach subarea. The BAP is reduced over time until the FPA is within 5% of the Production Safe Yield (PSY) of the Basin, as defined by the Adjudication. In general, this water supply is available to Hesperia regardless of the current year's hydrology in the context of the regional water management actions. Hesperia also holds stored water in the Mojave Basin to manage unforeseen outages. These supplies can be balanced in any given year to meet demands in the Hesperia service area, and importantly, the HWD is looking to augment its water supply portfolio through a recycled water project that anticipates supply availability in 2025 (Tully & Young, Inc. and HWD 2021).

Based on the 2020 City of Hesperia Urban Water Management Plan, the HWD has reliable water supplies to meet its current and projected water demands in normal, single dry years, and five consecutive dry year conditions through 2045. The managed groundwater reliability is based on HWD's share of the projected Mojave Basin's annual FPA and the numerous current and planned projects in the Mojave Basin designed to increase the reliability of the groundwater supply. In addition, Hesperia's continued acquisition of replacement, make-up, and transferred water supplies supplement HWD's asset portfolio. As such, Hesperia is not projected to face water shortages during normal or dry years through 2045. Because the HWD extracts only as much groundwater as is necessary to meet customer demands, it is anticipated that supplies and demands are congruent across all the scenarios examined (Tully & Young, Inc. and HWD 2021).

Hesperia also has updated its Water Shortage Contingency Plan (WSCP) under the requirements in Water Code Section 10632 of the Urban Water Management Planning Act to address any potential water shortage conditions. This updated WSCP allows the HWD to reduce the water demands of its customers in shortage or catastrophic outage conditions. The measures contemplated in the updated WSCP include typical dry condition water management actions imbedded into six water shortage categories (up to 10%, 11%–20%, 21%–30%, 30%–40%, 40%–50%, and over 50%). Accordingly, in the event of a catastrophic water outage in the service area, water demands would be limited to use for health and safety purposes only. The updated WSCP, combined with Hesperia's active water management of its supply portfolio, provides additional buffer against unpredictable water conditions and results in an overall reliable, resilient water supply for the City through 2045 (Tully & Young, Inc. and HWD 2021).

CITY GENERAL PLAN

In addition to the City's Urban Water Management Program and WSCP, the City General Plan also includes several policies relevant to the proposed project pertaining to attaining and maintaining the City's water quality, groundwater recharge, and hydrology goals, as detailed below:

Goal CN-1: Conserve water resources within the Upper Mojave River Groundwater Basin.

- **Policy CN-1.1.** Promote the use of desert vegetation with low water usage and drought tolerant materials in landscaped areas.
- **Policy CN-1.3.** Promote reduced use of high nitrate fertilizers, herbicides, pesticides, and other chemicals in landscaping areas that can contaminate the quality of the groundwater.
- **Policy CN-1.4.** Limit the disturbance of natural water hydrology by minimizing creation of impervious area and continue utilizing detention/retention basins and underground retention/detention facilities to recharge groundwater.
- **Policy CN-1.6.** Encourage the use of low-water consumption fixtures in homes and businesses.
- **Policy CN-1.7.** Require new development to use new technology, features, equipment and other methods to reduce water consumption.

MAIN STREET AND FREEWAY CORRIDORS SPECIFIC PLAN

The Main Street and Freeway Corridors Specific Plan establishes a Wash Protection Overlay that limits the construction of permanent structures within the washes' right-of-way in order to maintain their function as natural drainage courses. The project site is not located within a Wash Protection Overlay area.

FLOOD HAZARDS

For planning purposes, the flood event most often used to delineate areas subject to flooding is the 100-year flood, which identifies areas with a 1% annual flood hazard. All development located in a 100-year flood zone is subject to Federal Emergency Management Act (FEMA) regulations. Based on a review of FEMA's National Flood Hazard Layer (NFHL) Viewer, the project site is not located within any designated flood zones (FEMA 2008).

Environmental Evaluation

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

The project site does not support any surface water bodies, washes, wetlands, or riparian areas. The proposed project would require on-site grading, which could result in the erosion of on-site soils and sedimentation during heavy wind or rain events. The proposed project would be required to comply with all local, state and federal requirements, including a state Construction General Permit, which requires the preparation of a SWPPP. A SWPPP has been prepared for the project and this plan identifies all pollutant sources, including sources of sediment that may affect the quality of stormwater discharges associated with construction activity and identifies and requires construction and implementation of BMPs to reduce or eliminate the discharge of pollutants into stormwater. These BMPs include, but are not limited to, installation of gravel bags along the perimeter of the project site, construction of a stabilized construction entrance to the site, installation of an aboveground concrete washout area, construction of a temporary sediment basin, use of fiber rolls and gravel bags for inlet protection, street sweeping, application of soil stabilizer, and application of wind erosion control sprays (Encompass Associates, Inc. 2022).

The project SWPPP was developed in full compliance with the required elements of the General Permit issued by the SWRCB. The plan also identifies post-construction BMPs intended to reduce or eliminate pollutants after construction is completed (Encompass Associates, Inc. 2022). This SWPPP was reviewed and approved by the City of Hesperia as part of their review of the proposed Tract Map and grading plan for the project site. Therefore, based on the development and implementation of the approved SWPPP prepared for the project, the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and impacts would be *less than significant.*

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

The proposed project would include new connections to the City of Hesperia Municipal Water System to supply the domestic water demand of the new residences. The HWD's current primary water supply includes groundwater pumped from the Alto subarea, which is one of the five subareas of the Adjudicated Mojave Basin. Based on the 2020 City of Hesperia Urban Water Management Plan, the HWD has reliable water supplies to meet its current and projected water demands in normal, single dry years, and five consecutive dry year conditions through 2045. Because the HWD extracts only as much groundwater as is necessary to meet customer demands, it is anticipated that supplies and demands are congruent across all the scenarios examined (Tully & Young, Inc. and HWD 2021). In addition, the proposed project and future project tenants would be required to comply with the City's currently adopted WSCP, which prohibit certain types of water use and require implementation of operational water conservation measures, including, but not limited to, implementation of exterior landscape plans with timed irrigation and the use of drought resistant plants and turf options, limiting vehicle washing to washing only if the hose has an automatic shut-off device or at a commercial facility, requiring use of evaporative resistant covers for pools, sweeping of impervious surfaces rather than using water, and encouraging residences to fix leaking sprinklers promptly, use of shut-off nozzles on hoses, and only washing full loads of laundry or dishes. Based on the City's long-term sustainable groundwater supplies and the project's required compliance with applicable local water conservation policies, impacts would be *less than significant*.

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

c-i) Result in substantial erosion or siltation on- or off-site?

As described above, a SWPPP has been prepared for the project and this plan identifies all pollutant sources, including sources of sediment that may affect the quality of stormwater discharges associated with construction activity and identifies and requires construction and implementation of BMPs to reduce or eliminate the discharge of pollutants into stormwater. These BMPs include, but are not limited to, installation of gravel bags along the perimeter of the project site, construction of a stabilized construction entrance to the site, installation of an aboveground concrete washout area, construction of a temporary sediment basin, use of fiber rolls and gravel bags for inlet protection, street sweeping, application of soil stabilizer, and application of wind erosion control sprays (Encompass Associates, Inc. 2022).

The project SWPPP was developed in full compliance with the required elements of the General Permit issued by the SWRCB. The plan also identifies post-construction BMPs intended to reduce or eliminate pollutants after construction is completed (Encompass Associates, Inc. 2022). Based on the development and implementation of the approved SWPPP prepared for the project, the project would not result in any

substantial alterations to the existing drainage pattern of the site resulting in substantial erosion or siltation on- or off-site and impacts would be *less than significant*.

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

The project site is currently undeveloped and there are no streams, rivers, or other surface water features on-site or within close proximity to the project site. The project would result in an estimated addition of approximately 5,800 square feet of new impervious surface area on-site. With proposed off-site improvements the project would result in a total of 12,735 square feet of new impervious surface area.

The project includes construction of a retention basin located in the northeastern lot on the project site. This basin would be approximately 10,518 square feet in area, have a have a storage capacity of 18,156 cubic feet (approximately 0.42 acre-feet). This basin system has been designed to provide water quality treatment of 24-hour, 100-year storm event stormwater flows as well as to reduce the volume of stormwater flows leaving the site to be less than or equal to predevelopment conditions (Thatcher Engineering & Associates, Inc. 2021). Construction of the retention basin would also include a gravel overflow spillway to direct stormwater flows into the City Municipal Separate Storm Sewer System in the event that the retention basin reaches capacity. Therefore, the project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on-site or off-site and impacts would be *less than significant.*

c-iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The project includes the construction of a retention basin located in the northeastern lot on the project site. This basin would be approximately 10,518 square feet in area, have a have a storage capacity of 18,156 cubic feet (approximately 0.42 acre-feet). This basin system has been designed to provide water quality treatment of 24-hour, 100-year storm event stormwater flows as well as to reduce the volume of stormwater flows leaving the site to be less than or equal to predevelopment conditions (Thatcher Engineering & Associates, Inc. 2021). Construction of the retention basin would also include a gravel overflow spillway to direct stormwater flows into the City Municipal Separate Storm Sewer System in the event that the retention basin reaches capacity. Based on the drainage study prepared for the project, with the installation of stormwater collection infrastructure and the proposed retention basin on-site, there would be no increase in the volume or intensity of stormwater flows leaving the site compared to predevelopment conditions (Thatcher Engineering & Associates, Inc. 2021). Therefore, potential impacts associated with exceeding the capacity of existing or planned stormwater drainage systems or providing substantial additional sources of polluted runoff would be *less than significant*.

c-iv) Impede or redirect flood flows?

Based on a review of FEMA's NFHL Viewer, the project site is not located within any designated flood zones (FEMA 2008). Therefore, *no impacts* would occur.

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

Based on a review of FEMA's NFHL Viewer, the project site is not located within any designated flood zones (FEMA 2008). The City of Hesperia is located approximately 55 miles inland from the Pacific coast and therefore is well out of the range of projected tsunami inundation areas. The project site is not

located adjacent to any large bodies of standing water that could be subject to a seiche. Therefore, *no impacts* would occur.

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

As discussed above, the proposed project would be required to comply with all local, state, and federal requirements, including a state Construction General Permit, which requires the preparation of a SWPPP. An SWPPP has been prepared for the project and this plan identifies all pollutant sources, including sources of sediment that may affect the quality of stormwater discharges associated with construction activity and identifies and requires construction and implementation of BMPs to reduce or eliminate the discharge of pollutants into stormwater. Based on the drainage study prepared for the project, with the installation of stormwater collection infrastructure and the proposed retention basin on-site, there would be no increase in the volume or intensity of stormwater flows leaving the site compared to predevelopment conditions. Lastly, because the HWD extracts only as much groundwater as is necessary to meet customer demands and the project would be subject to policies set forth in the City's WSCP, the project's reliance on the HWD for domestic water supply would not result in any conflicts with a sustainable groundwater management plan. Therefore, potential impacts associated with conflicting with or obstructing an adopted water quality control plan or sustainable groundwater management plan would be l*ess than significant*.

Conclusion

The project has been designed to comply with applicable State and local water quality plans and policies, would not result in substantial depletion of groundwater supplies, and would not alter the drainage pattern of the site in a manner that would result in substantial impacts associated with erosion, flooding, or exceedance of drainage systems' capacity. Impacts associated with Hydrology and Water Quality would be less than significant and no mitigation is necessary.

Mitigation Measures

Mitigation is not necessary.

XI. Land Use and Planning

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

Setting

CITY OF HESPERIA GENERAL PLAN

The City of Hesperia General Plan is a comprehensive planning document that establishes goals and policies to guide decision-makers and the community. The City last updated its General Plan in 2010, but recent state legislation has been adopted that requires the City to update specific elements, namely Land Use, Circulation, and Safety, as well as adopt goals and policies to address environmental justice. The City is currently in the process of updating its General Plan to reflect the community's vision and priorities, as well as to comply with adopted state legislation.

CITY OF HESPERIA DEVELOPMENT CODE

Title 16 of the City Municipal Code, known as the Development Code, establishes standards and specifications for land use and development set forth in community plan land use districts and zone districts. The Development Code implements general plan policies through detailed development regulations, such as specific use types and building standards.

PROJECT SITE SETTING

The project site is located on the northwestern side of the city of Hesperia. The project site is surrounded by Topaz Avenue and single-family residential development to the east and undeveloped lands to the north. Private property, owned by the Cal-Earth Institute, is located immediately west and south of the site.

The project site is located within the Main Street and Freeway Corridors Specific Plan Area. The Main Street and Freeway Corridors Specific Plan was approved in October 2008 and established a development framework for the Main Street and Freeway Corridors, with the intent of facilitating and encouraging development and improvements along these two corridors to help realize the community's vision for the area. The Specific Plan was most recently updated in July 2021. The 10,640-acre Specific Plan Area includes a range of uses including industrial, commercial, civic, institutional, residential, mixed-use, and parks and open space. The project site is within the LDR zone of the Specific Plan Area, which is intended to provide areas for single-family residences with a variety of lot sizes and housing choices.

Environmental Evaluation

a) Would the project physically divide an established community?

The project site is surrounded by Topaz Avenue and single-family residential development to the east and undeveloped lands to the north. Private property, owned by the Cal-Earth Institute, is located immediately west and south of the site. The project would include the development of single-family residential uses within a 2.51-acre property within the LDR zone of the Main Street and Freeway Corridors Specific Plan Area. The project would not result in the development of new off-site roadways or otherwise create a barrier within an established community; therefore, *no impacts* would occur.

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

As discussed above, the project is located within the LDR zone of the Main Street and Freeway Corridors Specific Plan Area. Single-family dwelling units are listed as a permitted use under this zone, and the

project would have a proposed residential density of 2.79 dwelling units per acre, which is within the allowable residential density established for this zone of 2 to 8 units per acre. Tract No. 20396 was reviewed by City staff for compliance with required subdivision and lot size requirements and found to be in compliance with all applicable City standards.

As discussed in Section I. *Aesthetics*, Section V. *Cultural Resources*, Section X. *Hydrology and Water Quality*, Section XIII. *Noise*, Section XIV. *Population and Housing*, and Section XVII. *Transportation*, the City General Plan includes a number of goals and policies applicable to the proposed project. As described in each of these respective sections, the project has been designed to comply with applicable policies set forth in the General Plan. Mitigation measures have been identified to reduce potential project impacts associated with cultural resources. Upon implementation of these measures, the project would be consistent with the goals and policies set forth in the General Plan.

As discussed in Section III. *Air Quality*, and VIII. *Greenhouse Gas Emissions*, the project has been evaluated for consistency with MDAQMD emissions thresholds and the City's CAP, and the project would not result in any conflicts with these plans or their respective policies. In addition, the project would be required to be consistent with standards set forth by County Fire/CAL FIRE and the County Public Works Department. Upon implementation of identified mitigation measures, the project would not conflict with plans, policies, or regulations adopted for the purpose of avoiding or mitigating environmental effects and impacts would be *less than significant with mitigation*.

Conclusion

The project would not physically divide an established community. Potential impacts related to land use and planning would be less than significant with the implementation of the mitigation measures identified below. Therefore, impacts associated with Land Use would be less than significant with mitigation.

Mitigation Measures

Implement Mitigation Measures BIO-1 through BIO-18, CR-1 through CR-4, and TCR-1 and TCR-2.

XII. Mineral Resources

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

Setting

The California Surface Mining and Reclamation Act (SMARA) of 1975 requires that the State Geologist classify land into mineral resource zones (MRZ) according to the known or inferred mineral potential of the land (PRC Sections 2710–2796). The project site is located in an MRZ-3A area and is not located near any existing mining operations (CGS 1993). The MRZ-3A area is defined as: "Areas containing known

mineral occurrences of undetermined mineral resource significance. Further exploration work within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b, categories. As shown on the California Mineral Land Classification Diagram, MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources."

Environmental Evaluation

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

The project site is located in an MRZ-3A area and is not located near any existing mining operations (CGS 1993). The project site is not located in an area with known mineral resources; therefore, no permanent loss of mineral resources that would be of value to the region and the residents of the state would occur, and *no impacts* would occur.

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

The project site is located in an MRZ-3A area and is not located near any existing mining operations (CGS 1993). The project site is not located in an area with known mineral resources; therefore, no permanent loss of locally- important mineral resource would occur, and *no impacts* would occur.

Conclusion

No impacts to mineral resources would occur as a result of the project, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XIII. Noise

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
(b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Setting

Noise is defined as any undesired sound in the environment and can impair the quality of life by impeding rest, sleep, work, and communication. While motor vehicles are the most prevalent sources of noise, other sources contribute to urban noise such as aircraft, railroads, construction equipment, motorized landscaping tools, and home appliances. Sensitive receptors such as residences, schools, libraries, nursing homes, hospitals, and parks experience particularly acute effects of noise disturbances. The City of Hesperia sets standards, uses site planning, and noise mitigation methods to control and abate the effects of noise. The project would be subject to the City's noise mitigation measures as outlined in the General Plan. Table 7 outlines the City's noise level standards for noise-sensitive areas affected by non-transportation noise sources in the city.

Table 7. City of Hesperia Noise Standards

Receiving Land Use	Maximum Noise Level	Time Period
A-1, A-2, R-1, R-3 and RR Zone Districts	55 dB(A)	10:00 p.m.–7:00 a.m.
A-1, A-2, R-1, R-3 and RR Zone Districts	60 dB(A)*	7:00 a.m.–10:00 p.m.
C-1, C-2, C-3, C-4, C-R, AP, and P-I Zone Districts	65 dB(A)*	Anytime
I-1 and I-2 Zone Districts	70 dB(A)*	Anytime

Source: City of Hesperia (2010a)

* Due to wind noise, the maximum permissible noise level may be adjusted so that it is no greater than five dB(A) above the ambient noise level.

The City allows the following sources of noise to be exempt from the above standards:

- Motor vehicles not under the control of the industrial use;
- Emergency equipment, vehicles and devices;
- Temporary construction, repair, or demolition activities between seven a.m. and seven p.m. except Sundays and federal holidays.

In addition to the standards outlined in Table 7, the following noise goals and policies would be applicable to the proposed project:

> **Goal NS-1:** To achieve and maintain an environment which is free from excessive or harmful noise through identification, control and abatement.
>
> - **Implementation Policy: NS-1.10.** Limit the hours of construction activity in, and around, residential areas in order to reduce the intrusion of noise in the early morning and late evening hours and on weekends and holidays.

- **Implementation Policy: NS-1.13.** Ensure adequate noise control measures at construction sites by requiring that construction equipment be fitted with manufacturer-recommended mufflers and ensuring physical separation of machinery maintenance and staging areas from adjacent residential uses.

Goal NS-2: To achieve and maintain an environment which is free from excessive vibration.

- **Implementation Policy: NS 2.1.** Control exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels as set forth in Table NS-1 and Municipal Code Section 16.20.130.

Environmental Evaluation

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

Construction

During construction of the project, noise generated from construction activities may intermittently dominate the noise environment in the immediate area. Table 8 details the typical noise levels for construction equipment likely to be used in the implementation of the project.

Table 8. Construction Equipment Noise Emission Levels

Equipment Type	Typical Noise Level (dBA) 50 Feet from Source
Concrete Mixer, Dozer, Excavator, Jackhammer, Man Lift, Paver, Scraper	85
Heavy Truck	84
Pneumatic Tools (i.e., pile driving equipment)	85
Concrete Pump	82
Backhoe, Compactor	80

Source: FHWA (2018)

The nearest off-site sensitive noise receptors are single-family residences located adjacent to the northern and southern property lines of the project site. Construction-related noise would be short-term, intermittent, and would not result in a permanent increase in ambient noise within the project area. City of Hesperia Development Code Section 16.20.125 allows temporary construction noise in excess of normally defined thresholds between the hours of 7:00 a.m. and 7:00 p.m. except Sundays and federal holidays. Proposed construction activities would be limited to the hours specified in the City Development Code and construction-related noise would be exempt from the City's noise standards, and impacts would be *less than significant*.

Operation

Development of the proposed project is not predicted to result in the exposure of existing noise-sensitive receptors to absolute noise levels exceeding the City's 60 dBA Ldn land use compatibility thresholds or result in relative increases in the ambient noise environment of 3 dB or more.

The primary increase in noise will be the result of adding vehicle traffic generated by the project to Main Street and Maple Avenue. Roadway vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic.

The General Plan Circulation Element identifies the average daily trips (ADT) for major roadway sections in the City. Major roadway sections in the vicinity of the project site include Main Street between Mariposa Road and Maple Avenue, and Maple Avenue between Main Street and Willow Street. The ADT for the roadway sections in the vicinity of the project site is projected to be 28,890 for Main Street and 6,508 for Maple Avenue. According to the CalEEMod model prepared for the project (Appendix A), the project would generate 67 daily vehicle trips. According to Caltrans, the human ear can begin to detect sound level increases of 3 decibels (dB) in typical noisy environments. A doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dBA increase in sound, would generally be barely detectable. The number of daily vehicle trips generated by the project would only be 0.2% of the existing ADT on Main Street and 1% of the existing ADT on Maple Avenue, respectively. As such, the project would not result in a doubling (100%) of the daily vehicle trips in the immediate vicinity. Therefore, the traffic generated by the project would not result in a substantial permanent increase in ambient roadway noise levels, and off-site noise impacts would be *less than significant.*

The primary stationary noise sources associated with the project would include typical residential noise sources such as HVAC units. The noise attributable to the project would follow the City's limit of 55 dBA Ldn at the surrounding environment outside of the project area. The project's operations would comply with the radio, television, and/or other sound-generating device noise restrictions in Municipal Code Section 9.44.090. The project-generated noise levels associated with the single-family residence would be in compliance with these City noise regulations. Therefore, on-site operational noise impacts from the project would be *less than significant.*

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

The project does not propose substantial grading/earthmoving activities, pile driving, or other high-impact activities that would generate substantial groundborne noise or groundborne vibration during construction. Construction equipment has the potential to generate minor groundborne noise and/or vibration, but these activities would be limited in duration and are not likely to be perceptible from adjacent areas. The project does not propose a use that would generate long-term operational groundborne noise or vibration. Therefore, impacts related to exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels would be *less than significant.*

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

The nearest airport is the Hesperia Municipal Airport, located approximately 4.5 miles southeast of the project site. As the project site is not located within an airport land use plan or within 2 miles of a public airport or private airstrip, *no impact* would occur.

Conclusion

The project would not generate a substantial increase in temporary or permanent ambient noise levels and would not generate groundborne noise in a manner that would result in disturbance. The project site is not

located within an airport land use plan or within 2 miles of an airport. Therefore, potential impacts related to noise would be less than significant.

Mitigation Measures

Mitigation is not necessary.

XIV. Population and Housing

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

Setting

The Regional Housing Needs Assessment, which is required by state law, is a method of allocating housing units to jurisdictions throughout the State. Using State population data, the California Department of Housing and Community Development (HCD) mandates that a certain amount of housing units be constructed within all regional planning areas throughout the State. The Metropolitan Planning Organization under which Hesperia is subject to is the Southern California Association of Governments (SCAG). SCAG, in collaboration with HCD, calculates the number of existing and projected housing units that must be constructed within the six counties and 191 cities in Southern California.

The City of Hesperia Housing Element was updated in 2023 and is intended to adequately plan to meet the housing needs of everyone in the community. This Housing Element covers the planning period of October 15, 2021, through October 15, 2029, and establishes goals and policies intended to preserve the character of existing single-family residential neighborhoods, continue to improve higher-density neighborhoods, achieve diversity in types of housing to accommodate populations with varying socioeconomic needs, and comply with all state laws.

Hesperia has experienced major population growth since its incorporation in 1988. From 1990 to 2019, Hesperia experienced a population increase of 91%. As of January 2019, Hesperia's population was estimated to be 94,203. Development activity has slowed considerably since 2006, but Hesperia is expected to undergo some additional growth in the next few years, with the population expected to increase by another 24.3% to 117,141 residents by 2030 (City of Hesperia 2023).

Single-family residences are permitted in all residential zones in the City, except the High Density Residential zone of the Main Street and Freeway Corridor Specific Plan, unless a project is inconsistent with the residential densities laid out in the General Plan. Single-family residential development requires land dedication, impact fees, or a combination of both for developing parks or recreational areas for residents (City of Hesperia 2023).

Environmental Evaluation

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

Based on the current City Housing Element, the average household size in the City in 2019 was 3.52 persons per household (City of Hesperia 2023). Accordingly, the project would be anticipated to result in the establishment of a residential population of approximately 25 people. In addition, the project site is zoned LDR and the proposed residential density of the site is within the allowed residential density of this zone (see Section XI. Land Use and Planning) and would not result in the extension of utility services or roadways into previously unserved/inaccessible areas. Therefore, the project would not result in substantial unplanned population growth in an area and impacts would be *less than significant*.

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

The project site is currently undeveloped and does not support any existing residential uses. Therefore, *no impacts* would occur.

Conclusion

The project would not induce substantial unplanned population growth or displace any existing residential uses. Project impacts associated with Population and Housing would be less than significant and no mitigation is necessary.

Mitigation Measures

No mitigation is necessary.

XV. Public Services

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

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Setting

The San Bernardino County Fire Protection District (SBCFD) is responsible for fire protection services within the City of Hesperia. The nearest SBCFD station is Fire Station 304, located at 15660 Eucalyptus Street, approximately 2.4 miles northeast of the project site. The Hesperia Police Department is responsible for protecting the life and property of the residents living in the City and is located at 15840 Smoke Tree Street, approximately 2.2 miles southeast of the project site.

Hesperia Unified School District provides public education services for kindergarten through senior high school students. It includes three comprehensive high schools, two continuation high schools, three middle schools, 12 elementary schools, three choice schools, two alternative schools, one adult education school, and five charter schools. There are 15 parks and recreational facilities in the City that offer a variety of amenities such as picnicking, swimming, fishing, playgrounds, sports fields, and hiking.

Environmental Evaluation

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

Fire protection?

The project would result in the development of seven single-family homes and would generate an estimated population of 25 people. The project would only marginally increase demand on existing public services, including fire protection services provided by SBCFD. The project would be constructed in accordance with applicable CFC regulations and would be subject to the payment of Development Impact Fees to address the marginal increase in demand on public services associated with new development. Based on the marginal population growth, adherence to CFC regulations, and payment of Development Impact Fees, implementation of the project would not increase demand on existing public services and facilities in a manner that would require new or physically altered fire protection facilities. Therefore, the project would not require new or physically altered governmental facilities for fire protection services, and the impacts would be *less than significant*.

Police protection?

The project would result in the development of seven single-family homes and would generate an estimated population of 25 people. The project would only marginally increase demand on existing public services, including police protection services provided by the Hesperia Police Department. The project would be subject to the payment of Development Impact Fees to address the marginal increase in demand

on police protection services associated with new development. As such, implementation of the project would have a marginal increase in demand on existing police protection services and would not directly result in the need for expansion of existing or the construction of new police facilities. Therefore, the project would not require new or physically altered governmental facilities for police protection services, and the impacts would be *less than significant*.

Schools?

The project would result in the development of seven single-family homes and would generate an estimated population of 25 people. The project would only marginally increase the number of school-aged children within the city. The project would be subject to the payment of Development Impact Fees and state school taxes to address the marginal increase in demand on the Hesperia Unified School District associated with new development. As such, implementation of the project would have a marginal increase in demand on existing public schools and would not directly result in the need for expansion of existing or the construction of new school facilities. Therefore, the project would not require new or physically altered public school facilities, and the impacts would be *less than significant*.

Parks?

The project would result in the development of seven single-family homes and would generate an estimated population of 25 people. The project would be subject to the payment of Development Impact Fees to address the marginal increase in demand on public park facilities associated with new development. As such, implementation of the project would have a marginal increase in demand on existing public park facilities and would not directly result in the need for expansion of existing or the construction of new facilities. Therefore, the proposed project would not require the construction of new or physically altered public park facilities, and the impacts would be *less than significant*.

Other public facilities?

The project would result in the development of seven single-family homes and would generate an estimated population of 25 people. The project would only marginally increase the use of other public facilities, such as roadways and public libraries. The project would be subject to the City's standard Development Impact Fees, which would offset the project's marginal contribution to increased use of City facilities. Therefore, potential impacts on other public facilities would be *less than significant.*

Conclusion

The project would not induce unplanned population growth. Operation of the project may result in a marginal cumulative increase in demand on City services and facilities, including fire protection, police protection, schools, parks and recreational facilities, and other public facilities; however, construction of new facilities would not be required. Therefore, the project would not result in significant impacts to public services.

Mitigation Measures

Mitigation is not necessary.

XVI. Recreation

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

Setting

The Hesperia Recreation and Park District is an independent special district within the City of Hesperia. The City of Hesperia and the Hesperia Recreation and Park District share responsibilities in providing open space recreation and activities to the residents of the City, with most public recreational facilities provided by the Hesperia Recreation and Park District. There are 15 parks and recreational facilities in the City that offer a variety of amenities such as picnicking, swimming, fishing, playgrounds, sports fields, and hiking (City of Hesperia 2024).

The City of Hesperia General Plan Open Space Element identifies goals, policies, and programs to help plan, develop, and maintain community parks and recreation facilities:

> **Goal OS-5:** Continue to work with the Hesperia Recreation and Park District to create and maintain a diverse park system that includes parks, community facilities, natural open space areas, and trails for residents to enjoy.
>
> - **Implementation Policy: OS-5.1.** Create a process to coordinate with the Hesperia Recreation and Park District in selection and use of open space.
> - **Implementation Policy: OS-5.2.** Provide parks and recreation facilities at a rate of five (5) acres per 1,000 residents.
> - **Implementation Policy: OS-5.3.** Assess park needs annually based upon type, population and location and coordinate need with Hesperia Recreation and Park District.
> - **Implementation Policy: OS-5.4.** Develop a high-quality network of parks and recreation facilities that meets the needs of all residents, including children, young adults, seniors, families and disabled individuals.
> - **Implementation Policy: OS-5.5.** Develop adaptable recreation facilities that have multiuse capabilities that can change with demand and population.
> - **Implementation Policy: OS-5.6.** Coordinate with other agencies and jurisdictions in a joint effort to provide recreational facilities in the City.

Environmental Evaluation

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

The project would result in a marginal increase in demand on existing public recreational facilities. The project would be subject to the payment of Development Impact Fees to address the marginal increase in demand on public recreational facilities associated with the proposed development. Based on the marginal population growth and required payment of Development Impact Fees, implementation of the project would not increase demand on existing public services and facilities such that substantial physical deterioration of the facility would occur or be accelerated; therefore, impacts would be *less than significant.*

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

The project does not include, nor would it require, the construction of new or expanded recreational facilities. Therefore, *no impacts* would occur.

Conclusion

The project would not increase the use of existing recreational facilities in a manner that would lead to substantial deterioration of existing recreational facilities or require the development of new or expanded recreational facilities. Therefore, impacts would be less than significant, and mitigation is not necessary.

Mitigation Measures

Mitigation is not necessary.

XVII. Transportation

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

Setting

In 2013 SB 743 was signed into law with the intent to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions" and required the Governor's Office of Planning and Research to identify new metrics for identifying and mitigating transportation impacts within CEQA. As a result, in December 2018, the California Natural Resources Agency certified and adopted updates to the State CEQA Guidelines. The revisions included new requirements related to the implementation of SB 743 and identified vehicle miles traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis under CEQA (as detailed in Section 15064.3(b)).

Environmental Evaluation

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

The Circulation Element of the City's General Plan establishes that roadways and intersections are required to operate at a vehicle Level of Service (LOS) D or better. The Circulation Element also identifies the ADT and the maximum roadway capacities for achieving a LOS D rating for major roadway sections in the City. The major roadway sections in the vicinity of the project site include Main Street between Mariposa Road and Maple Avenue, and Maple Avenue between Main Street and Willow Street. The ADT for these roadway sections in the vicinity of the project site are 28,890 for Main Street and 6,508 for Maple Avenue. The maximum roadway capacities for achieving a LOS D rating for these roadway sections are 46,100 on Main Street and 30,600 on Maple Avenue. According to the CalEEMod model prepared for the project (Appendix A), the project would generate 67 daily vehicle trips. The number of daily vehicle trips generated by the project would only be 0.2% of the existing ADT on Main Street and 1% of the existing ADT on Maple Avenue, respectively. As such, the project would not result in either roadway achieving less than a LOS D rating. Based on the marginal increase of vehicle trips generated by the project, the project would be consistent with the Circulation Element and impacts would be *less than significant*.

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

In July 2020, the City adopted the *City of Hesperia Traffic Impact Analysis Guidelines for Vehicles Miles Traveled (VMT) and Level of Service Assessment (LOS)* which establish uniform analysis methodology and thresholds of significance for determining VMT impacts under CEQA. The City's Guidelines indicate that residential projects located within a low VMT area may be presumed to have a less than significant impact absent substantial evidence to the contrary, and if the project would not significantly alter the existing built environment in such a way as to increase the rate of length of vehicle trips. To identify if a project is in a low VMT area, the San Bernardino County Transit Authority (SBCTA) screening tool is used to compare the appropriate baseline VMT for the project's traffic analysis zone (TAZ) to the City's adopted threshold of significance of 26.4 VMT per service population (SP).

Based on the results of SBCTA VMT Screening Tool, the proposed project's TAZ VMT is calculated to be 23.6 VMT/SP. Since the project's TAZ VMT is less than the City's Threshold of Significance of 26.4 VMT/SP, the proposed project is determined to be within a low VMT area and the project would be consistent with the City's VMT Screening guidelines. Therefore, impacts would be *less than significant*.

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

The project includes construction of an access road and driveway approach terminating in a cul-de-sac. This roadway would be named San Luis Street and would be constructed with a sidewalk, curb, and gutter surrounding it per City standards with ramps at each driveway of the residential lots as well as the gated access. The project would include frontage improvements along Topaz Avenue to better support traffic through the area, which would be constructed in accordance with City construction standards. Otherwise, the project would not alter pedestrian or vehicle access to the project site would not introduce incompatible design features or equipment that would substantially increase the risk of hazards. Therefore, the project would not substantially increase hazards due to a design feature, and the impact would be *less than significant.*

d) Would the project result in inadequate emergency access?

The project site would be accessed off a new existing driveway from Topaz Avenue. The driveway will be designed to provide adequate emergency and worker access to the project site. Furthermore, roads adjacent to the project site would not require closure during project construction. Therefore, the impact would be *less than significant.*

Conclusion

The project would not generate a substantial number of new vehicle trips, generate a significant increase in VMT, or conflict with a program plan, ordinance, or policy addressing the circulation system. The proposed project would not introduce new hazardous roadway design features or incompatible land uses or result in inadequate emergency access. Therefore, impacts related to traffic and transportation would be less than significant.

Mitigation Measures

Additional mitigation is not necessary.

XVIII. Tribal Cultural Resources

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
(i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Setting

Approved in 2014, AB 52 added tribal cultural resources to the categories of resources that must be evaluated under CEQA. Tribal cultural resources are defined as either of the following:

1. Sites, features, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the CRHR; or
    b. Included in a local register of historical resources as defined in California PRC Section 5020.1(k).
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth California PRC Section 5024.1(c).

In applying these criteria for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Recognizing that tribes have expertise with regard to their tribal history and practices, AB 52 requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project if they have requested notice of projects proposed within that area. If the tribe requests consultation within 30 days upon receipt of the notice, the lead agency must consult with the tribe regarding the potential for adverse impacts on tribal cultural resources as a result of a project. Consultation may include discussing the type of environmental review necessary, the presence and/or significance of tribal cultural resources, the level of significance of a project's impacts on the tribal cultural resources, and available project alternatives and mitigation measures recommended by the tribe to avoid or lessen potential impacts on tribal cultural resources.

Environmental Evaluation

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

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

A records search was conducted for the project site that included a request for review of the Sacred Lands File, which produced positive results, as well as a records search of the SCCIC of the CHRIS, which concluded that no archaeological resources have been recorded previously within the project site or within a quarter-mile radius of the project site boundaries.

A cultural resource assessment (Appendix C) included an examination of CHRIS records, communication with Native American tribal representatives, archival and background research, a buried site sensitivity assessment, and a pedestrian survey. No archaeological resources were identified within the project area as a result of the assessment. Additionally, according to the cultural resource assessment, the sensitivity for unidentified prehistoric and historic Native American-affiliated archaeological resources, as well as the sensitivity for historic period (non-Native American) archaeological resources, is considered to be low. Therefore, *no impacts* associated with tribal cultural resources would occur.

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

Pursuant to AB 52, the City provided notice to local California native tribes with geographic and/or cultural ties to the project region. Referral letters were sent to tribal representatives on December 9, 2024. As a result of the referral letters, the Yuhaaviatam of San Manuel Nation (formerly the San Manuel Band of Mission Indians) requested additional information regarding the project. As a result of the review of project plans and reports, the Yuhaaviatam of San Manuel Nation (YSMN) submitted a letter to the City stating that the project area exists within Serrano ancestral territory and, therefore, is of interest to the Tribe (Appendix D). However, due to the nature and location of the project, and given the CRM Department's present state of knowledge, YSMN does not have any concerns with the project's implementation, as proposed. However, archaeological resources, while unanticipated, are unpredictable, and the possibility of encountering as-yet unidentified archaeological resources within the project area cannot be completely ruled out. Therefore, Mitigation Measures TCR-1 and TCR-2 have been identified to avoid and/or reduce potential impacts to archaeological resources. Upon implementation of the identified mitigation measures, impacts to tribal cultural resources would be *less than significant with mitigation.*

Conclusion

No tribal cultural resources have been identified as having the potential to occur on-site, and all tribal consultation requirements of AB 52 have been fulfilled. However, archaeological resources, while unanticipated, are unpredictable, and the possibility of encountering as-yet unidentified archaeological resources within the project area cannot be completely ruled out. With the implementation of Mitigation Measures CR-1 through CR-4 and TCR-1 and TCR-2, the project would not result in adverse impacts to known or unknown tribal cultural resources. Therefore, with the implementation of these mitigation measures, impacts related to tribal cultural resources would be less than significant.

Mitigation Measures

TCR-1 **Discovery of cultural resources**. The Yuhaaviatam of San Manuel Nation Cultural Resources Management Department (YSMN) shall be contacted if any pre-contact cultural resources are discovered during project implementation, and provided information regarding the nature of the find, to provide Tribal input with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA, a Cultural Resources Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with YSMN, and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents YSMN for the remainder of the project, should YSMN elect to place a monitor on-site.

TCR-2 **Archaeological/cultural documents created as a part of the project.** All archaeological/cultural documents created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the City for dissemination to YSMN. The City shall, in good faith, consult with YSMN throughout the life of the project.

XIX. Utilities and Service Systems

Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
(a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
(b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
(c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐

	Environmental Issues	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
(d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
(e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

The project site is located within the HWD service area. The water supply for the HWD is obtained from groundwater located in the Alto Sub-Basin of the Mojave River Watershed and groundwater aquifer. The Mojave Basin Area was the subject of a court-ordered adjudication in 1993 due to the rapid growth within the area, increased withdrawals, and lowered groundwater levels. The court's Judgment appointed Mojave Water Agency (MWA) as Watermaster of the Mojave Basin Area. The MWA recharges the groundwater basins with State Water Project–imported water, natural surface water flows, wastewater imports from outside the Mojave Water Agency's service area, and return flow from pumped groundwater not consumptively used. The court-ordered adjudication of the Mojave Basin Area allocates a variable FPA to each purveyor that supplies more than 10 acre-feet per year (AFY). The City's FPA for 2020-2021 was 11,871 AFY. The 2020 Urban Water Management Plan (UWMP) accounts for the population of Hesperia to increase to from 97,000 in 2020 to 130,000 people in 2045. The UWMP estimates that this population increase would increase water demand in the district by 4,000 AFY.

Wastewater treatment is provided by the Victor Valley Wastewater Reclamation Authority (VVWRA), a Joint Powers Authority with the City of Victorville, City of Hesperia, Town of Apple Valley, and the County of San Bernardino. The main treatment plant is located in the northern portion of the City of Victorville. Other utility service providers for the City include electricity from SCE, natural gas from Southwest Gas Corporation, and solid waste services by Advance Disposal.

Environmental Evaluation

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

The project includes installation of water and wastewater utility conveyance pipes on-site to connect to the City water system and wastewater conveyance and treatment facilities located beneath Topaz Street. These components have been evaluated for their potential to result in adverse environmental effects throughout this document. Mitigation Measures BIO-1 through BIO-3, CR-1 through CR-4, and TCR-1 and TCR-2, would reduce potentially significant environmental impacts resulting from installation and establishment of new utility connections associated with air quality, biological resources, cultural resources, and tribal cultural resources to a less-than-significant level. Therefore, potential environmental impacts associated with the construction of utility connections would be *less than significant with mitigation.*

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

The project would be served with potable water by the HWD. The UWMP indicates that the per capita water use rate is 129 gallons per day per person (HWD 2020). The project is estimated to increase the population by approximately 25 persons which would create an additional water demand of 3.32 AFY. The project's incremental increase in water demand would be accommodated by the City's water supply. Development of this site is consistent with the City's long-range planning documents and has been anticipated by the City's water supply planning. The City has adequate water supply to provide potable and other water to the proposed project; therefore, the project would have sufficient water supplies available to serve the project and reasonably foreseeable future development, and impacts would be *less than significant.*

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

According to the VVWRA the per dwelling unit wastewater generation rate is 240 gallons per day per dwelling unit (VVWRA 2009). The project will develop seven single-family homes, which would create an additional wastewater generation of approximately 1,680 gallons per year. The treatment plant has a design capacity to treat 18 million gallons per day of wastewater. The treatment plant currently treats about 10.7 million gallons of wastewater per day. As such, there is adequate capacity to serve the project's projected demand in addition to the VVWRA's existing commitments. Therefore, the project would have adequate capacity to serve the project's projected wastewater demand, and impacts would be *less than significant*.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction of the project may result in a temporary increase in solid waste, which would be disposed of in accordance with applicable state and local laws and regulations, such as California Green Building Standards Code (CALGreen) Sections 4.408 and 5.408, which require diversion of at least 75% of construction waste. Based on required compliance with CALGreen regulations, construction of the project would not generate solid waste in excess of local infrastructure capacity.

The project would result in an increase in solid waste as a result of the development of seven new single-family homes. According to the CalEEMod model prepared for the project (Appendix A), the project would generate an estimated 6.72 tons per year of solid waste. Operational solid waste and recycling would be serviced by the Advance Disposal Company. The closest landfill to the project site is the Victorville Sanitary Landfill located at 18600 Stoddard Wells Road, approximately 11 miles to the northeast. According the California Department of Resources Recycling and Recovery (CalRecycle) website, the Victorville Sanitary Landfill has a daily throughput of 3,000 tons per day and a remaining capacity of 93,400,000 cubic yards (CalRecycle 2020). The expected closure is October 1, 2047. As such, there is adequate landfill capacity to serve the project, and impacts would be *less than significant.*

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

As previously described, operation of the project would result in a marginal increase in solid waste, and construction-related waste (i.e., demolished materials) would be disposed of according to federal and state regulations, including CALGreen standards for diversion of construction waste. Operational and construction-related solid waste would be disposed of in accordance with applicable federal, state, and local waste requirements, and impacts would be *less than significant*.

Conclusion

Implementation of the mitigation measures identified below would reduce potential adverse environmental impacts related to the expansion of utility infrastructure at the project site. There would be adequate water supply and wastewater treatment capacity to serve the project. Further, the proposed project would not generate waste in excess of state or local standards or in excess of the capacity of local infrastructure and would be consistent with applicable federal, state, and local waste requirements. With implementation of the identified mitigation measures, impacts related to utilities and service systems would be less than significant.

Mitigation Measures

Implement Mitigation Measures BIO-1 through BIO-18, CR-1 through CR-4, and TCR-1 and TCR-2.

XX. Wildfire

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

Setting

WILDFIRE RISK FACTORS

In central California, the fire season usually extends from roughly May through October; however, recent events indicate that wildfire behavior, frequency, and duration of the fire season are changing in

California. Topography influences wildland fire to such an extent that slope conditions can often become a critical wildland fire factor. Conditions such as speed and direction of dominant wind patterns, the length and steepness of slopes, direction of exposure, and/or overall ruggedness of terrain influence the potential intensity and behavior of wildland fires and/or the rates at which they may spread (Barros et al. 2013).

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION FIRE HAZARD SEVERITY ZONES

Fire hazard severity zones are defined by CAL FIRE based on the presence of fire-prone vegetation, climate, topography, assets at risk (e.g., high population centers), and a fire protection agency's ability to provide service to the area (CAL FIRE 2024a). The City of Hesperia is located within a local responsibility area (LRA) and therefore does not have a CAL FIRE fire hazard severity zone rating.

CALIFORNIA FIRE CODE

The CFC provides minimum standards for many aspects of fire prevention and suppression activities. These standards include provisions for emergency vehicle access, water supply, fire protection systems, and the use of fire-resistant building materials.

Environmental Evaluation

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

The project is not located within a state responsibility area and the nearest mapped very high fire hazard severity zone is located approximately 2.2 miles southwest of the project site near Muscatel Street (CAL FIRE 2024). The project includes development of seven single-family residences within a LDR zone. As discussed in Section XI. Land Use and Planning, the project proposes new residential uses within the allowed residential density for LDR. While project construction would result in temporary road and/or lane closures, access for surrounding properties would be maintained at all times and the project would not result in any permanent changes to emergency access in the area. During operation, the project's on-site population would contribute additional vehicles on roadways in the event of a community evacuation. However, based on the relatively small scale of development and the project's consistency with applicable zoning and density requirements this impact would be negligible. Based on the project site's distance from a very high fire hazard severity zone, relatively small scale of proposed development, and consistency with applicable local development density standards, the project would not substantially impair an adopted emergency response plan or emergency evacuation plan and impacts would be *less than significant*.

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

The project site is generally flat and does not contain substantial dense vegetation. Proposed uses would not significantly increase or exacerbate potential fire risks and the project does not propose any design elements that would exacerbate risks and expose project occupants to pollutant concentrations from a

wildfire or the uncontrolled spread of wildfire. Therefore, potential impacts would be *less than significant*.

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

The project includes construction of a 191-foot-long access road and driveway approach terminating in a cul-de-sac and installation of water, wastewater, and stormwater pipelines within the project site. All project construction, improvements, and utility installation would be designed and implemented in accordance with applicable CBC and CFC standards. The project would not require the installation or maintenance of infrastructure that would exacerbate fire risk or result in temporary or ongoing impacts to the environment as a result of the development of wildfire prevention, protection, and/or management techniques. Therefore, potential impacts would be *less than significant*.

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

The project site is generally flat and would not be located near a steep hillslope or in an area subject to downstream flooding or landslides. The project site is not in a high or very high wildfire risk area and does not include any design elements that would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, impacts would be *less than significant*.

Conclusion

The project would not expose people or structures to new or exacerbated wildfire risks and would not require the development of new or expanded infrastructure or maintenance to reduce wildfire risks. Therefore, potential impacts associated with wildfire would be less than significant and no mitigation measures are necessary.

Mitigation Measures

No mitigation is necessary.

XXI. Mandatory Findings of Significance

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

Environmental Evaluation

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

As discussed in each resource section above, the proposed project would have the potential to result in significant impacts to biological resources and cultural resources during project construction activities. Mitigation measures have been identified to address these potential impacts and with implementation of these measures, impacts would be reduced to less than significant. Therefore, with compliance with existing state and local policies and implementation of identified mitigation measures, impacts associated with degradation of the quality of the environment, fish and wildlife species and populations, plant and animal communities, and examples of major periods of California history or prehistory would be *less than significant with mitigation*.

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

Evaluation of cumulative impacts has been incorporated into each resource section above. Potentially significant impacts associated with biological resources and cultural resources would be limited to the

construction period. Potentially significant impacts identified associated with biological resources would address site-specific biological resources and no cumulatively considerable impacts associated with loss of habitat or habitat fragmentation were identified. Potentially significant impacts to cultural resources included potential adverse effects on previously undiscovered resources within the disturbance areas of the project site. Mitigation has been identified to preserve and protect any significant cultural resources if found during project activities; therefore, impacts to cultural resources would not be cumulatively considerable.

Potential impacts identified associated with temporary lane closures, construction noise, and localized concentrations of air pollutants would all be associated with construction activities and no long-term impacts would occur. Cumulative impacts associated with energy, GHG emissions, water supply, traffic, and other issue areas were evaluated and found to be less than significant and less than cumulatively considerable. Therefore, potential impacts would be *less than cumulatively considerable.*

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

As described in Section III. *Air Quality*, VII. *Geology and Soils*, IX. *Hazards and Hazardous Materials*, X. *Hydrology and Water Quality*, XIII. *Noise*, and XX. *Wildfire*, the project has been evaluated for environmental effects that may cause substantial adverse impacts on human beings, directly or indirectly. As detailed above, potential project impacts associated with each of these issue areas were determined to be less than significant. Therefore, the project would not have environmental effects which may cause substantial adverse effects on human beings and impacts would be *less than significant*.

Conclusion

The project would not result in any cumulatively considerable impacts or substantial adverse effects on human beings. Project impacts associated with degradation of the quality of the environment, fish and wildlife species and populations, plant and animal communities, and examples of major periods of California history or prehistory would be *less than significant with mitigation*.

Mitigation Measures

Implement Mitigation Measures BIO-1 through BIO-18, CR-1 through CR-4, and TCR-1 and TCR-2.

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APPENDIX A

CalEEMod Results

Hesperia Topaz Residential Project Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Hesperia Topaz Residential Project
Construction Start Date	10/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.80
Precipitation (days)	1.40
Location	34.43651702535328, -117.35596062333211
County	San Bernardino-Mojave Desert
City	Hesperia
Air District	Mojave Desert AQMD
Air Basin	Mojave Desert
TAZ	5129
EDFZ	10
Electric Utility	Southern California Edison
Gas Utility	Southwest Gas Corp.
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	7.00	Dwelling Unit	2.51	13,650	81,990	—	23.0	—

Parking Lot	12.7	1000sqft	2.51	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.14	10.5	13.3	0.02	0.43	0.04	0.47	0.40	0.01	0.41	—	2,458	2,458	0.10	0.02	0.20	2,468
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.73	36.1	34.0	0.05	1.60	19.9	21.5	1.47	10.2	11.6	—	5,526	5,526	0.23	0.23	0.09	5,548
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	3.73	4.70	0.01	0.15	0.81	0.92	0.14	0.39	0.49	—	874	874	0.04	0.02	0.13	878
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.07	0.68	0.86	< 0.005	0.03	0.15	0.17	0.03	0.07	0.09	—	145	145	0.01	< 0.005	0.02	145

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	1.14	10.5	13.3	0.02	0.43	0.04	0.47	0.40	0.01	0.41	—	2,458	2,458	0.10	0.02	0.20	2,468
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.73	36.1	34.0	0.05	1.60	19.9	21.5	1.47	10.2	11.6	—	5,526	5,526	0.23	0.23	0.09	5,548
2025	1.14	10.5	13.2	0.02	0.43	0.04	0.47	0.40	0.01	0.41	—	2,454	2,454	0.10	0.02	0.01	2,464
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.28	2.46	2.67	< 0.005	0.11	0.81	0.92	0.10	0.39	0.49	—	509	509	0.02	0.02	0.13	515
2025	0.41	3.73	4.70	0.01	0.15	0.01	0.17	0.14	< 0.005	0.14	—	874	874	0.04	0.01	0.03	878
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.05	0.45	0.49	< 0.005	0.02	0.15	0.17	0.02	0.07	0.09	—	84.3	84.3	< 0.005	< 0.005	0.02	85.3
2025	0.07	0.68	0.86	< 0.005	0.03	< 0.005	0.03	0.03	< 0.005	0.03	—	145	145	0.01	< 0.005	0.01	145

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.4	0.53	16.0	0.03	1.83	0.42	2.25	1.82	0.11	1.93	199	903	1,102	0.64	0.04	2.01	1,132
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.3	0.55	15.1	0.03	1.83	0.42	2.25	1.82	0.11	1.93	199	857	1,055	0.64	0.04	0.15	1,084
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.04	0.39	5.18	0.01	0.42	0.41	0.83	0.42	0.10	0.52	47.9	794	842	0.50	0.03	0.91	864
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.56	0.07	0.95	< 0.005	0.08	0.07	0.15	0.08	0.02	0.09	7.92	131	139	0.08	0.01	0.15	143

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.33	0.26	2.39	0.01	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	517	517	0.02	0.02	1.91	527
Area	11.1	0.21	13.6	0.02	1.82	—	1.82	1.81	—	1.81	194	82.1	277	0.18	0.01	—	285
Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	287	287	0.02	< 0.005	—	288
Water	—	—	—	—	—	—	—	—	—	—	0.56	16.2	16.7	0.06	< 0.005	—	18.6
Waste	—	—	—	—	—	—	—	—	—	—	3.62	0.00	3.62	0.36	0.00	—	12.7
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Total	11.4	0.53	16.0	0.03	1.83	0.42	2.25	1.82	0.11	1.93	199	903	1,102	0.64	0.04	2.01	1,132
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.29	0.28	1.88	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	472	472	0.02	0.02	0.05	480
Area	11.0	0.21	13.2	0.02	1.82	—	1.82	1.81	—	1.81	194	81.1	275	0.18	0.01	—	284
Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	287	287	0.02	< 0.005	—	288
Water	—	—	—	—	—	—	—	—	—	—	0.56	16.2	16.7	0.06	< 0.005	—	18.6
Waste	—	—	—	—	—	—	—	—	—	—	3.62	0.00	3.62	0.36	0.00	—	12.7
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Total	11.3	0.55	15.1	0.03	1.83	0.42	2.25	1.82	0.11	1.93	199	857	1,055	0.64	0.04	0.15	1,084
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.29	0.29	1.99	< 0.005	< 0.005	0.41	0.41	< 0.005	0.10	0.11	—	472	472	0.02	0.02	0.81	480
Area	2.76	0.05	3.17	0.01	0.41	—	0.41	0.41	—	0.41	43.7	18.7	62.4	0.04	< 0.005	—	64.4
Energy	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	287	287	0.02	< 0.005	—	288
Water	—	—	—	—	—	—	—	—	—	—	0.56	16.2	16.7	0.06	< 0.005	—	18.6
Waste	—	—	—	—	—	—	—	—	—	—	3.62	0.00	3.62	0.36	0.00	—	12.7

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Total	3.04	0.39	5.18	0.01	0.42	0.41	0.83	0.42	0.10	0.52	47.9	794	842	0.50	0.03	0.91	864
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.05	0.05	0.36	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	78.1	78.1	< 0.005	< 0.005	0.13	79.5
Area	0.50	0.01	0.58	< 0.005	0.07	—	0.07	0.07	—	0.07	7.23	3.10	10.3	0.01	< 0.005	—	10.7
Energy	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	47.6	47.6	< 0.005	< 0.005	—	47.8
Water	—	—	—	—	—	—	—	—	—	—	0.09	2.67	2.77	0.01	< 0.005	—	3.08
Waste	—	—	—	—	—	—	—	—	—	—	0.60	0.00	0.60	0.06	0.00	—	2.10
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	0.56	0.07	0.95	< 0.005	0.08	0.07	0.15	0.08	0.02	0.09	7.92	131	139	0.08	0.01	0.15	143

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.49	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	72.5	72.5	< 0.005	< 0.005	—	72.8
Dust From Material Movement	—	—	—	—	—	0.27	0.27	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.0	12.0	< 0.005	< 0.005	—	12.1
Dust From Material Movement	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.11	1.06	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	231	231	0.01	0.01	0.03	234
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.25	3.25	< 0.005	< 0.005	0.01	3.30
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.90	18.2	18.8	0.03	0.84	—	0.84	0.77	—	0.77	—	2,958	2,958	0.12	0.02	—	2,969
Dust From Material Movement	—	—	—	—	—	7.10	7.10	—	3.43	3.43	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	1.25	1.29	< 0.005	0.06	—	0.06	0.05	—	0.05	—	203	203	0.01	< 0.005	—	203
Dust From Material Movement	—	—	—	—	—	0.49	0.49	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.23	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.5	33.5	< 0.005	< 0.005	—	33.7
Dust From Material Movement	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.09	0.91	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	198	198	0.01	0.01	0.02	200
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	1.48	0.31	0.01	0.02	0.32	0.35	0.02	0.08	0.11	—	1,241	1,241	< 0.005	0.20	0.07	1,299
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	0.03	14.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.10	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	84.9	84.9	< 0.005	0.01	0.08	89.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.31	2.31	< 0.005	< 0.005	< 0.005	2.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.1	14.1	< 0.005	< 0.005	0.01	14.7

3.5. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.11	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.5	23.5	< 0.005	< 0.005	—	23.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.88	3.88	< 0.005	< 0.005	—	3.90
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.02	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.2	33.2	< 0.005	< 0.005	< 0.005	33.6
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.3	24.3	< 0.005	< 0.005	< 0.005	25.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.34

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.04	0.04	< 0.005	< 0.005	< 0.005	0.04
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	3.72	4.64	0.01	0.15	—	0.15	0.14	—	0.14	—	854	854	0.03	0.01	—	857
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.07	0.68	0.85	< 0.005	0.03	—	0.03	0.03	—	0.03	—	141	141	0.01	< 0.005	—	142
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.21	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	36.8	36.8	< 0.005	< 0.005	0.13	37.3
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.8	23.8	< 0.005	< 0.005	0.07	24.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.5	32.5	< 0.005	< 0.005	< 0.005	33.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.9	23.9	< 0.005	< 0.005	< 0.005	24.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.49	8.49	< 0.005	< 0.005	0.01	8.84
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.98	1.98	< 0.005	< 0.005	< 0.005	2.00
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.41	1.41	< 0.005	< 0.005	< 0.005	1.46
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	7.81	10.0	0.01	0.39	—	0.39	0.36	—	0.36	—	1,512	1,512	0.06	0.01	—	1,517
Paving	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.49	0.63	< 0.005	0.02	—	0.02	0.02	—	0.02	—	95.3	95.3	< 0.005	< 0.005	—	95.6
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.8	15.8	< 0.005	< 0.005	—	15.8
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.09	0.91	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	198	198	0.01	0.01	0.02	200
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.8	12.8	< 0.005	< 0.005	0.02	13.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.12	2.12	< 0.005	< 0.005	< 0.005	2.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Trenching (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.33	0.26	2.39	0.01	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	517	517	0.02	0.02	1.91	527
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.33	0.26	2.39	0.01	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	517	517	0.02	0.02	1.91	527
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.29	0.28	1.88	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	472	472	0.02	0.02	0.05	480
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.29	0.28	1.88	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	472	472	0.02	0.02	0.05	480
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.05	0.05	0.36	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	78.1	78.1	< 0.005	< 0.005	0.13	79.5
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.05	0.05	0.36	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	78.1	78.1	< 0.005	< 0.005	0.13	79.5

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	77.6	77.6	< 0.005	< 0.005	—	77.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	140	140	0.01	< 0.005	—	140
Total	—	—	—	—	—	—	—	—	—	—	—	217	217	0.01	< 0.005	—	218
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	77.6	77.6	< 0.005	< 0.005	—	77.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	140	140	0.01	< 0.005	—	140
Total	—	—	—	—	—	—	—	—	—	—	—	217	217	0.01	< 0.005	—	218
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	12.9	12.9	< 0.005	< 0.005	—	12.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	23.1	23.1	< 0.005	< 0.005	—	23.2
Total	—	—	—	—	—	—	—	—	—	—	—	36.0	36.0	< 0.005	< 0.005	—	36.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.2	70.2	0.01	< 0.005	—	70.4

Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.2	70.2	0.01	< 0.005	—	70.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.2	70.2	0.01	< 0.005	—	70.4
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.06	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	70.2	70.2	0.01	< 0.005	—	70.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.6	11.6	< 0.005	< 0.005	—	11.7

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	10.7	0.21	13.2	0.02	1.82	—	1.82	1.81	—	1.81	194	81.1	275	0.18	0.01	—	284
Consumer Products	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	< 0.005	0.40	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.06	1.06	< 0.005	< 0.005	—	1.07
Total	11.1	0.21	13.6	0.02	1.82	—	1.82	1.81	—	1.81	194	82.1	277	0.18	0.01	—	285
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	10.7	0.21	13.2	0.02	1.82	—	1.82	1.81	—	1.81	194	81.1	275	0.18	0.01	—	284
Consumer Products	0.30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	11.0	0.21	13.2	0.02	1.82	—	1.82	1.81	—	1.81	194	81.1	275	0.18	0.01	—	284
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.01	0.54	< 0.005	0.07	—	0.07	0.07	—	0.07	7.23	3.02	10.2	0.01	< 0.005	—	10.6
Consumer Products	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.09	0.09	< 0.005	< 0.005	—	0.09
Total	0.50	0.01	0.58	< 0.005	0.07	—	0.07	0.07	—	0.07	7.23	3.10	10.3	0.01	< 0.005	—	10.7

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	0.56	16.2	16.7	0.06	< 0.005	—	18.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.56	16.2	16.7	0.06	< 0.005	—	18.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	0.56	16.2	16.7	0.06	< 0.005	—	18.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.56	16.2	16.7	0.06	< 0.005	—	18.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	0.09	2.67	2.77	0.01	< 0.005	—	3.08
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.09	2.67	2.77	0.01	< 0.005	—	3.08

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	3.62	0.00	3.62	0.36	0.00	—	12.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	3.62	0.00	3.62	0.36	0.00	—	12.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	3.62	0.00	3.62	0.36	0.00	—	12.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	3.62	0.00	3.62	0.36	0.00	—	12.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	0.60	0.00	0.60	0.06	0.00	—	2.10
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	0.60	0.00	0.60	0.06	0.00	—	2.10

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	10/1/2024	10/7/2024	5.00	5.00	1
Grading	Grading	10/8/2024	11/11/2024	5.00	25.0	2
Building Construction	Building Construction	12/27/2024	7/1/2025	5.00	133	5
Paving	Paving	11/26/2024	12/26/2024	5.00	23.0	4
Trenching	Trenching	11/12/2024	11/25/2024	5.00	10.0	3

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT

Grading	—	—	—	—
Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	17.8	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	2.52	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.75	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	0.00	18.5	LDA,LDT1,LDT2
Trenching	Vendor	—	10.2	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	7.50	0.00	—
Grading	1,901	3,558	25.0	0.00	—
Paving	0.00	0.00	0.00	0.00	2.59

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.08	0%
Parking Lot	2.51	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	532	0.03	< 0.005
2025	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	66.1	66.8	59.9	23,831	585	591	530	210,853

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	2
Gas Fireplaces	4
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	1
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
27641.25	9,214	0.00	0.00	6,560

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	53,267	532	0.0330	0.0040	219,028
Parking Lot	95,778	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	291,768	2,218,503
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	6.72	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	33.8	annual days of extreme heat
Extreme Precipitation	3.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	10.8	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	91.1
AQ-PM	27.8
AQ-DPM	19.7
Drinking Water	11.7
Lead Risk Housing	33.6
Pesticides	0.00
Toxic Releases	26.2
Traffic	91.7
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	76.3
Cardio-vascular	99.4
Low Birth Weights	67.6

Socioeconomic Factor Indicators	—
Education	70.6
Housing	45.0
Linguistic	45.4
Poverty	84.5
Unemployment	56.2

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	19.55601181
Employed	6.480174516
Median HI	35.69870397
Education	—
Bachelor's or higher	19.41485949
High school enrollment	7.583728988
Preschool enrollment	14.51302451
Transportation	—
Auto Access	82.44578468
Active commuting	28.85923264
Social	—
2-parent households	48.71038111
Voting	27.15257282
Neighborhood	—
Alcohol availability	80.27717182
Park access	18.82458617
Retail density	28.32028744

Supermarket access	30.11677146
Tree canopy	18.24714487
Housing	—
Homeownership	39.31733607
Housing habitability	40.38239446
Low-inc homeowner severe housing cost burden	53.59938406
Low-inc renter severe housing cost burden	28.7950725
Uncrowded housing	42.73065572
Health Outcomes	—
Insured adults	18.96573848
Arthritis	36.0
Asthma ER Admissions	22.0
High Blood Pressure	53.6
Cancer (excluding skin)	63.4
Asthma	13.4
Coronary Heart Disease	43.7
Chronic Obstructive Pulmonary Disease	15.6
Diagnosed Diabetes	35.6
Life Expectancy at Birth	10.4
Cognitively Disabled	39.7
Physically Disabled	47.8
Heart Attack ER Admissions	8.4
Mental Health Not Good	15.9
Chronic Kidney Disease	45.1
Obesity	19.9
Pedestrian Injuries	19.6
Physical Health Not Good	21.1
Stroke	34.3

Health Risk Behaviors	—
Binge Drinking	41.7
Current Smoker	13.8
No Leisure Time for Physical Activity	29.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	4.5
Elderly	77.9
English Speaking	78.7
Foreign-born	30.2
Outdoor Workers	36.9
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.4
Traffic Density	54.1
Traffic Access	23.0
Other Indices	—
Hardship	79.1
Other Decision Support	—
2016 Voting	35.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	43.0
Healthy Places Index Score for Project Location (b)	14.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	2.51-acre site.
Construction: Construction Phases	No demolition or coating phases.

APPENDIX B

Biological Resources Technical Memorandum for the Hesperia-Topaz Land Development Project

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TECHNICAL MEMORANDUM

To: Yaret Salas
San Luis Concrete
2130 West Highland Avenue
San Bernardino, California 92407

From: Italia Avila, Lead Natural Resources Project Manager

Date: September 6, 2024

Re: **Biological Resources Technical Memorandum for the Hesperia-Topaz Land Development Project, Hesperia, California / SWCA Project No. 86436**

INTRODUCTION

This memorandum describes the general field survey and western Joshua tree (*Yucca brevifolia*) field census conducted by SWCA Environmental Consultants (SWCA) for the Hesperia-Topaz Land Development Project (project). The project site is located northwest of the intersection of Topaz Avenue and Courtney Street in Hesperia, San Bernardino County, California (Figure 1, Figure 2, and Figure 3). San Luis Concrete retained SWCA to determine the potential for the project to have a significant effect on biological and potentially jurisdictional aquatic resources.

The proposed project includes construction of seven single family residences, a retention basin, a paved site access driveway and cul-de-sac, and other associated on-site improvements on a 2.51-acre (ac) property and off-site improvements along the property frontage.

The project site consists of eight total lots ranging from 7,210 square feet to 13,924 square feet in size. The lot located in the northeastern corner of the project site would be developed with a stormwater retention basin, while the remaining seven lots would be developed with residential single-family uses.

Based on an initial review of existing aerial imagery the proposed 2.3-ac residential development project appeared to support several western Joshua trees on-site and potentially other sensitive natural resource features. Therefore, a site visit was determined necessary to confirm the locations of western Joshua trees in and on adjacent parcels, and to determine the presence—or indicators of presence—of other special-status species.

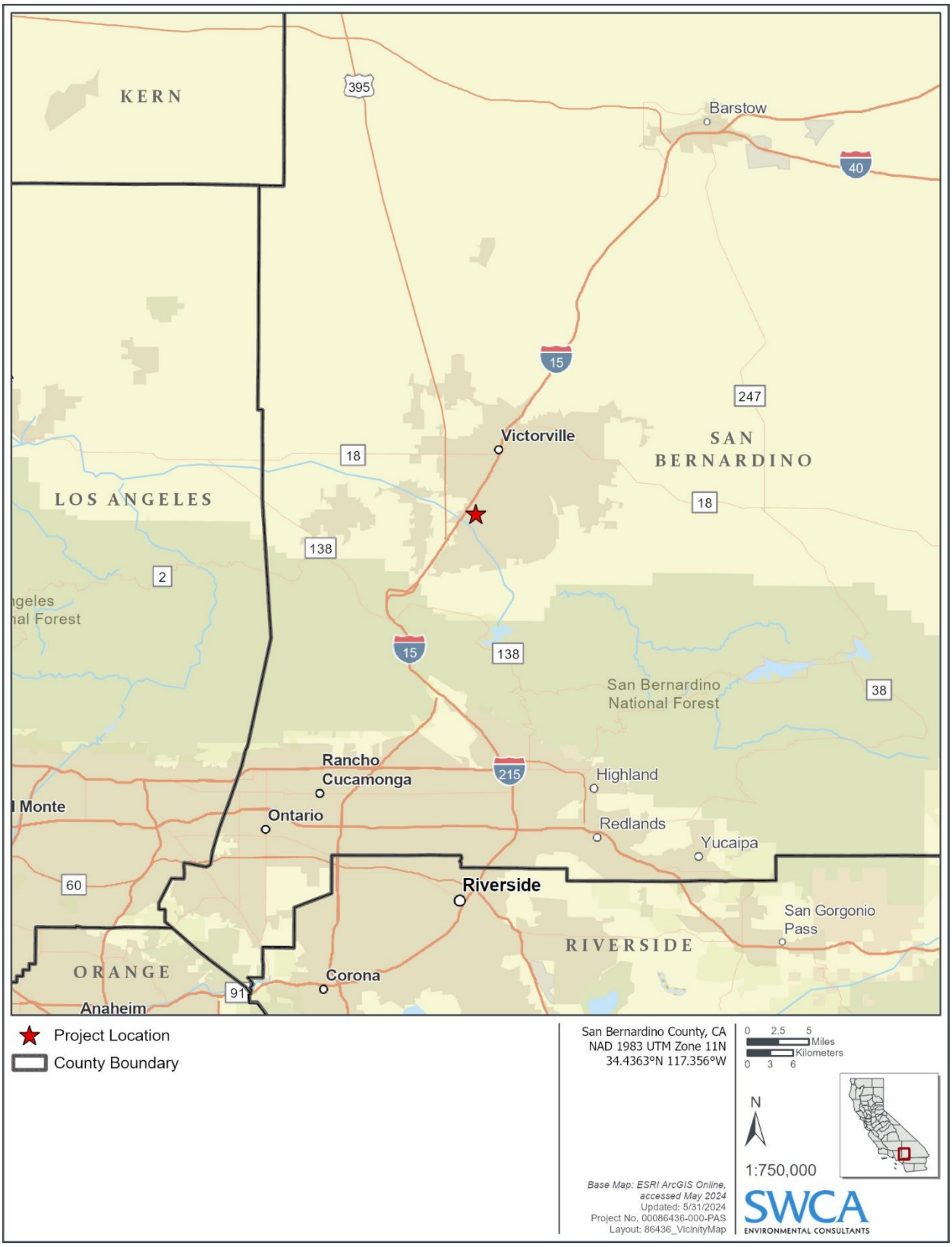

Figure 1. Vicinity Map

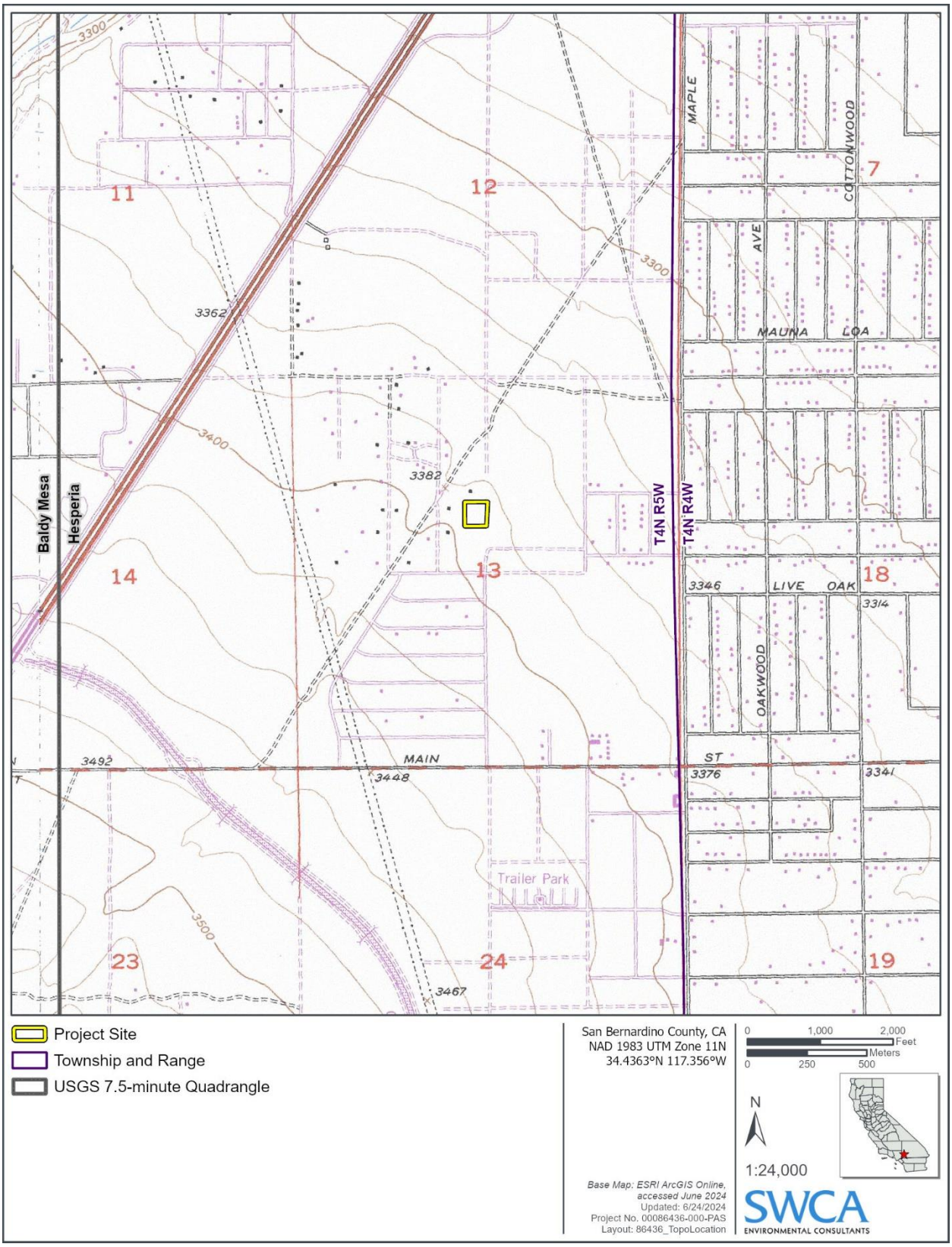

Figure 2. Project Site on a Topographic Map Background.

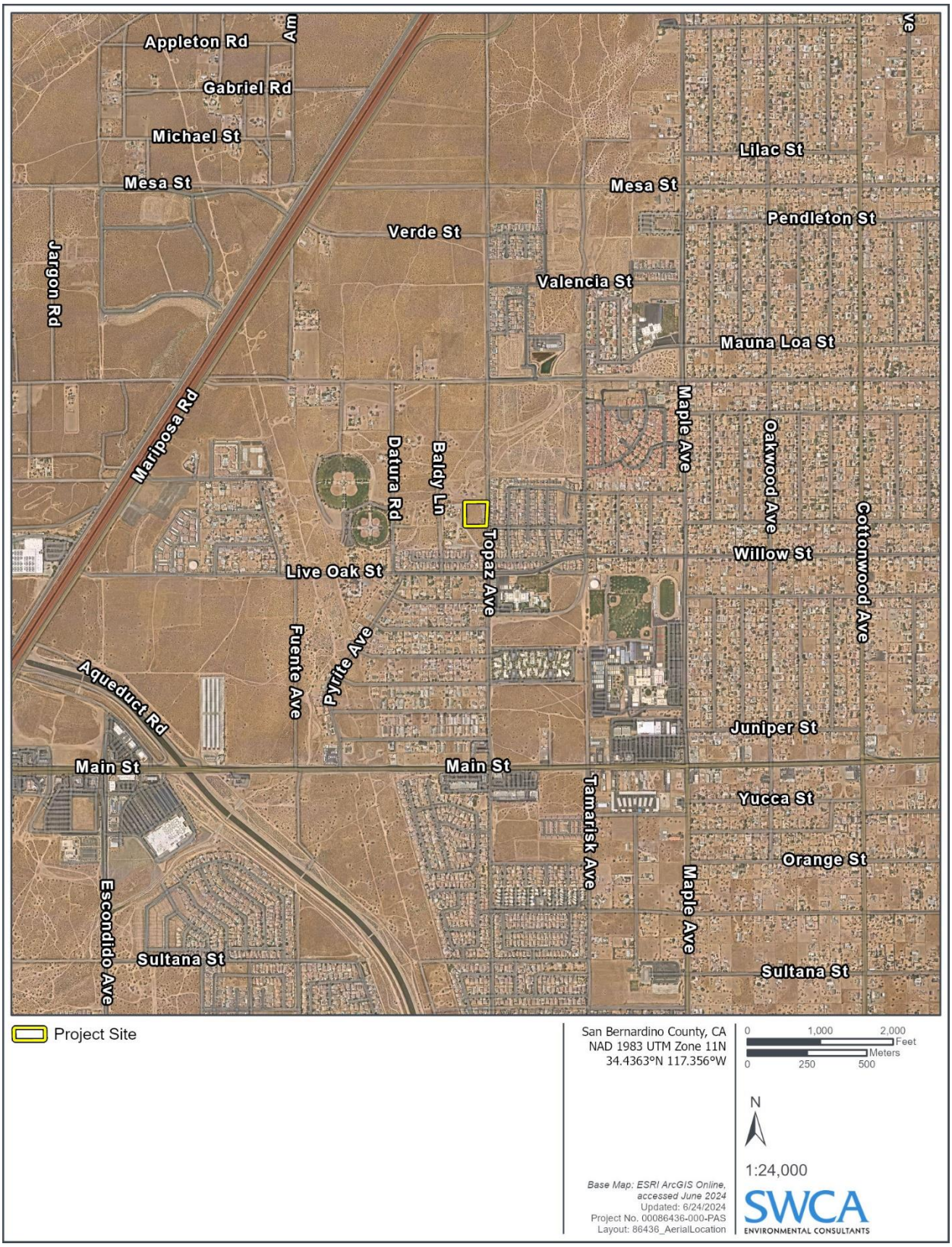

Figure 3. Project Site on an Aerial Map Background.

METHODS

A combination of a literature review and a biological field survey were used to document biological resources within the project site. The biological survey focused on vegetation community boundaries and landcover types, special-status species and habitat, and potentially jurisdictional aquatic resources. For the purposes of this report, the literature review and field survey considered the project site and areas within 50 feet (15 meters [m]), collectively referred to as the study area.

Literature and Data Review

Prior to the field survey, SWCA reviewed relevant information from federal, state, and local resource agencies. The following documents and data sources were reviewed while preparing this report:

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) RareFind 5 (CDFW 2024a)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory) (CNPS 2024a)
- Calflora online database of California plants (Calflora 2024)
- Consortium of California Herbaria (2024)
- eBird online database of bird distribution and abundance (eBird 2024)
- iNaturalist (2024)
- U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS 2024a)
- USFWS National Wetlands Inventory (USFWS 2024b)
- U.S. Geological Survey (USGS) National Hydrography Dataset (USGS 2024).
- Google Earth aerial imagery of the proposed project (Google Earth 2024).

An initial list of species to be considered for their occurrence likelihood was compiled based on a search of the CNDDB and CNPS Inventory that focused on USGS 7.5 quadrangles centered on Hesperia (project site location) and the surrounding eight quadrangles: Apple Valley South, Apple Valley North, Victorville, Adelanto, Baldy Mesa, Cajon, Silverwood Lake, and Lake Arrowhead. Other sources listed above were reviewed for information and records about particular species and biological resources.

Biological resources geospatial datasets from a variety of sources were reviewed to develop a project-specific geospatial database. This was the first level of analysis, which provided reviewers with essential sensitive species location data, preliminary habitat information, potential drainages, and other jurisdictional waters and designated critical habitat for federally listed species. For the purposes of this study, sensitive plants and animals were defined to include species, subspecies, varieties, and populations recognized by CDFW or the USFWS and that have been classified into one or more of the following categories:

- Species, subspecies, and populations listed or proposed for listing at the federal and state level as threatened or endangered pursuant to the federal Endangered Species Act and the California Endangered Species Act, and species that are candidates for such listings (CDFW 2024b, 2024c)
- Plants designated as California Rare Plant Rank (CRPR) 1, or 2 by CNPS (CNPS 2024b)

- Plants covered by the California Desert Native Plant Act (CDNPA).
- Animals listed on the California Special Animals List as Species of Special Concern, Fully Protected, and all invertebrates on the CDFW Special Animals list (CDFW 2024b).

Potential for occurrence of special-status species within the study area and the immediate vicinity was assessed following the database searches. During the pre-field desktop assessment, each species was assigned to one of the categories listed below:

- **High Potential**: The species has been documented in the vicinity (within 5 miles of the project site based on recent [within 20 years] CNDDB or other records or based on professional expertise specific to the area or species), and there is suitable habitat within the project site that makes the probability of the species occurring there high. Alternatively, there is high-quality suitable habitat within the project site and the project site is within the known range of the species. Bird species in this category were differentiated based on their occurrence within the project site as breeding, foraging only, and/or transients.
- **Moderate Potential**: Species is known to occur within the project site (based on non-historic [within 40 years] CNDDB or other records or based on professional expertise specific to the area or species), and there is moderate quality habitat at the project site that makes the probability of the species occurring there moderate. Alternatively, there is moderate-quality habitat in the part of the project site that falls within the known range of the species.
- **Low Potential**: The project site is within the species' currently known range, but vegetation communities, soils, etc., do not resemble those known to be used by the species; or conditions appear suitable, but the project site is beyond the species' currently known range; or the species was recorded more than 40 years ago within the project site.
- **Absent**: There is no suitable habitat for the species within the project site, or the area is located well outside the known range of the species.

Field Survey

SWCA biologist, Ryan Myers conducted a general field survey on April 4-5, 2024. The purpose of the survey was to document existing plants, wildlife, vegetation communities, and potentially regulated aquatic resources. The survey included plant and wildlife inventories, vegetation mapping, and mapping the maximum extent of potentially regulated aquatic resources. The surveyor noted and recorded wildlife species encountered through direct observation and sign (scat, remains, or tracks). Birds were identified through direct observations, signs, and their species-specific vocalizations. Binoculars were used to facilitate wildlife identification. Plant species or subspecies were identified to the highest taxonomic level possible when encountered. Plant taxonomic naming conventions follow Jepson eFlora (Jepson Flora Project 2024). Location data for biological and aquatic resources were mapped using a Geode® GPS unit with sub-meter accuracy. Vegetation alliances were mapped using *A Manual of California Vegetation Online* (MCV) (CNPS 2024b)

Western Joshua Tree Census

On April 4-5, 2024, in conjunction with the general field survey, biologist Ryan Myers conducted a western Joshua tree census per the WJTCA guidelines (CDFW 2024d). The biologist walked parallel transects spaced approximately 10 m (approximately 33 feet) apart to achieve 100% visual coverage of the entire study area. The biologist recorded each tree on a GPS unit with submeter accuracy using the California Department of Fish and Wildlife (CDFW) Survey123 Western Joshua Tree Census Form. Each tree was measured and photographed in accordance with the WJTCA guidelines. Trees that had evidence

of flowers and/or fruit were considered mature and were noted in the Survey123 form. Measurements and locations of trees located in the inaccessible portions of the study area were estimated from the project site. Tree locations located in the inaccessible portions were later refined via desktop.

RESULTS

Conditions during the April 4-5, 2024, surveys were cool and windy. Conditions were ideal for performing visual surveys of the project site; however, wildlife detection may have been hindered due to the windy conditions. Table 1 summarizes the weather conditions during the surveys.

Table 1. Survey Dates and Weather Conditions

Survey Date	Survey Time	Weather Conditions
4/5/2024	1200-1500	Mostly sunny skies, 53–68 degrees Fahrenheit, wind speeds of 25–32 miles per hour
4/6/2024	0800-1300	Partly cloudy, 37–41 degrees Fahrenheit, wind speeds of 14–16 miles per hour. Light precipitation in afternoon

Existing Conditions

The project site is located on undeveloped land consisting of scattered Joshua trees with an herbaceous understory dominated by non-native forbs and grasses. Based on a review of aerial imagery, a homogeneous shrub layer was formerly present on-site. This layer was subsequently grubbed sometime between 2020 and 2022. The project site is bounded by residential development to the east and undeveloped lands to the north. Private property, owned by the Cal-Earth Institute, is located immediately west and south of the project site. Disturbances observed include vegetation removal, trash piles, and unmaintained roads associated with off-road vehicle usage. Representative site photos of the project site can be found in Appendix A.

Vegetation Communities and Landcover Types

The study area consists of two defined MCV vegetation communities: Joshua tree Woodland Alliance and Red Brome or Mediterranean Grass Grasslands (*Bromus rubens -Schismus arabicus*, *barbatus*) Herbaceous Semi-Natural Alliance (CNPS 2024b). Land Cover types mapped in the study area include Developed and Disturbed (Figure 4, Table 2).

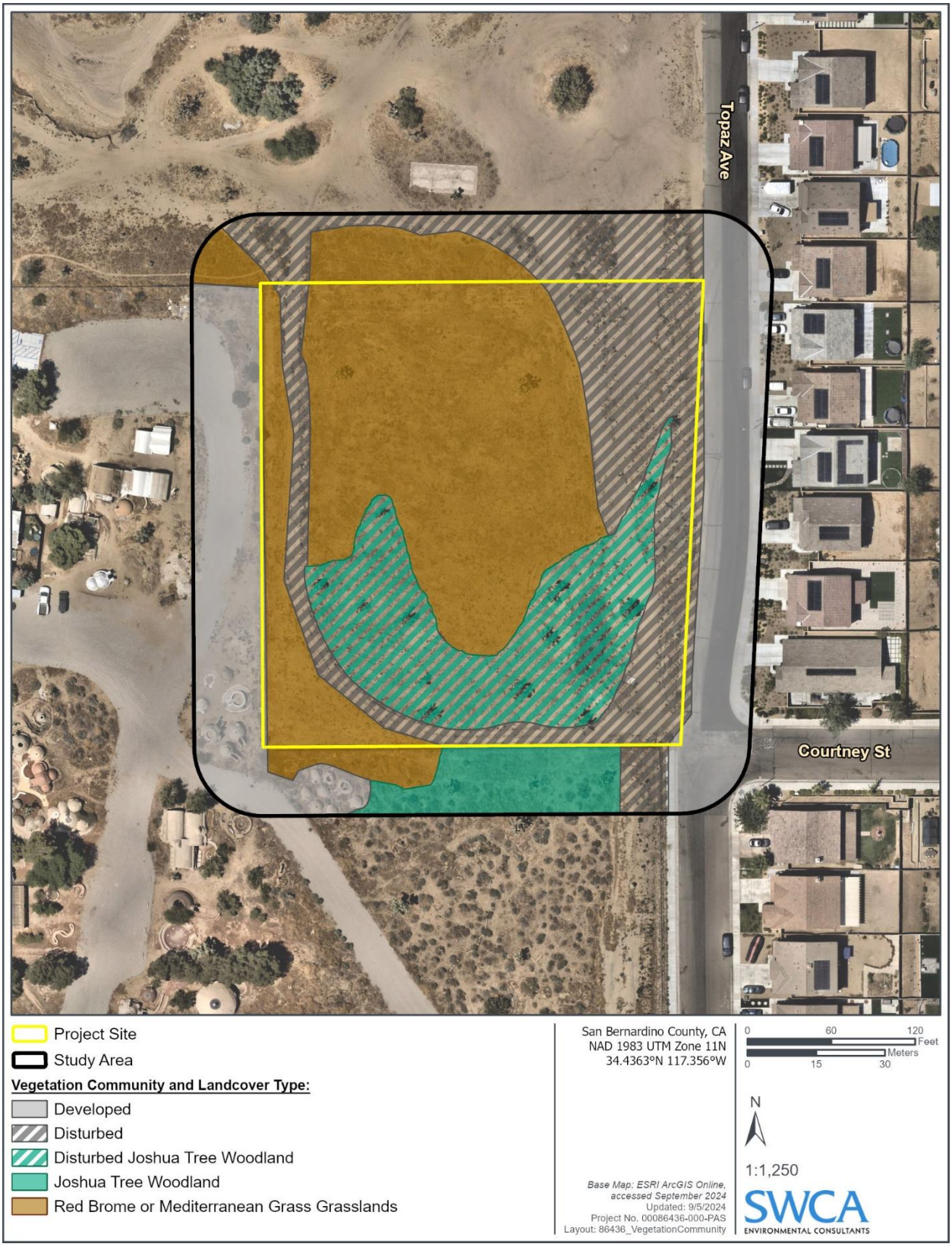

Figure 4. Vegetation Communities and Landcover Types.

Table 2. Land Cover and Vegetation Communities within the Study Area

Vegetation Communities/Cover Types	Acres	Global/State Sensitivity
Joshua tree Woodland/Disturbed Joshua Tree Woodland	0.71	S3.2/G4
Red Brome or Mediterranean Grass Grasslands	1.39	SNA/GNA
Developed	0.92	N/A
Disturbed	0.93	N/A
Total	**3.95**	N/A

Natural communities with ranks of 1–3 are considered sensitive by CDFW (CDFW 2023). Global (G) and State (S) ranks are based on range/extent, occurrences/abundance, ecological integrity, threats, and trends, as defined below. All ranks are for the association level unless otherwise noted.

Global (G) and State (S) Conservation Status Ranks (NatureServe 2024):

G3/S3 = Vulnerable — At moderate risk of extinction or elimination due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

G4/S4 = Apparently Secure — At fairly low risk of extinction or elimination due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors.

GNA/SNA = Not Applicable — A conservation status rank is not applicable because the species or ecosystem is not a suitable target for conservation activities. A global conservation status rank may not be applicable for several reasons related to its relevance as a conservation target. For species, typically the species is a hybrid without conservation value, or of domestic origin. For ecosystems, the type is typically non-native (e.g., many ruderal vegetation types), agricultural (e.g., pasture, orchard), or developed (e.g., lawn, garden, golf course).

Additional State Threat Rank:
0.2 = Threatened

Joshua Tree Woodland

Joshua Tree Woodland is concentrated in the southern portion of the project site and study area. Within the project site, Joshua trees are dominant in an evenly distributed tree layer consisting of a sparse herbaceous understory comprising of Mediterranean grass, red brome and red-stem filaree (*Erodium cicutarium*). Isolated Joshua trees located in the northern portion of the project site were not included in the vegetation community. Joshua Tree Woodland located in the southern study area consists of Joshua trees with a subdominant shrub layer consisting of Nevada joint-fir (*Epehdra ephedra*) and rubber rabbitbrush (*Ericameria nauseosa*). Because of the disturbance caused by vegetation grubbing, Joshua Tree Woodland that intersects within the project site was classified as Disturbed Joshua Tree Woodland. Approximately 0.71 ac of the study area is classified as Joshua Tree Woodland and Disturbed Joshua Tree Woodland.

Red Brome or Mediterranean Grass Grasslands

Red Brome or Mediterranean Grass Grasslands is the predominant community generally occupying the central and northern portion of the study area. Mediterranean grass, red brome and red-stem filaree were dominant in the herbaceous layer intermixed with a variety of forbs including native species such as devil's lettuce (*Amsinckia tessellata* var. *tessellata*). Approximately 1.39 ac of the study area is classified as Red Brome or Mediterranean Grass Grasslands.

Developed

Areas classified as Developed include paved roads, maintained unpaved roads, road shoulders, and structures and buildings. In the study area, this includes paved Topaz Avenue and portions of the adjacent private property that intersect with the study area. Approximately 0.92 ac of the study area is classified as Developed.

Disturbed

Areas classified as Disturbed are subject to heavy and include recently graded areas. These areas generally have little or no vegetation. Some areas classified as Disturbed consists of a composition of species that do not form a defined MCV alliance. In the study area, barren areas and unmaintained dirt roads were classified as Disturbed. Approximately 0.93 ac of the study area is classified as Disturbed.

Sensitive Vegetation Communities

Sensitive vegetation communities are defined by CDFW as those "... communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects" (CDFW 2018). Vegetation communities with a State Rank of 1, 2, or 3 are considered sensitive by CDFW. One sensitive vegetation community with a State Rank of 3 was identified in the study area: Joshua Tree Woodland.

Critical Habitat

There is no designated critical habitat for federally listed species within or immediately adjacent to the project. The nearest critical habitat, which is designated for Southwestern Willow Flycatcher (*Empidonax traillii extimus*), is located approximately 6.2 miles northeast of the study area.

Special-Status Species

Plants

The CNDDB and CNPS query yielded 27 special-status plants species records located within the nine-quadrangle vicinity of the project site. There are no overlapping CNDDB occurrences or CNPS observations within the project site. Due to the anthropogenic disturbances and surrounding development on-site, there is minimal suitable habitat for special-status plant species. Joshua tree (Candidate State Threatened [SCT]) is present on-site; however, this species will be discussed separately as part of the census results. One species, Beaver Dam breadroot (*Pediomelum castoreum* [CRPR 1B.2; moderately threatened in California]), was determined to have low potential to occur. Beaver dam breadroot is known to occur in disturbed sites and there are some CNDDB records located in the vicinity of the project site. Since surveys occurred during the appropriate blooming period and the nearest CNDDB records are approximately six miles away from the project site it was determined that this species has a low potential to occur within the study area. No additional special-status plant species were determined to have any potential to occur within the study area, apart from the western Joshua tree.

One species covered by CDNPA was found during the survey. Seven silver chollas (*Cylindropuntia echinocarpa*; Figure 5) were found within the study area. None were found within the project site.

See Table B-1 in Appendix B for the potential for occurrence of all special-status plant species identified during the desktop review and informed by the field surveys. A full plant compendium can be found in Table C-1 in Appendix C.

Western Joshua Tree Census

In total, 34 live western Joshua trees were present within the study and surrounding areas (Figure 6). No trees were considered dead. Of the trees present within the study area, 6 were Class A (less than 1 m in height), 17 trees were Class B (between 1 and 5 m in height), and 8 trees were Class C (greater than 5 m in height), resulting in a total of 31 direct impact trees (Table 3). Anticipated impacts to these western Joshua trees are discussed below in the Impact Analysis section. Three trees were incidentally surveyed

during the census and are not anticipated to be directly or indirectly impacted by project activities. See Table D-1 in Appendix D for the western Joshua tree data collected during the April 2024 census.

Table 3. Western Joshua Trees within the Study Area and Incidentally by Size Class

Size Class	Number of Trees*
Class A (less than 1 m)	6
Class B (greater than 1 m, less than 5 m)	17 (2)
Class C (greater than 5 m)	8 (1)
Dead trees	0
Total	31 (3)

* Values in parentheses represent trees surveyed during the census but were later determined to be outside the study area.

Wildlife

The CNDDB query resulted in 41 special-status wildlife records within the surrounding nine-quadrangle search area. No special-status wildlife species or sign were detected during the field survey. No special-status wildlife were determined to have a high potential to occur on-site.

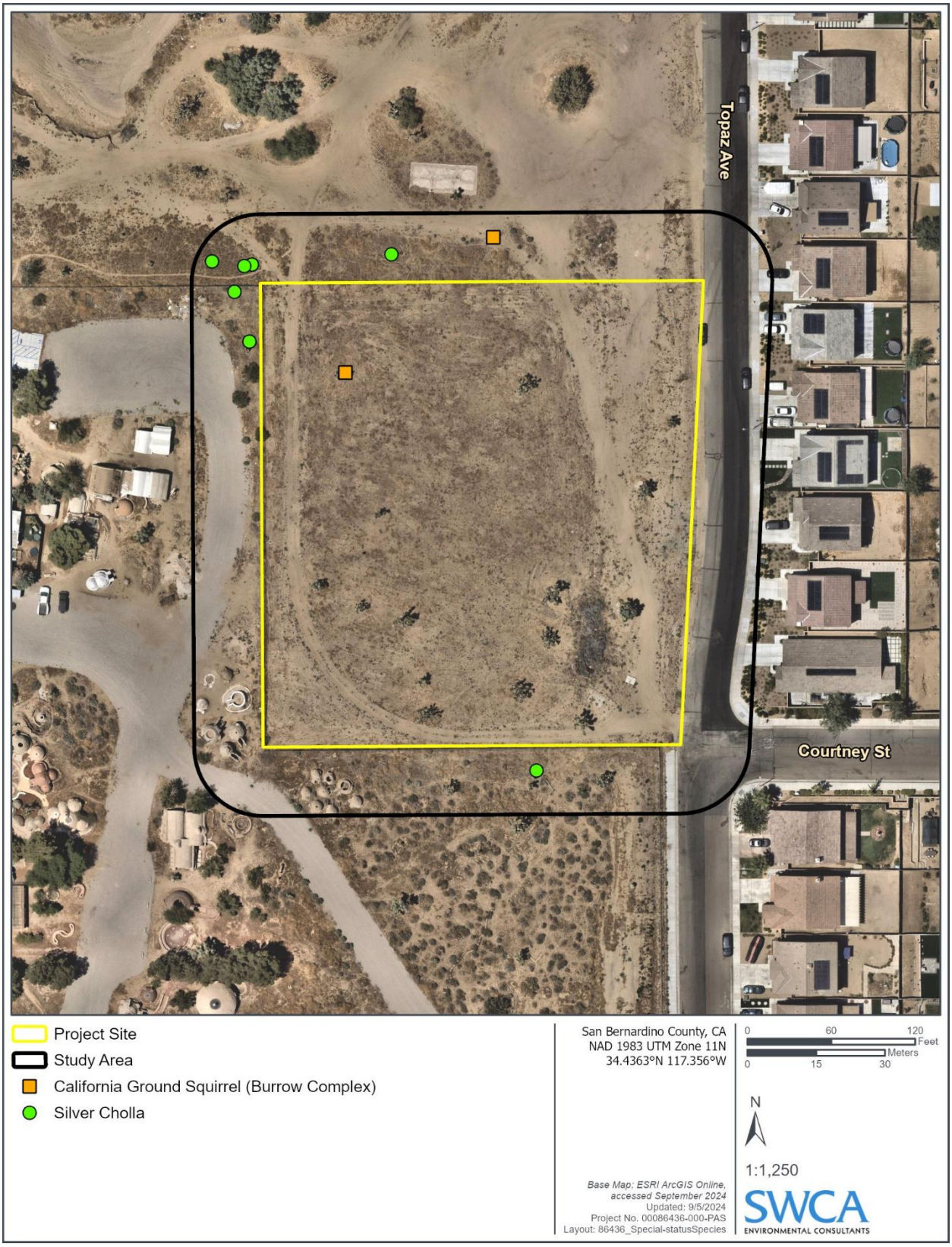

Figure 5. Plant and Wildlife Observations within the Study Area.

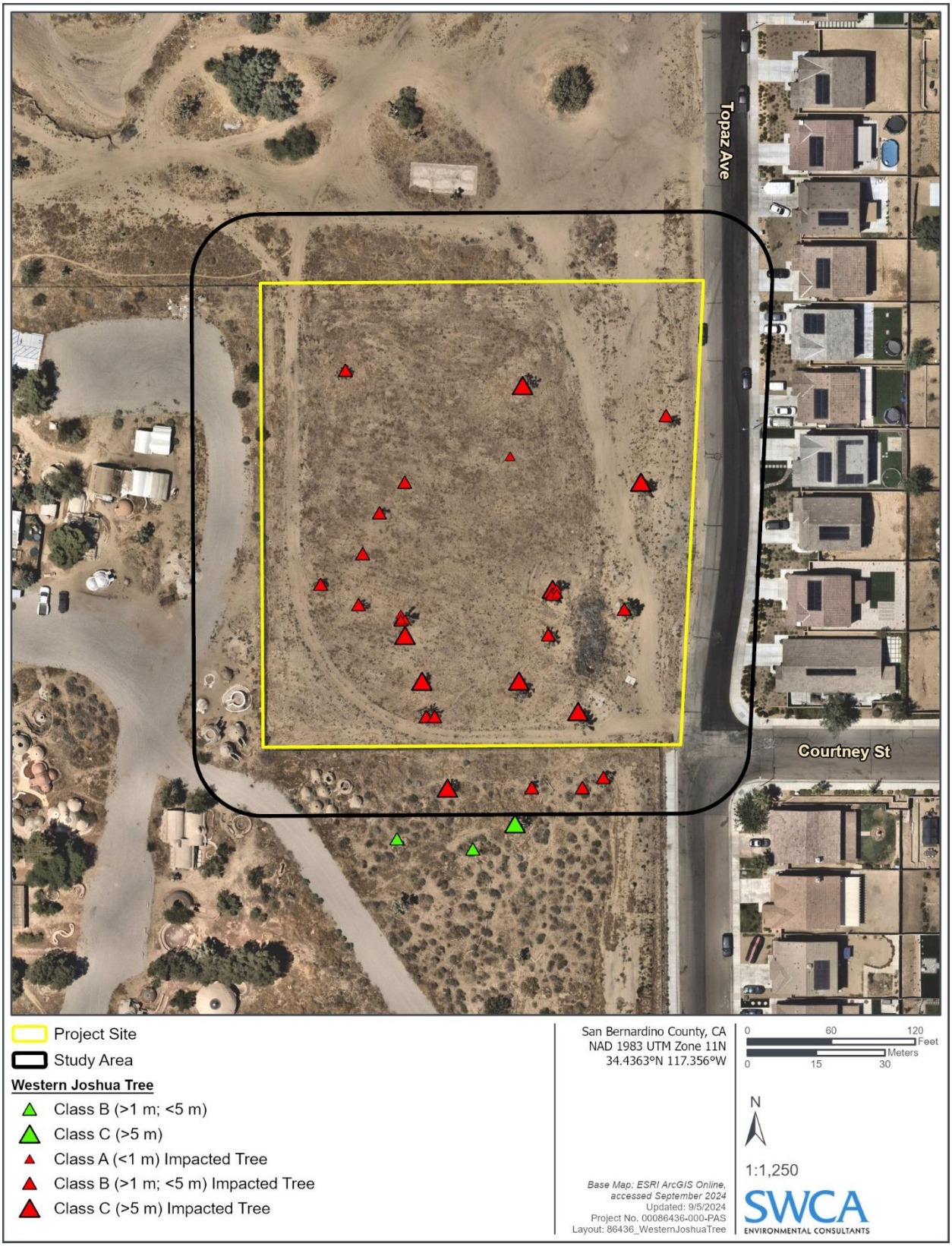

Figure 6. Western Joshua Tree Census Results.

Based on the existing habitat conditions and CNDDB records, one species was determined to have moderate potential to occur on-site: burrowing owl (*Athene cunicularia* [Species of Special Concern; SSC]). Several California ground squirrel (*Otospermophilus beecheyi*) burrow complexes found on-site were determined to be suitable for burrowing owls based on the size of the openings (Figure 5). However, no burrowing owl sign was observed on-site. There are also several occurrences of burrowing owls in CNDDB within the project vicinity.

The following species were determined to have low potential to occur based on the habitat conditions found on-site:

- Crotch bumble bee (*Bombus crotchii*; State Candidate Endangered; SCT),
- coast horned lizard (*Phrynosoma blainvillii* [SSC])
- Desert tortoise (*Gopherus agassizii* [Federally threatened; FT, State Endangered; SE])
- Golden eagle (*Aquila chrysaetos* [California Fully protected; FP])
- American badger (*Taxidea taxus* [SSC])
- loggerhead shrike (*Lanius ludovicianus* [SSC]).

Potentially suitable food plants for Crotch bumble bee were observed within the project site. Additionally, a Crotch bumble bee observation, from 2023, in iNaturalist is within 3.2 miles of the project site. Coast horned lizards require harvester ants which were not observed during the survey, but marginally suitable habitat is present. There is poor quality habitat available for desert tortoise. Given the surrounding development, and on-site disturbances desert tortoise is not expected to be on-site and no suitable desert tortoise burrows were observed on-site. However, there are some records within the vicinity of the project site including an observation made in 2000 approximately four miles southeast of the project. No suitable nesting habitat for golden eagle is present on-site or in the immediate vicinity, however the species may potentially utilize the project stie for foraging. Several recent eBird observations are located within the vicinity of the project site. American badgers are generalist occupying a wide range of habitats and could potentially utilize the site for denning. No suitable American badger dens were observed during the survey, however. Loggerhead shrikes generally maintain territories within open shrublands with abundant perches to forage for prey. While there were some appropriate habitat characteristics, the surrounding urbanized landscape and lack of recent proximate observation records indicate a low potential for loggerhead shrikes within the study area. See Table B-2 in Appendix B for the potential to occur for all special-status wildlife species in the vicinity of the project site. A full wildlife compendium can be found in Table C-2 in Appendix C.

Nesting Birds

The Joshua trees located on-site would provide suitable nesting habitat for a variety of birds protected by the federal Migratory Bird Treaty Act (MBTA) and the State equivalent, California Fish and Game Codes (CFGC) 3503 and 3513. Commonly encountered bird species likely to nest on-site include common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), and mourning dove (*Zenaida macroura*). Ground nesting species such horned lark (*Eremophila alpestris*) could also utilize the project site. A full wildlife compendium can be found in Table C-2 in Appendix C.

Aquatic Resources

The project site was surveyed for potentially regulated aquatic resources; however, a formal jurisdictional delineation was not conducted. There are no potentially regulated features within the project site. A

potentially regulated riverine feature, a tributary to the Mojave River, was observed approximately 320 feet northwest of the project site.

IMPACT ANALYIS

This section describes the anticipated direct and indirect impacts to biological resources at the proposed project site that may result from implementation of the proposed project. This analysis was based on the results of the biological survey conducted at the site, information from literature and database resources, and the proposed project design and layout. Because the project design has not been finalized at this time, it is assumed for the purposes of this analysis that the entirety of the project site may be subject to temporary or permanent impacts.

Project implementation would result in the direct removal of on-site plant communities, and wildlife that depend on them for habitat. Many indirect impacts to off-site biotic resources are possible during construction (e.g., noise, dust) and after project completion (e.g., noise, night lighting, restriction of movement). Deposition of dust on off-site vegetation communities during construction could adversely affect quality of the habitat. Additionally, artificial night lighting could adversely affect the behavior of nocturnal wildlife, and increased trash produced by project activities could result in an increase of opportunistic predators to the area.

Potential Impacts to Vegetation Communities

It is assumed that all impacts to vegetation and land cover types within the project site will be permanent. The permanent impacts within the project site are expected to be 2.34 acres. Permanent direct impacts are those that would result from the clearing and grading of vegetated areas to accommodate the project. Table 5 summarizes the acres of potential impacts to vegetation communities and land cover types.

Table 5. Potential Impacts to Vegetation Communities and Land Cover Types

Vegetation Community	Approximate Acres within the Project Site	Approximate Acres within the Study Area
Joshua Tree Woodland/Disturbed Joshua tree Woodland	0.54	0.71
Red Brome or Mediterranean Grass Grasslands	1.18	1.39
Developed	0.01	0.92
Disturbed	0.60	0.93
Total	**2.34**	**3.95**

Joshua Tree Woodland is designated as a sensitive natural community by CDFW, and permanent impacts to this community type may require mitigation. Compensatory mitigation addressing impacts to Joshua Tree Woodland may be incorporated into the mitigation measures implemented in support of the Joshua tree ITP. Impacts to the remaining vegetation and land cover types are not anticipated to require mitigation.

Potential Impacts to Special-status Plants

Apart from the western Joshua tree, there is minimal suitable habitat on-site for special status plant species. One special-status plant was determined to have a low potential to occur on-site: Beaver Dam breadroot. A preconstruction survey is recommended prior to the ground disturbing activities to identify and flag any occurrences of Beaver Dam breadroot for avoidance. As per CDNPA regulations, silver

chollas and western Joshua trees in the study area but outside the project site would be identified and flagged for avoidance. Removal of the western Joshua trees within the project site would require a permit granted by the county commissioner to remain in compliance with the CDNPA.

Anticipated Western Joshua Tree Take

Construction of the seven single family homes are anticipated to directly impact western Joshua trees on site. A total of 31 trees are anticipated to be subject to direct impacts, 8 size Class C,17 size Class B, and 6 size Class A. Twenty-seven trees including 18 mature trees, overlap with the project components and would be removed prior to construction. Four trees are within the study area outside of the boundary of the project site. Construction activities could potentially impact the roots of these four additional trees. These trees will be avoided to the greatest extent possible and will not be removed unless necessary. Three additional trees are located outside of the study area and no impacts are anticipated. Table 6 includes a summary of western Joshua trees that would be directly impacted by the proposed project.

Table 6. Summary of Western Joshua Trees Subject to Direct Impacts

Tree ID	Size Class	Mature	Distance and Project Component	Type of Impact
086439 - 1	B	Yes	Overlaps project site	Remove
086439 - 2	C	Yes	Overlaps project site	Remove
086439 - 3	B	Yes	Overlaps project site	Remove
086439 - 4	C	Yes	Overlaps project site	Remove
086439 - 5	C	Yes	Overlaps project site	Remove
086439 - 6	B	Yes	Overlaps project site	Remove
086439 - 7	C	Yes	Overlaps project site	Remove
086439 - 8	B	No	Overlaps project site	Remove
086439 - 9	B	Yes	Overlaps project site	Remove
086439 - 10	A	No	Overlaps project site	Remove
086439 - 11	A	No	Overlaps project site	Remove
086439 - 12	A	No	Overlaps project site	Remove
086439 - 13	C	Yes	Overlaps project site	Remove
086439 - 14	B	Yes	Overlaps project site	Remove
086439 - 15	B	Yes	Overlaps project site	Remove
086439 - 16	B	Yes	Overlaps project site	Remove
086439 - 17	B	No	Overlaps project site	Remove
086439 - 18	B	Yes	Overlaps project site	Remove
086439 - 19	B	Yes	Overlaps project site	Remove
086439 - 20	C	Yes	Overlaps project site	Remove
086439 - 21	B	No	Overlaps project site	Remove
086439 - 22	A	No	Overlaps project site	Remove
086439 - 23	A	No	Overlaps project site	Remove
086439 - 24	A	No	Overlaps project site	Remove
086439 - 25	C	Yes	Overlaps project site	Remove

Tree ID	Size Class	Mature	Distance and Project Component	Type of Impact
086439 - 26	B	Yes	Overlaps project site	Remove
086439 - 27	B	Yes	Overlaps project site	Remove
086439 - 28	B	Yes	Approximately 22 feet south of project site	Other – roots may be impacted; tree will be avoided to the greatest extent possible.
086439 - 29	B	No	Approximately 28 feet south of project site	Other – roots may be impacted; tree will be avoided to the greatest extent possible.
086439 - 30	B	Yes	Approximately 28 feet south of project site	Other – roots may be impacted; tree will be avoided to the greatest extent possible.
086439 - 33	B	Yes	Approximately 28 feet south of project site	Other – roots may be impacted; tree will be avoided to the greatest extent possible.

Removal of western Joshua trees would be completed using equipment such as a front-end loader (for large trees), tree spade (for small trees), or hand-clearing equipment such as chainsaws and tree-trimming tools. The removed vegetation would be collected and taken off-site for salvage preparation or disposal. A biological monitor would be on-site during removal operations to ensure equipment and crews stay within the proposed work area.

Western Joshua trees located outside the study area are not anticipated to be directly impacted by the proposed project (Figure 6). Construction activities would occur beyond a 50-ft buffer around these trees and would be avoided to the greatest extent possible. If necessary, these trees would be marked for avoidance using flagging or signage designating environmentally sensitive areas. Indirect impacts may include impacts from fugitive dust from construction activities. However, the dust control minimization measure would minimize impacts to these trees. Indirect impacts to the seed bank of trees located outside the study area are not anticipated due to the distance to the project components. The entire project parcel would be fully fenced, which would protect the remaining western Joshua trees from outside disturbances.

Potential Impacts to Special-status Wildlife

Due to the on-site habitat degradation and fragmentation, there is minimal suitable habitat for special-status species on-site. Burrowing owls were determined to have a moderate potential to occur while several other species, including desert tortoise were determined to have a low potential to occur on-site.

Several California ground squirrel burrows were found in the project site that could be suitable for burrowing owls were found on-site. A preconstruction survey conducted no more than 30 days prior to any ground-disturbing activities is recommended. The survey should follow the methods outlined in the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). If burrowing owls are detected on-site prior to construction, appropriate buffers should be implemented to avoid direct impacts. Maximum buffer distances would be 500 m from the active nest but could likely be minimized based on the professional judgement of the biological monitor present on site. If avoidance is not feasible, passive relocation of burrowing owls during the non-nesting period may be possible following the development of a Burrowing Owl Relocation Plan approved by City of Hesperia and CDFW. A general preconstruction survey is recommended to determine absence or presence for the remaining special status species that may occur.

Nesting Birds

Implementation of the project has the potential to directly impact birds that are nesting at the project site by causing active nests to fail. The project has suitable nesting habitat for burrowing owls and several common bird species. The western Joshua trees on site may support raptors and common raven nests. If

construction or vegetation removal activities must occur during the bird breeding season (February 1–August 31), surveys for active nests should be conducted by a qualified biologist no more than 14 days prior to the start of construction. Appropriate buffer sizes should be implemented depending on the species and tolerance levels to construction activities.

AVOIDANCE AND MINIMIZATION MEASURES

The CESA stipulates the measures or alternatives required for an ITP should be proportional in extent to impacts on the species that result from a project. Implementation of the applicant-proposed avoidance and minimization measures are included below and will ensure take of western Joshua tree is minimized to the greatest practical extent and mitigated wherever feasible.

1. **Biological Monitor.** A biological monitor(s) will be present for the western Joshua tree removal and installation of the fence where western Joshua trees are present. In addition, the biological monitor will be present when work is within 50 feet of a live western Joshua tree. To enforce compliance with the ITP, biological monitor(s) will have authority to immediately stop any activity that does not comply with this ITP, and/or to order any reasonable measure to avoid unauthorized take of an individual western Joshua tree. In addition, the biological monitor will attend tailboard prior to work each morning and discuss the avoidance areas and ITP requirements for the duration of all activities impacting western Joshua trees. After removal, the biological monitor(s) will remain on call in the event of a special-status species encounter.
2. **Western Joshua Tree Avoidance.** Western Joshua trees shall be avoided to the greatest extent possible. The biological monitor will monitor on-site project activities and prevent unlawful take. The permittee will contact CDFW for consultation if additional potential impacts to western Joshua trees not covered by the ITP area could occur.
3. **Designated Work Areas.** Activities will be confined within designated work areas to minimize the disturbance footprint where practicable. To the greatest extent possible, crews will confine work areas to previously disturbed areas. The permittee will clearly delineate the boundaries of the project site with fencing, stakes, or flagging, as necessary.
4. **Dust Control.** Control of dust will be implemented during construction activities. The primary mechanism for dust control will be the use of water trucks with a spray bar and hose(s). Proactive controls will be instituted to reduce the amount of dust generated during site activities, including enforcement of low-speed limits (below 15 mph) for vehicular traffic, decontamination of trucks leaving the remediation work areas, and a 5-foot height limit for temporarily stockpiled material.
5. **Vehicles and Staging.** All vehicle staging will occur outside vegetated areas and outside aquatic resource drainages. Vehicles will be staged or stored at least 100 feet from all western Joshua trees for which take is not authorized.
6. **Hazardous Waste.** The permittee will immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. The permittee will exclude the storage and handling of hazardous materials from the project site and will properly contain and dispose of any unused or leftover hazardous products off-site.
7. **Refuse Removal.** Upon completion of each project component, all remaining materials and equipment will be removed from the site.
8. **Invasive Plants.** To prevent the spread of invasive plants that have the potential to outcompete native plant species, all vehicles and any ground- or vegetation-disturbing equipment and tools will be cleaned free of mud, soil, and plant material before entering the project site for the first

time, and any time after driving off pavement outside the project site. Cleaning can be through car washes, compressed air, pressure washes, brushes, or similar equipment.

9. **Worker Environmental Awareness Program.** Prior to the onset of construction activities, a workers' environmental awareness program (WEAP) training shall be provided. The WEAP will be developed by a qualified biologist. Any employee responsible for the operation and maintenance of the completed facilities will also attend the WEAP.
    a. The program will include information on the life history of sensitive biological resources that may occur within the project site, including western Joshua tree and other listed or special-status species that could be present on-site.
    b. The program will discuss each species' legal protection status, the definitions of take under CESA and the federal Endangered Species Act, measures the project operator is implementing to protect the species, reporting requirements, specific measures that each worker will employ to avoid take of wildlife species, and penalties for violation of the CESA and the federal Endangered Species Act.
    c. An acknowledgement form signed by each worker indicating that environmental training has been completed will be kept on record.
    d. A sticker will be placed on worker hard hats upon the worker's successful environmental training completion. Construction workers will not be permitted to operate vehicles or equipment within the construction areas unless they have attended the training and are wearing hard hats with the required sticker.
    e. The WEAP will identify a point of contact if a listed or special-status species is observed on the project site.
10. **Pre-construction Survey for Biological Resources.** Fourteen days prior to initial ground-disturbing activities, a qualified biologist will conduct pre-construction surveys of the project site for special-status wildlife, including burrowing owl and plants. In the event of an unanticipated discovery of a special-status ground-dwelling animal, a biologist holding the appropriate state and/or federal permits will recover and relocate the animal to adjacent suitable habitat adjacent to the project site. In the event of the discovery of a previously unknown special-status plant, the area will be marked as an environmentally sensitive area and avoided to the maximum extent practicable. If avoidance is not possible, the project proponent will consult with USFWS and/or CDFW as appropriate given the species' status.
11. **Nesting Bird Surveys.** If construction is scheduled to commence during the non-nesting season (September 1 to January 31), no pre-construction surveys or additional measures with regard to nesting birds and other raptors are required. To avoid impacts to nesting birds in the project site, a qualified biologist shall conduct pre-construction surveys of all suitable nesting habitat within the project site, and within a 150-foot buffer if access allows, for project activities that are initiated during the breeding season (February through August). The survey for special-status raptors shall focus on potential nest sites on-site and within a 500-foot buffer around the site. Surveys shall be conducted no more than 14 days prior to construction activities. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance. Active nests will be avoided and monitored, and the qualified biologists will have authority to stop work, should it be determined that a nest is being impacted by the project activity.
12. **Nesting Bird Buffers.** If active nests of non-special status species or common raptors are found, a suitable buffer shall be established around active nests and no construction within the buffer allowed until a qualified biologist has determined that the nest is no longer active (e.g., the

nestlings have fledged and are no longer reliant on the nest). Encroachment into the buffer may occur at the discretion of the qualified biologist.

13. **Dead or Injured Special-status Wildlife.** If any dead or injured special-status wildlife and birds protected by the MBTA are discovered at the proposed project during construction, the Applicant will stop work in the immediate vicinity. The Applicant will notify the City, the on-call biologist, and the appropriate resource agency (USFWS and/or CDFW) before construction is allowed to resume.
14. **Harming or Feeding Wildlife.** No wildlife, including rattlesnakes, will be harmed except to protect life and limb. Firearms and pets will be prohibited in all project sites. In addition, feeding of wildlife will not be allowed. This includes keeping trash bins covered and secured at all times until the trash bins are removed from the project site.

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APPENDIX A

Photographs

Photograph A-1. View of project site, facing southwest.

Photograph A-2 Disturbed Joshua Tree Woodland in the project site, facing southeast.

Photograph A-3 View of trash pile of grubbed vegetation located in the southeastern portion the project site, facing southwest.

Photograph A-4. View of project site, facing north.

Photograph A-5. View of California ground squirrel burrows. Several burrows were determined to be suitable for burrowing owls. facing northeast.

Photograph A-6. Example of silver cholla, a CDNPA covered plant located the Study Area.

APPENDIX B

Potential for Occurrence and Habitat Requirements for Special Status Species in the Project Site

Table B-1. Potential for Occurrence and Habitat Requirements for Special Status Species in the Project site

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
Plants			
Beaver Dam breadroot *(Pediomelum castoreum)*	CRPR 1B.2	Joshua tree woodland, Mojavean desert scrub. Sandy soils; washes and roadcuts. 605–1,485 meters amsl. Blooming period: April–May.	**Low Potential.** The project is within the known range of the species. Marginally, suitable habitat present as the species is known to occur in disturbed areas. The nearest occurrence is undated, approximately 6.7 miles northeast of the project site.
black bog-rush *Schoenus nigricans*	CRPR 2B.2	Marshes and swamps. Often in alkaline marshes. 120–1,525 m. Blooming period: August–September.	**Absent.** The project is within the known range of the species, however no suitable habitat is present. The nearest occurrence is from 1923, approximately 7.7 miles southwest of the project site.
Booth's evening-primrose *(Eremothera boothii* ssp. *boothii)*	CRPR 2B.3	Joshua tree woodland, pinyon and juniper woodland. 285–2,290 m. Blooming period: May–August.	**Absent.** Based on Jepson's geographic floristics ranges, the project is outside the accepted range of the species. The nearest occurrences may be misidentifications. The nearest occurrence is from 1992, approximately 7.6 miles northeast of the project site.
Desert cymopterus *(Cymopterus deserticola)*	CRPR 1B.2	Joshua tree woodland, Mojavean desert scrub. On fine to coarse, loose, sandy soil of flats in old dune areas with well-drained sand. 625–1,220 m. Blooming period: March–May.	**Absent.** The project is within the known range of the species, however no suitable habitat is present. The nearest occurrence is from 1941, approximately 9.7 miles northeast of the project site. This occurrence is considered possibly extirpated due to development
Greata's aster (*Symphyotrichum greatae*)	CRPR 1B.3	Chaparral, cismontane woodland, broadleafed upland forest, lower montane coniferous forest, riparian woodland. Mesic canyons. 335–2015 m amsl. Blooming periods: June–October.	**Absent.** The Project site is outside the known range of the species. Habitat for this species is not present. The nearest occurrence is from 1994, approximately 14.4 miles southwest of the project site.
hot springs fimbristylis (*Fimbristylis thermalis*)	CRPR 2B.2	Meadow & seeps; wetlands. Near hot springs. 115–1,585 m amsl. Blooming periods: July–September.	**Absent.** The project is within the known range of the species, however no suitable habitat is present. The nearest CNDDB occurrence is from 2005, located 18 miles southeast of the project site.
Latimer's woodland-gilia (*Saltugilia latimeri*)	CRPR 1B.2	Chaparral, Mojavean desert scrub, pinyon and juniper woodland. Rocky or sandy substrate; sometimes in washes, sometimes limestone. 120–2,200 m. Blooming periods: March–June.	**Absent.** The project is within the known range of the species, however no suitable habitat is present. The nearest CNDDB occurrence is from 1996, located 20.3 miles southeast of the project site
lemon lily (*Lilium parryi*)	CRPR 1B.2	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest. Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows and seeps. 625-2,930 m. Blooming periods: July–August.	**Absent.** The Project site is outside the known range of the species. Habitat for this species is not present. The nearest occurrence is undated, approximately 16.7 miles southeast of the project site.
Mojave milkweed (*Asclepias nyctaginifolia*)	CRPR 2B.1	Mojavean desert scrub, pinyon and juniper woodland. 775–1,605 m. Blooming periods: May–June.	**Absent.** The Project is within the known range for this species. The nearest occurrence is from 1916, approximately 7.7 miles southwest

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
			of the project site. The occurrence notes indicate this may be a misidentification.
Mojave monkeyflower (*Diplacus mohavensis*)	CRPR 1B.2	Joshua tree woodland, Mojavean desert scrub. Dry sandy or rocky washes along the Mojave River. 660–1,270 m. Blooming periods: April–June.	**Absent.** The Project is within the known range for this species, however no suitable habitat is present. The nearest occurrence is from 1998, approximately 11.6 miles north of the project site.
Mojave tarplant *(Deinandra mohavensis*)	SE, CRPR 1B.3	Riparian scrub, coastal scrub, chaparral. Low sand bars in river bed; mostly in riparian areas or in ephemeral grassy areas. 640–1,645 m. Blooming periods: June–October, occasionally beginning as early as January	**Absent.** The Project is within the known range for this species, however no suitable habitat is present. The nearest occurrence is from 2019, approximately 9 miles southeast of the project site.
Mt. Pinos onion (Allium howellii var. clokeyi)	CRPR 1B.3	Great Basin scrub, pinyon and juniper woodland, meadows and seeps (edges). 1,385–1,800 m. Blooming periods: April–June.	**Absent.** The Project site is outside the known range of the species. Habitat for this species is not present. The nearest occurrence is from 1938, approximately 14.7 miles southeast of the project site.
Palmer's mariposa-lily	CRPR 1B.2	Meadows and seeps, chaparral, lower montane coniferous forest. Vernally moist places in yellow-pine forest, chaparral. 195–2,530 m. Blooming Period: April–July.	**Absent.** The Project site is outside the known range of the species. Habitat for this species is not present. The nearest occurrence is from 12017, approximately 9.1 miles southwest of the project site.
Parish's alumroot (*Heuchera parishii*)	CRPR 1B.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest, alpine boulder and rock field. Rocky places. Sometimes on carbonate. 1,340–3,505 m. Blooming period: June–August.	**Absent.** The Project is outside the known range for this species. No suitable habitat is present for the species. The nearest occurrence is from 2007, approximately 12.1 miles south of the project site.
Parish's daisy (*Erigeron parishii*)	FT, CRPR 1B.1	Mojavean desert scrub, pinyon and juniper woodland. Often on carbonate; limestone mountain slopes; often associated with drainages. Sometimes on granite. 1,050–2,245 m. Blooming period: May–August.	**Absent.** The Project is outside the known range for this species. No suitable habitat is present for the species. The nearest occurrence is from 2017, approximately 13.3 miles southeast of the project site.
Parish's desert-thorn (*Lycium parishii*)	CRPR 2B.3	Coastal scrub, Sonoran desert scrub. Sandy, rocky slopes, canyons. 3 m below mean sea level–570 m amsl. Blooming period: March–April.	**Absent.** The Project is outside the known range for this species. No suitable habitat is present for the species. The nearest occurrence, which is considered extirpated, is from 1885, approximately 12.7 miles south of the project site.
Parish's yampah (*Perideridia parishii* ssp. p*arishi*i)	CRPR 2B.2	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest. Damp meadows or along streambeds-prefers an open pine canopy. 1,470 1–2,530 m. Blooming Period: June–August	**Absent.** The Project is outside the known range for this species. No suitable habitat is present for the species. The nearest occurrence is from 2007, approximately 13.1 miles southeast of the project site.
pinyon rockcress *Boechera dispar*	CRPR 2B.3	Joshua tree woodland, pinyon and juniper woodland, Mojavean desert scrub. Granitic, gravelly slopes and mesas. Often under desert shrubs which support it as it grows. 1,005–2,805 m. Blooming Period: March–June	**Absent.** The Project is within the known range for this species, however no suitable granitic or limestone substrates are present for the species. The nearest occurrence is from 2011, approximately 10.2 miles southeast of the project site.

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
sagebrush loeflingia *(Loeflingia squarrosa* var. *artemisiarum)*	CRPR 2B.2	Great Basin scrub, Sonoran desert scrub, desert dunes. Sandy flats and dunes. Sandy areas around clay slicks with greasewood (*Sarcobatus*), saltbush (*Atriplex*), horsebush (*Tetradymia)*, etc. 700–1,615 m. Blooming period: April–May.	**Absent.** The project is within the known range of the species, however no suitable sandy flats or dune habitat is present. The nearest occurrence is from 2005, approximately 3.9 miles northeast of the project site.
San Bernardino aster (Symphyotrichum defoliatum)	CRPR 1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Vernally mesic grassland or near ditches, streams and springs; disturbed areas. 3–2,045 m. Blooming period: July–November.	**Absent.** The project is within the known range of the species, however no suitable habitat is present. The nearest occurrence is from 1991, approximately 7.1 miles northwest of the project site.
San Bernardino Mountains dudleya *(Dudleya abramsii* ssp. *affinis)*	CRPR 1B.2	Pebble (pavement) plain, upper montane coniferous forest, pinyon and juniper woodland. Outcrops, granite or quartzite, rarely limestone. 1,200–2,425 m. Blooming period: April–July.	**Absent.** The Project is outside the known range for this species. No suitable habitat is present for the species. The nearest occurrence is from 2011, approximately 9.8 miles southeast of the project site.
San Bernardino Mountains owl's-clover (*Castilleja lasiorhyncha*)	CRPR 1B.2	Meadows and seeps, pebble plain, upper montane coniferous forest, chaparral, riparian woodland. Mesic to drying soils in open areas of stream and meadow margins or in vernally wet areas. 1,140–2,320 m. Blooming period: May–August.	**Absent.** The Project is outside the known range for this species. No suitable habitat is present for the species. The nearest occurrence is from 1967, approximately 11.8 miles southeast of the project site.
short-joint beavertail (*Opuntia basilaris* var. *brachyclada*)	CRPR 1B.2	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Sandy soil or coarse, granitic loam. 425–2015 m. Blooming period: April–June, occasionally August.	**Absent.** The project is outside the known range for the species. Additionally, no beavertail (*Opuntia* spp.) was observed in the project site. The nearest occurrence is from 1989 approximately 3.2 miles southwest of the project site.
silver-haired ivesia (Ivesia *argyrocoma* var. *argyrocoma*)	CRPR 1B.2	Meadows and seeps, pebble plains, upper montane coniferous forest. In pebble plains and meadows with other rare plants. 1,490–2,960 m. Blooming period: June–August.	**Absent.** The Project is outside the known range for this species. No suitable habitat is present for the species. The nearest occurrence is from 2008, approximately 16.4 miles southeast of the project site.
southern mountains skullcap (Scutellaria bolanderi ssp. austromontana)	CRPR 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. In gravelly soils on streambanks or in mesic sites in oak or pine woodland. 425–2,000 m. Blooming period: June–August.	**Absent.** The project is within the known range of the species, however no suitable habitat is present. The nearest occurrence is from 1915, approximately 6.7 miles northwest of the project site.
western Joshua tree *(Yucca brevifolia)*	SCT	Joshua Tree Woodland, montane chaparral, pinyon and juniper woodland, Sonoran and Mojavean desert scrub. 750–2,200 m.	**Present.** western Joshua trees are visible from aerial imagery. Approximately 34 individual trees were mapped in the Project site.
white-bracted spineflower *Chorizanthe xanti* var. *leucotheca*	CRPR 1B.2	Mojavean desert scrub, pinyon and juniper woodland, coastal scrub (alluvial fans). Sandy or gravelly places. 365–1830 m. Blooming period: April–June.	**Absent.** The project is outside of known range of the species. No suitable habitat is present for the species. The nearest occurrence is from 2011, approximately 11.5 miles southwest of the project site.

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
Invertebrates			
Andrew's marble butterfly (Euchloe hyantis andrewsi)	SA	Inhabits yellow pine forest near Lake Arrowhead and Big Bear Lake, San Bernardino Mtns, San Bernardino Co, 1,524–1,828 (5000–6000 ft.) amsl. Hostplants are Laguna Mountains jewelflower (*Streptanthus bernardinus*)and woodland rockcress (*Arabis holboellii* var *pinetorum*); larval foodplant is mountain tansymustard (*Descurainia richardsonii*).	**Absent.** The Project is outside of the known range for the species. There is no suitable habitat; host plants and larval food plants would not be expected to occur**.** The nearest occurrence is from 1928, approximately 12.3 miles south of the project site.
Crotch's bumble bee *(Bombus crotchii)*	SCE	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include snapdragons (*Antirrhinum),* phacelias (*Phacelia),* clarkias (*Clarkia),* bush poppies (*Dendromecon),* poppies *(Eschscholzia)*, and buckwheats *(Eriogonum).*	**Low Potential.** The project is within the known range of the species. Due to the on-site disturbance and grubbing, few host plants are anticipated to be present. The nearest occurrence is from 1939, approximately 8.3 miles southeast of the project site. A 2023 inaturalist occurrence is located 3.2 miles south southeast of the project.
Dohrn's elegant eucnemid beetle *Palaeoxenus dohrni*	SA	No information available for this species in CNDDB.	**Absent.** The only record for this species in CNDDB is located approximately 12.3 miles south of the project site. Habitat in occurrence details described as forest dominated by ponderosa pine (*Pinus ponderosa*) and incense cedar (*Calocedrus decurrens*).
Morrison bumble bee *Bombus morrisoni*	SA	From the Sierra-Cascade ranges eastward across the intermountain west. Food plant genera include thistles (*Cirsium* spp.), bladderpods (*Cleome* spp.), sunflowers (*Helianthus* spp.), lupines (*Lupinus* spp.), goldenbushes (*Chrysothamnus [=Ericamera]* spp.) and sweetclovers (*Melilotus* spp.).	**Absent** The project is within the known range of the species. Due to the on-site disturbance and grubbing, few host plants are anticipated to be present, however rubber rabbitbrush (*Ericameria nauseosa*) was observed. The nearest occurrence is from 1937, approximately 12.3 miles southeast of the project site. Most non-historic occurrences in in CA are located east of the Sierra Nevada.
quino checkerspot butterfly (*Euphydryas editha quino*)	FE	Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Hills and mesas near the coast. Need high densities of food plants California plantain (*Plantago erecta*), desert plantain (*P. insularis*), and purple owl's -clover (*Orthocarpus purpurescens*).	**Absent.** The Project is outside of the known range for the species. There is no suitable habitat; food plants would not be expected to occur**.** The nearest occurrence from 1958, is considered extirpated. The occurrence is located approximately 12. miles south of the project site.
San Emigdio blue butterfly *(Plebulina emigdionis)*	SA	Found in desert canyons and along riverbeds in Inyo, Kern, Los Angeles, and San Bernardino counties. Host plant is four-wing saltbush (*Atriplex canescens*); maybe Spanish lotus (*Lotus purshianus*) also.	**Absent.** The Project is within the known range of the species. However, no suitable habitat is present; host plants not observed on-site. The nearest occurrence is from 1987, approximately 8.3 miles northeast of the project site.
Victorville shoulderband (*Helminthoglypta mohaveana*)	SA	Known only from along the Mojave River in San Bernardino County. Found among granite boulders and at the base of rocky cliffs.	**Absent.** The Project is outside of the known range for the species. There is no suitable habitat. The nearest occurrence, from 1939 is located 8.3 miles northeast along the Mojave River.

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
westfork shoulderband (*Helminthoglypta taylori*)	SA	Vicinity of the Mojave River. Under logs and leaves.	**Absent.** The Project is outside of the known range for the species. There is no suitable habitat. The nearest occurrence, from 2012 is located 8.7 miles south at Horsethief Creek.
Fish			
Mohave tui chub *Siphateles bicolor mohavensis*	FE, SE, FP	Endemic to the Mojave River basin, adapted to alkaline, mineralized waters. Needs deep pools, ponds, or slough-like areas. Needs vegetation for spawning.	**Absent.** No suitable aquatic habitat is present in the project site.
Santa Ana speckled dace *Rhinichthys osculus* ssp. 8	SSC	Headwaters of the Santa Ana and San Gabriel rivers. May be extirpated from the Los Angeles River system. Requires permanent flowing streams with summer water temps of 17-20 degrees Celsius. Usually inhabits shallow cobble and gravel riffles.	**Absent.** No suitable aquatic habitat is present in the project site.
Amphibians			
arroyo toad *Anaxyrus californicus*	FE, SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	**Absent.** No suitable desert wash or other streambed habitat present in the project site. The ephemeral wash located north of the project would not be anticipated to support the species due to lack of suitable required habitat elements. The nearest occurrence from 2006 is located approximately 8 miles southeast near Horsechief Canyon and West Fork Mojave River.
California red-legged frog *Rana draytonii*	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**Absent**. No suitable aquatic habitat is present. The nearest occurrence is a historical undated record located approximately 6.7 miles northeast of the project site along the Mojave River.
southern mountain yellow-legged frog *Rana muscosa*	FE, SE	Disjunct populations known from southern Sierras (northern DPS) and San Gabriel, San Bernardino, and San Jacinto Mtns (southern DPS). Found at 1,000 to 12,000 ft in lakes and creeks that stem from springs and snowmelt. May overwinter under frozen lakes. Often encountered within a few feet of water. Tadpoles may require 2 - 4 yrs to complete their aquatic development.	**Absent**. The Project is outside of the known range for the species No suitable aquatic habitat is present. The nearest occurrence, from 1941, is located 7.8 miles south, the record is considered extirpated.
Reptiles			
coast horned lizard (*Phrynosoma blainvillii*)	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**Low Potential.** The project is within the known range of the species. Marginally suitable habitat is present, however on-site disturbances and surrounding development limits the likelihood of occurrence. The nearest occurrence, from 1919 is located 2.7 miles southeast of the project site. A non-historical occurrence, from 2008 is located 4.7 miles south closer to the foothills of the San Bernardino Mountains.

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
coastal whiptail (*Aspidoscelis tigris stejnegeri*)	SSC	Found in deserts and semi-arid areas with sparse vegetation and open areas. Also found in woodland and riparian areas. Ground may be firm soil, sandy, or rocky.	**Absent.** The Project is outside of the known range for the species. The nearest occurrence, from 2015, is located 12. 8 mile southeast.
desert tortoise *(Gopherus agassizii)*	FT, SE	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	**Low Potential.** The project is within the historic range for the species. The project site supports minimal habitat for the species due to the high level of on-site disturbance. Surrounding development including buildings and highways would limit migration of the species into the project site. The nearest occurrence is from 2000 is located approximately 4.3 miles southeast of the project site. An additional occurrence from 2007 is located 6.4 miles north of the project site.
Southern California legless lizard *(Anniella stebbinsi)*	SSC	Generally south of the Transverse Range, extending to northwestern Baja California. Occurs in sandy or loose loamy soils under sparse vegetation. Disjunct populations in the Tehachapi and Piute Mountains in Kern County. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.	**Absent.** The Project is outside of the known range for the species. No suitable habitat is present on-stie. The nearest occurrence, from a vague date in the1950s is located 15.3 miles southeast in the San Bernardino Mountains.
southern rubber boa (*Charina umbratical*)	ST	Found in a variety of montane forest habitats. Previously considered morphologically intermediate, recent (2022) genomic analysis clarifies individuals from Mt Pinos, Tehachapi Mts, and southern Sierra Nevada are southern rubber boa. Found in vicinity of streams or wet meadows; requires loose, moist soil for burrowing; seeks cover in rotting logs, rock outcrops, and under surface litter.	**Absent.** The Project is outside of the known range for the species. Species is restricted to montane forested habitat.
two-striped gartersnake (*Thamnophis hammondii*)	SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	**Absent.** The Project is outside of the known range for the species. No suitable habitat is present on-site. The nearest occurrences are located in the northern foothills of the San Bernardino Mountains.
western pond turtle (*Emys marmorata*)	FC, SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Absent.** The project is within the known range for the species, however no suitable habitat is present on-site. The nearest occurrence is from 1989, located approximately 7 miles northeast of the project site in the Mojave River.
Birds			
bald eagle (*Haliaeetus leucocephalus*)	SE, FP, BGEPA	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with	**Absent.** No suitable nesting or wintering habitat present. The nearest known occurrences are over 8.2 miles southeast of the project site.

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
		open branches, especially ponderosa pine. Roosts communally in winter.	
burrowing owl *(Athene cunicularia)*	SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Moderate Potential.** The project is within the known range of the species and suitable habitat is present. However, the project site is relatively small, subject to disturbances and partially surrounded by development which limits the likelihood of occurrence. Suitable California ground squirrel burrows are present. The nearest known CNDDB record is from 2006, approximately 0.5 miles northeast of the project site.
Golden eagle *(Aquila chrysaetos)*	FP, BGEPA	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Low (foraging only).** No suitable nesting habitat is present within the project site, but the species may forage on-site. A historic nest site was documented in 1927, approximately 6.6 miles northeast of the project site. More recent nest sites, from 2011 are documented approximately 14 miles northeast of the project site. There are some recent incidental records of the species in the general vicinity of the project site recorded in iNaturalist and eBird.
gray vireo *Vireo vicinior*	SSC	Dry chaparral; west of desert, in chamise-dominated habitat; mountains of Mojave Desert, associated with juniper and Artemisia. Forage, nest, and sing in areas formed by a continuous growth of twigs, 1-5 ft above ground.	**Absent.** The project is within the known range of the species, however no suitable habitat is present. The nearest occurrence is historic from 1937 and is located 3.2 miles southeast of the project site.
Loggerhead shrike *(Lanius ludovicianus)*	SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Low Potential.** The project is within the known range for this species. The species is known to nest in Joshua trees which are present, however the project site is disturbed with sparse coverage of native shrubs. The nearest CNDDB record is from 2007, 3 miles northwest of the project site. There are several eBird records in the vicinity of the project site.
Long-eared owl *(Asio otus)*	SSC	Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses. Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	**Absent.** No suitable nesting or foraging habitat present. The nearest CNDDB occurrence is from 1950, located 5.5 miles southwest of the project site.
southwestern willow flycatcher *(Empidonax traillii extimus)*	FE, SE	Riparian woodlands in Southern California.	**Absent.** No suitable nesting habitat is present within the project site. The nearest CNDDB occurrence, from 1990, is located 7.6 miles northeast of the project site near the Mojave River.
summer tanager *(Piranga rubra)*	SSC	Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts.	**Absent.** No suitable nesting habitat is present within the project site. The nearest CNDDB occurrence, from 1990, is located 7 miles northeast of the project site near the Mojave River.

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
Swainson's hawk *(Buteo swainsoni*)	FT,	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	**Absent.** No suitable nesting habitat is present in the project site. The nearest CNDDB occurrence, from 1920 is located 6.7 miles northeast of the project site. All CNDDB records indicate the species is possibly extirpated, however the species may still be seen as a flyover during spring and autumn migration. Ebird indicates several recent records near Mojave River
tricolored blackbird (*Agelaius tricolor*)	ST, SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Absent.** No suitable nesting habitat is present within the project site. The nearest CNDDB occurrence, from 2014, is located 9.4 miles northeast of the project site near the Mojave River.
western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT, SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Absent.** No suitable nesting habitat is present within the project site. The nearest CNDDB occurrence, from 2012, is located 6.4 miles northeast of the project site near the Mojave River. The occurrence is considered possibly extirpated.
yellow warbler (*Setophaga petechia*)	SSC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	**Absent.** No suitable nesting habitat is present within the project site. The nearest CNDDB occurrence, from 1953 is located 3.2 miles south of the project are.
yellow-breasted chat (*Icteria virens*)	SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	**Absent.** No suitable nesting habitat is present within the project site. The nearest CNDDB occurrence, from 1990, is located 7.5 miles northeast of the project site near the Mojave River.
Mammals			
American badger *(Taxidea taxus)*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low Potential.** The project is within the known range of the species and marginally suitable habitat is present. However, the project site is relatively small, subject to disturbances and partially surrounded by development which limits the likelihood of occurrence. The nearest CNDDB occurrence is from 1987, approximately 7.3 miles south of the project site.
hoary bat (*Lasiurus cinereus*)	N/A	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Absent.** No suitable foraging or roosting habitat is present within the project site. The nearest CNDDB occurrence, from 1984 is located 6.7 miles northeast of the project are.
Mohave ground squirrel *(Xerospermophilus mohavensis)*	ST	Open desert scrub, alkali scrub and Joshua Tree Woodland. Also feeds in annual grasslands.	**Absent.** The project is within the known eastern limits of the range. The project site is highly disturbed, and the site is generally

Common Name (Species Name)	Status*	Range or Habitat Requirements†	Potential for Occurrence in Project Site
		Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.	surrounded by development limiting migration into the area. Additionally, soils may not be suitable for the species. The nearest extant occurrence, from 2005 is located 3 miles northwest. Additional occurrence in the project vicinity are considered extirpated.
Mohave river vole *(Microtus californicus mohavensis)*	SSC	Occurs only in weedy herbaceous growth in wet areas along the Mojave River. May be found in some irrigated pastures. Burrows into soft soil. Feeds on leafy parts of grasses, sedges, and herbs. Clips grasses to form runways from burrow.	**Absent.** The project is outside of the known range for this species, and no suitable habitat is present. The nearest CNDDB occurrence, from 1967 is located 6.9 miles northeast of the project site.
pallid bat (*Antrozous pallidus*)	SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Absent.** No suitable foraging or roosting habitat is present within the project site. The nearest CNDDB occurrence, from 2016 is located 6.2 miles northeast of the project are.
pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*)	SSC	Desert border areas of San Diego, Riverside, San Bernardino, and Los Angeles counties in desert wash, desert scrub, desert succulent scrub, pinyon-juniper, etc. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	**Absent.** No suitable habitat is present is present due to the high level of on-site disturbance The nearest CNDDB occurrence, from 1921 is located 6.7 miles northeast of the project site. No recent records recorded in the project vicinity.
San Bernardino flying squirrel *Glaucomys oregonensis californicus*	SSC	Known from black oak or white fir dominated woodlands between 5200 - 8500 ft in the San Bernardino and San Jacinto ranges. May be extirpated from San Jacinto range. Needs cavities in trees/snags for nests and cover. Needs nearby water.	**Absent.** No suitable habitat is present in the project site. Nearest CNDDB records located south in San Bernardino Mountains.
Townsend's big-eared bat (*Corynorhinus townsendii*)	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**Absent.** No suitable foraging or roosting habitat is present within the project site. The nearest CNDDB occurrence, from 1930 is located 10.1 miles north of the project are.

*Status Codes:
Federal Status:
BGEPA = Bald and Golden Eagle Protection Act
FE = Federally Listed Endangered
FT = Federally Listed Threatened
FC = Federal Candidate for Listing

California State Status:
FP = CDFW Fully Protected
SCT = California Candidate Threatened
SSC = CDFW Species of Special Concern
SE = California State Listed Endangered
ST = California State-Listed Threatened

California Rare Plant Ranks (CRPR):
1B = Plants rare, threatened, or endangered in California and elsewhere
2B = Plants rare, threatened, or endangered in California, but more common elsewhere
0.1 = Seriously threatened in California
0.2 = Moderately threatened in California
0.3 = Not very threatened in California

†The habitat descriptions are directly from the CNDDB database (CDFW 2024a). Blooming period for plants is from CNPS (CNPS 2024a).

APPENDIX C

Floral and Faunal Compendia

Table C-1. Floral Compendium

Scientific Name	Common Name	Life Form
	GYMNOSPERMS (DICOTS)	
Ephedraceae (Ephedra Family)		
Ephedra nevadensis+	Nevada ephedra	shrub
	ANGIOSPERMS (DICOTS)	
Asteraceae (Aster Family)		
Ambrosia acanthicarpa	annual bursage	annual herb
Ericameria nauseosa+	rubber rabbitbrush	shrub
Lessingia glandulifera var. *glandulifera*+	valley lessignia	annual herb
Boraginaceae (Borage Family)		
Amsinckia intermedia	common fiddleneck	annual herb
Amsinckia tessellata var. *tessellata*	devil's lettuce	annual herb
Pectocarya penicillata	northern pectocarya	annual herb
Brassicaceae (Mustard Family)		
Descurainia pinnata ssp. *glabra*+	smooth western tansy mustard	annual herb
Descurainia sophia	flix weed, herb sophia	annual herb
*Hirschfeldia incana**	shortpod mustard	perennial herb
*Sisymbrium altissimum**	tumble mustard	annual herb
Tropidocarpum gracile+	dobie pod	annual herb
Cactaceae (Cactus Family)		
Cylindropunita echinocarpa	silver cholla	shrub (stem succulent)
Geraniaceae (Storksbill Family)		
*Erodium cicutarium**	redstem filaree	annual herb
Lamiaceae (Mint Family)		
Scutellaria mexicana	bladder-sage	shrub
Polygonaceae (Buckwheat Family)		
Eriogonum fasciculatum	California buckwheat	shrub
Eriogonum sp.	annual wild buckwheat	annual herb
Solanaceae (Nightshade Family)		
Lycium cooperi	Cooper's box thorn	shrub
Zygophyllaceae (Caltrop Family)		
Larrea tridentata	Creosote bush	shrub
	ANGIOSPERMS (MONOCOTS)	
Agavaceae (Agave Family)		
Yucca brevifolia	western Joshua tree	tree
Poaceae (Grass Family)		
*Bromus rubens**	red brome	annual grass
*Bromus tectorum**	cheat grass	annual grass
*Hordeum murinum**	wall barley	annual grass
*Schismus barbatus**	common Mediterranean grass	annual grass

Note: *non-native species. +Observed in 100-foot buffer only

Table C-2. Faunal Compendium

Scientific Name	Common Name	Additional Observation Notes
CLASS AVES (BIRDS)		
Charadriidae (plovers)		
Charadrius vociferus	killdeer	
Columbidae (pigeons and doves)		
*Columba livia**	rock pigeon	
Zenaida macroura	mourning dove	
Corvidae (jay's and crows)		
Corvus corax	common raven	
Fringillidae (finches)		
Haemorhous mexicanus	house finch	
Hirudinidae (swallows, martins, and saw-wings)		
Hirundo rustica	barn swallow	
Mimidae (mockingbirds and thrashers)		
Mimus polyglottos	northern mockingbird	
Passerellidae (New World sparrows)		
Zonotrichia leucophrys	white-crowned sparrow	
Passeridae (Old World sparrows)		
*Passer domesticus**	house sparrow	
Poliptilidae (gnatcatchers)		
Sturnidae (starlings)		
*Sturnus vulgaris **	European starling	
Remizidae (penduline tits)		
Auriparus flaviceps	verdin	
Tyrannidae (tyrant flycatchers)		
Sayornis nigricans	black phoebe	
CLASS MAMMALIA (MAMMALS)		
Leporidae (rabbits and hares)		
Sylvilagus audubonii	desert cottontail	
Sciuridae (squirrels))		
Otospermophilus beecheyi	California ground squirrel	Active burrow complexes.

*Non-native species

APPENDIX D

Western Joshua Tree Census Survey123 Data

Table D-1. Western Joshua Tree Survey123 Data (April 2024)

Tree ID	Size Class*	Mature† (yes/no)	Approximate Height (meters)	Living (yes/no)	Flowers (yes/no)	Fruits (yes/no)	Impacts (yes/no)	Impact Type
086439 - 1	B	Yes	3.7	Yes	No	No	Yes	Remove
086439 - 2	C	Yes	5.1	Yes	No	No	Yes	Remove
086439 - 3	B	Yes	4.8	Yes	No	No	Yes	Remove
086439 - 4	C	Yes	5.5	Yes	No	No	Yes	Remove
086439 - 5	C	Yes	5.1	Yes	No	No	Yes	Remove
086439 - 6	B	Yes	3.8	Yes	No	No	Yes	Remove
086439 - 7	C	Yes	5.5	Yes	No	No	Yes	Remove
086439 - 8	B	No	1.6	Yes	No	No	Yes	Remove
086439 - 9	B	Yes	2.3	Yes	No	No	Yes	Remove
086439 - 10	A	No	0.4	Yes	No	No	Yes	Remove
086439 - 11	A	No	0.3	Yes	No	No	Yes	Remove
086439 - 12	A	No	0.5	Yes	No	No	Yes	Remove
086439 - 13	C	Yes	5.6	Yes	No	No	Yes	Remove
086439 - 14	B	Yes	3.0	Yes	No	No	Yes	Remove
086439 - 15	B	Yes	3.2	Yes	No	No	Yes	Remove
086439 - 16	B	Yes	2.6	Yes	No	No	Yes	Remove
086439 - 17	B	No	1.5	Yes	No	No	Yes	Remove
086439 - 18	B	Yes	3.6	Yes	No	No	Yes	Remove
086439 - 19	B	Yes	3.6	Yes	No	No	Yes	Remove
086439 - 20	C	Yes	5.1	Yes	No	No	Yes	Remove
086439 - 21	B	No	1.0	Yes	No	No	Yes	Remove
086439 - 22	A	No	0.8	Yes	No	No	Yes	Remove
086439 - 23	A	No	0.3	Yes	No	No	Yes	Remove
086439 - 24	A	No	0.2	Yes	No	No	Yes	Remove
086439 - 25	C	Yes	5.1	Yes	No	No	Yes	Remove
086439 - 26	B	Yes	4.9	Yes	No	No	Yes	Remove
086439 - 27	B	Yes	3.5	Yes	No	No	Yes	Remove
086439 - 28	B	Yes	3.6	Yes	No	No	Yes	Other
086439 - 29	B	No	1.8	Yes	No	No	Yes	Other
086439 - 30	B	Yes	3.4	Yes	No	No	Yes	Other
086439 - 31	C	Yes	5.0	Yes	No	No	No	N/A
086439 - 32	C	Yes	5.1	Yes	No	No	Yes	Other
086439 - 33	B	Yes	1.5	Yes	No	No	No	N/A
086439 - 34	B	No	1.1	Yes	No	No	No	N/A

APPENDIX C

Cultural Resources Technical Report for the Hesperia-Topaz Land Development Project

Cultural Resources Technical Report for the Hesperia-Topaz Land Development Project, Hesperia, San Bernardino County, California

MARCH 2025

PREPARED FOR

San Luis Concrete

PREPARED BY

SWCA Environmental Consultants

CULTURAL RESOURCES TECHNICAL REPORT FOR THE HESPERIA-TOPAZ LAND DEVELOPMENT PROJECT, HESPERIA, SAN BERNARDINO COUNTY, CALIFORNIA

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Report No. 25-208

March 2025

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INTRODUCTION

This report summarizes the results of a Phase I cultural resources assessment in support of the Hesperia-Topaz Land Development Project (project). The project is located northwest of the intersection of Topaz Avenue and Courtney Street in Hesperia, San Bernardino County, California. San Luis Concrete retained SWCA Environmental Consultants (SWCA) to analyze any potential impacts to archaeological resources located within the project area pursuant to the California Environmental Quality Act (CEQA), including relevant portions of Public Resources Code (PRC) Section 5024.1, Title 14 California Code of Regulations (CCR) Section 15064.5 of the State CEQA Guidelines, and PRC Sections 21083.2 and 21084.1.

This report documents the methods and results of a confidential records search of the California Historical Resources Information System (CHRIS), a Sacred Lands File (SLF) Search by the Native American Heritage Commissions (NAHC), and archival research used to evaluate the presence or likelihood of archaeological resources within the project area. The project is subject to review under CEQA, and the City of Hesperia (City) is the lead CEQA agency.

SWCA Archaeologists Erica Nicolay, M.A., and Jennie Stott, M.A., prepared the report, Senior Project Manager Robbie Thomas, M.A., Registered Professional Archaeologist (RPA) provided oversight and managed the field effort, and Cultural Resource Director Kyle Knabb, Ph.D., RPA, acted as Principal Investigator. Copies of the report are on file with SWCA's Pasadena office and the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton.

PROJECT DESCRIPTION AND LOCATION

The proposed project includes construction of seven single-family residences on what will be a new cul-de-sac reached by a long paved site access driveway, and associated street improvement on Topaz Avenue including sewer, domestic water, storm drain, street lighting, sidewalk, curbs and asphalt patch. Specifically, the project will include on-site improvements on a 2.3-acre property and off-site improvements along the property frontage. The proposed project is located at northwest intersection of Topaz Avenue and Courtney Street within the city of Hesperia, San Bernardino County, California (Project Area; Appendix A: Figure A-1 and Figure A-2). The project area consists of eight total lots ranging in size from 7,210 square feet to 13,924 square feet. The lot in the northeastern corner of the project area would be developed with the proposed stormwater retention basin, while the remaining seven lots would be developed with residential single-family uses. The project area is in Section 13 of Township 4 North, Range 5 West, which is plotted on the U.S. Geological Survey (USGS) Hesperia, California, quadrangle (Appendix A: Figure A-3).

REGULATORY SETTING

California Environmental Quality Act

CEQA requires a lead agency to analyze whether historic and/or archaeological resources may be adversely impacted by a proposed project. Under CEQA, a "project that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment" (PRC Section 21084.1). Answering this question is a two-part process: first, the determination must be made as to whether the proposed project involves cultural resources. Second, if

cultural resources are present, the proposed project must be analyzed for a potential "substantial adverse change in the significance" of the resource.

Historical Resources

According to State CEQA Guidelines Section 15064.5, for the purposes of CEQA, historical resources are:

- A resource listed in, or formally determined eligible for listing in the California Register of Historical Resources (PRC 5024.1, 14 CCR, Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significance in a historic resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code.
- Any object, building, structure, site, area, place, record, or manuscript that the lead agency determines to be eligible for national, state, or local landmark listing; generally, a resource shall be considered by the lead agency to be historically significant (and therefore a historic resource under CEQA) if the resource meets the criteria for listing on the California Register (as defined in PRC Section 5024.1, Title 14 CCR, Section 4852).

Resources nominated to the California Register of Historical Resources (CRHR) must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity (as defined above) does not meet National Register of Historic Places (NRHP) criteria may still be eligible for listing in the CRHR.

According to CEQA, the fact that a resource is not listed in or determined eligible for listing in the CRHR or is not included in a local register or survey shall not preclude the lead agency from determining that the resource may be a historical resource (PRC Section 5024.1). Pursuant to CEQA, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (State CEQA Guidelines, Section 15064.5[b]).

SUBSTANTIAL ADVERSE CHANGE AND INDIRECT IMPACTS TO HISTORICAL RESOURCES

State CEQA Guidelines specify that a "substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (State CEQA Guidelines, Section 15064.5). Material impairment occurs when a project alters in an adverse manner or demolishes "those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion" or eligibility for inclusion in the NRHP, CRHR, or local register. In addition, pursuant to State CEQA Guidelines Section 15126.2, the "direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects."

The following guides and requirements are of particular relevance to this study's analysis of indirect impacts to historic resources. Pursuant to State CEQA Guidelines (Section 15378), study of a project under CEQA requires consideration of "the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." State CEQA Guidelines (Section 15064(d)) further define direct and indirect impacts:

(1) A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project.

(2) An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment.

(3) An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project.

Archaeological Resources

In terms of archaeological resources, PRC Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a proposed project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2[a], [b], and [c]). CEQA notes that, if an archaeological resource is neither a unique archaeological resource nor a historical resource, the effects of the project on those resources shall not be considered to be a significant effect on the environment (State CEQA Guidelines Section 15064.5[c][4]).

California State Assembly Bill 52

Assembly Bill 52 of 2014 (AB 52) amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3.

CONSULTATION WITH NATIVE AMERICANS

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

TRIBAL CULTURAL RESOURCES

Section 4 of AB 52 adds Sections 21074 (a) and (b) to the PRC, which address tribal cultural resources and cultural landscapes. Section 21074 (a) defines tribal cultural resources as one of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

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

Section 1 (a)(9) of AB 52 establishes that "a substantial adverse change to a tribal cultural resource has a significant effect on the environment." Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures "capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource." Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Sections 21083.2 and 21084.1). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historical resources surveys, or designated by local landmarks programs, may be nominated for inclusion in the CRHR. According to PRC Section 5024.1(c), a resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- **Criterion 1:** It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- **Criterion 2:** It is associated with the lives of persons important in our past.
- **Criterion 3:** It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- **Criterion 4:** It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to convey the reasons for their significance. Resources whose historic integrity does not meet NRHP criteria may still be eligible for listing in the CRHR.

Treatment of Human Remains

The disposition of burials falls first under the general prohibition on disturbing or removing human remains under California Health and Safety Code Section 7050.5. More specifically, remains suspected to be Native American are treated under CEQA at CCR Section 15064.5; PRC Section 5097.98 illustrates the process to be followed in the event that remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the County Coroner must be notified (CCR 15064.5 and PRC 5097.98).

METHODS

In support of this analysis, SWCA completed a confidential records search of the CHRIS, an SLF search through the California NAHC, archival research, and an intensive pedestrian survey. The results of these were used to evaluate the presence or likelihood of cultural resources within the project area.

California Historical Resources Information System Records Search

On August 8, 2024, SWCA conducted a search of the CHRIS at the SCCIC on the campus of California State University, Fullerton. This search included any previously recorded cultural resources and investigations within a 0.5-mile radius of the project area for archaeological resources. A subsequent search of the CHRIS data was conducted on March 12, 2025, that expanded the search radius from 0.5 mile to 1 mile. The CHRIS records search also included a review of the NRHP, the CRHR, California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list (Office of Historic Preservation Directory of Historic Properties Data File), the City's HCM list, and the California State Inventory of Historic Resources.

Sacred Lands File Search

The NAHC is charged with identifying, cataloging, and protecting Native American cultural resources, which includes ancient places of special religious or social significance to Native Americans, and known ancient graves and cemeteries of Native Americans on private and public lands in California. The NAHC's inventory of these resources is known as the SLF. In addition, the NAHC maintains a list of tribal contacts affiliated with various geographic regions of California. The contents of the SLF are strictly confidential, and SLF search requests return positive or negative results in addition to a list of tribal contacts with affiliation to the specified location. A letter from the NAHC summarizing the results of the records search is provided in Appendix B.

Archival Research

Concurrent with the confidential CHRIS records search, SWCA conducted a desktop review of available historic-age maps, aerial images, and quadrangles along with San Bernardino County Assessor records. This archival research focused on assessing the general sequence of historic-age development within the project area and identifying any natural, built, or other resources that may have previously existed within the project area. The aerial images and maps were also used to assess the potential for previously unrecorded built environment or other archaeological resources to be present within the project area. Sources consulted included the following publicly accessible data sources: USGS (2025) historical

topographic maps; University of California, Santa Barbara Aerial Imagery Library (2025); and NETROnline Historical Aerials (2025) (historic topographic maps and aerial images).

Cultural Resources Survey

On March 7, 2025, SWCA Archaeologist Cecilio Garcia conducted an archaeological intensive pedestrian survey of the 2.3-acre project area (see Figure A-2 in Appendix A). The purpose of the survey was to identify cultural resources and historical built environment resources that may be present within the project area. The intensive-level survey consisted of systematic surface inspection of all areas with transects walked at 10- to 15-meter (m) intervals or less to ensure that any surface-exposed artifacts and sites could be identified.

SWCA examined the ground surface for the presence of prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools); historic artifacts (e.g., metal, glass, ceramics); sediment discoloration that might indicate the presence of a cultural midden; roads, and trails; and depressions and other features that might indicate the former presence of structures or buildings (e.g., post holes, foundations).

Overviews of the survey area were photographed using a digital camera. Survey data collection (including mapping) utilized a tablet computer (Samsung Galaxy Tab A) paired with a Juniper Geode submeter-accurate Global Navigation Satellite System receiver. The survey was documented using standard archaeological survey forms. All field notes, photographs, and records related to the current study are on file at SWCA's office in Pasadena, California.

ENVIRONMENTAL SETTING

The project area is located within the Victor Valley, a subregion located along the southern edge of the larger Mojave Desert. The project area is located on undeveloped land that supports scattered Joshua trees (*Yucca brevifolia*) with an herbaceous understory dominated by nonnative forbs and grasses. Disturbance on-site includes vegetation removal, trash piles, and unmaintained roads associated with off-road vehicle usage. Topographically, the setting is characterized as an open aspect plain with a very gradual slope to the south. The project area is at an elevation of approximately 1,030 to 1,035 meters (m) (3,380–3,396 feet) above mean sea level. The project area is near two washes: the Oro Grande Wash, a segment of the Upper Mojave River Basin that is 2.43 kilometers (km) (1.5 miles) to the northwest, and an unnamed wash located directly to the northwest of the project area. Both washes run in a meandering northwesterly-southeasterly direction. Notably, however, these two water sources are seasonal or dependent on heavy rains and are likely dry much of the year. A segment of the California Aqueduct also runs in northeasterly-southwesterly direction approximately 1.6 km (1 mile) to the southwest of the project area, and the Mojave River is located 10.62 km (6.6 miles) to the east of the project area. The soils within the site largely date to the Pleistocene (Tang et al. 2010:19).

HISTORIC CONTEXT

Prehistoric Context

The prehistory of southern California is varied and rich, encompassing a period of more than 12,000 years. Numerous chronological sequences have been devised to explicate cultural changes for various areas within southern California over the past 75 years (Moratto 2004). This prehistoric overview

is structured using the latest Mojave Desert culture history (Sutton et al. 2007). The framework is thus divided into four major periods: Pleistocene, Early Holocene, Middle Holocene, and Late Holocene (Table 1).

Table 1. Mojave Desert Chronology (after Sutton et al. 2007:236)

Temporal Period	Cultural Complex or Period	Approximate Dates	Marker Artifact
Pleistocene	Pre-Clovis (hypothetical)	Pre-10,000 cal BC	Unclear
	Paleoindian	10,000–8000 cal BC	Fluted points (Clovis)
Early Holocene	Lake Mojave	8000–6000 cal BC	Stemmed points (Lake Mojave, Silver Lake)
	Pinto		
Middle Holocene		7000–3000 cal BC	Pinto Series points
Late Holocene	Gypsum	2000 cal BC–cal AD 200	Gypsum and Elko Series points
	Rose Spring	cal AD 200–1100	Rose Spring and Eastgate Series points
	Late Prehistoric	cal AD 1100–Contact	Desert Series points, ceramics

Paleoindian Period (ca. 10,000 to 8000 BC)

A firm date for the initial human occupation of the Mojave Desert has not yet been established. While there have been several controversial claims of Pleistocene-age (pre-Clovis) finds, such as the Early Man Site of Calico Hills (Leakey et al. 1968; Leakey, Simpson, Clements et al. 1972), most archaeologists remain unconvinced by available Mojave Desert data. The growing acceptance of evidence for pre-Clovis occupations elsewhere in the Western Hemisphere suggests the possibility that such evidence may yet be found in this region as well.

The earliest broadly accepted cultural complex in the Mojave Desert is the Clovis Complex (Sutton et al. 2007:233). The hallmark artifacts of this complex are large lanceolate-shaped bifaces with distinctive fluting, used to thin and flatten the base for hafting. Other tools associated with the Clovis Complex were large side scrapers, blades struck from prepared cores, and a mixture of expedient flaked tools (Justice 2002:73). Paleoindian populations associated with fluted point technology consisted of small, mobile groups who hunted and gathered near permanent sources of water such as pluvial lakes.

There is some doubt as to whether the Clovis Complex had a temporally or geographically extensive presence in the Mojave Desert. Fluted points have traditionally been interpreted as tools used for hunting Pleistocene megafauna due to their clear association with megafauna remains in the American Southwest, but most fluted points found in California have been recovered as isolated surface finds without confirmed Pleistocene radiocarbon dates (Arnold 2004). However, excavations at China Lake during the 1970s uncovered fluted points associated with burned, extinct megafaunal material (Davis 1975). These discoveries are among the more convincing evidence that suggests there was human occupation during the terminal Pleistocene (Giambastiani and Berg 2008:12).

The Early Holocene (8000 to 6000 BC)

The communities that lived in the Mojave Desert witnessed and were profoundly affected by great environmental changes during the gradual Pleistocene-Holocene transition. Temperatures became warmer

but remained cooler and moister than today. The Mojave Desert became marked by shallow lakes and marshes that were biologically very productive. These were surrounded by desert vegetation typical of later time periods, most prominent being the white bursage and later the creosote bush (Grayson 1993:199-200). Some low-elevation locales retained maintained juniper and sagebrush habitats. By the early Holocene, warmer temperatures, reduced precipitation, and the eventual dehydration of the pluvial lakes are believed to have led to irregularities in the distribution and abundance of resources (Sutton et al. 2007: 237). These climatic changes created the need for a more diversified subsistence strategy; the archaeological pattern associated with this adaptation is known as the Lake Mojave Complex.

Named for a Pleistocene lake in southern California, the Lake Mojave Complex is recognized by the heavy, stemmed projectile points of the Great Basin Stemmed series such as Lake Mojave and Silver Lake. Other tools include bifaces, steep-edged unifaces, crescents, the occasional cobble-core tool, and, rarely, ground stone implements (Justice 2002:91). This tool kit represents a generalized adaptation to highly variable terrain. For example, the crescent is thought to have served multiple functions, including use as a spear tip to hunt waterfowl (Justice 2002:116).

While the tool kit of the Lake Mojave Complex has long been thought of as an adaptation to lacustrine subsistence strategies, this conclusion was based on largely circumstantial evidence: the occurrence of numerous sites along extinct shorelines (Moratto 2004:93-96). However, many of the lakes were no longer constant sources of water during the Holocene, and an increasing number of recent studies (e.g., Basgall 2005; Basgall and Jurich 2006; Giambastiani and Berg 2008:14), have revealed that the people of the Lake Mojave Complex sites occur in non-lacustrine terrain as well. Furthermore, there is no clear evidence that Lake Mojave technology indicates a focus on aquatic resources (Basgall and Jurich 2006:12). Sutton et al. (2007:237) have noted that the Lake Mojave assemblages included tools that are "consistent with long-term curation and transport." Additionally, it is not uncommon for extralocal materials, such as stone artifacts and marine shell beads, to be found in Lake Mojave cultural deposits, suggesting that Lake Mojave people were either highly mobile or interacted with groups over long distances.

The changing climate, distribution of occupational sites, and the all-terrain tool kit suggest that the inhabitants of the Mojave Desert during the early Holocene developed a broad-ranging subsistence strategy based on patterns of "intensive environmental monitoring" (Sutton et al. 2007:237): the people monitored the seasons and moved in the direction of known resource patches.

The Middle Holocene (7000 to 3000 BC)

The middle Holocene climate, although more arid than periods before and after, was still highly variable, with multiple oscillations between wetter and drier conditions occurring throughout. In addition, although the lakes and marshes of the early Holocene dried up, streams and springs in the Mojave Desert may have still maintained water flow from nearby ranges, at various times and places, providing suitable water sources to sustain human activity, albeit at low densities (Aikens 1978; Basgall 2000; Cleland and Spaulding 1992; Sutton 1996; Warren 1984). Between 7000 and 5000 BC, temperatures appear to have risen and aridity appears to have increased, peaking between 6000 and 5000 BC Lowland ephemeral lakes and streams began to dry up, and vegetation communities capable of supporting large game animals became limited to a few isolated contexts. Settlement patterns adapted, shifting to upland settings where sources of water still existed (Sutton 1996). This land-use change also correlated with adjustments in tool assemblage content and diversity, resulting in the emergence of the Pinto Complex.

Originally defined by Campbell and Campbell (1935), the Pinto Complex appears to represent shifts in subsistence patterns and adaptations, with greater emphasis placed on the exploitation of plants, as well as a continued focus on artiodactyls and smaller animals. It had a wider distribution throughout the Mojave

Desert than the previous complexes. The pan-desert nature of the complex suggests that it represents a settlement system with a high degree of residential mobility.

The distinctive characteristics of the Pinto Complex tool kit, as defined by Justice (2002:126) and Zyniecki (2003:12), include "indented base and bifurcate base projectile points with robust basal ears and weak shoulders." Other diagnostic artifacts types of this complex include large and small leaf-shaped bifaces, domed and heavy-keeled scrapers, numerous core/cobble tools, large metates and milling slabs, and shaped and unshaped handstones.

Basgall hypothesized the existence of a distinct complex occupying the Mojave Desert at the same time as the Pinto Complex. His hypothesized Deadman Lake Complex is characterized by "small-to-medium-size contracting-stemmed or lozenge-shaped points, extensive concentrations of battered cobbles and core tools, abundant bifaces, simple flake tools, and milling implements" (Sutton et al. 2007:239). Basgall and his coauthors speculate that the complexes coexisted, the Pinto materials associated with pluvial lakes and the Deadman Lake Complex at higher elevations. These complexes may represent the material evidence of two separately adapted groups; alternatively they may indicate two different activity patterns produced by a single group. However, they acknowledge that the sample of known sites containing Deadman Lake assemblages is extremely small, and any characterization of the complex as a distinct cultural system is provisional at best. It is still unclear whether Pinto and Deadman Lake complexes represent the material evidence of two separately adapted groups, or of two different activity patterns produced by a single group.

Near the end of the Middle Holocene the climate became hotter and drier, marked by a period of "cultural hiatus" between 3000 and 2000 BC; during this gap there appears to have been little to no human occupation in much of the Mojave (Sutton et al. 2007:241).

The Late Holocene (2000 BC to Contact)

The climate of the prehistoric Late Holocene approximates that of today, with cooler and moister conditions than the middle Holocene but not as cool and moist as the early Holocene. As with the middle Holocene, the climate was highly variable. Many lakes once again rose to high stands, and plant communities took on their modern distribution; however, these lake levels fluctuated, at times dramatically, throughout the period. At least two major droughts are thought to have occurred within the Sierras (Stine 1994), at ca. AD 892 to 1112, and ca. AD 1209 to 1350. This was followed by a cooler and wetter period between 600 and 150 years ago (Cleland and Spaulding 1992:4). People returned to the region, and human subsistence strategies, compared to previous settlement behavior, changed significantly. This subsistence strategy correlated with adjustments in artifact/tool assemblage content and diversity, resulting in the emergence of the Gypsum Complex.

The Gypsum Complex was characterized by dart-point size projectile points in notched or eared (Elko), concave base (Humboldt), and small-stemmed (Gypsum) forms. In addition to diagnostic projectile points, Gypsum Complex sites included leaf-shaped points, rectangular-based knives, flake scrapers, T-shaped drills, and, occasionally, large scraper planes, choppers, and hammerstones (Warren 1984:416). Manos and milling stones were common, and the mortar and pestle were also introduced during this period. Other artifacts included split-twig animal figurines, *Olivella* shell beads, and *Haliotis* beads and ornaments. The presence of both *Haliotis* and *Olivella* shell beads and ornaments and split-twig animal figurines indicates that the California desert inhabitants were in contact with populations from the southern California coast and the southern Great Basin (Arizona, Nevada, and Utah). The increased contact with other groups likely provided the local inhabitants with storable food products in exchange for lithic materials (obsidian, chalcedony, and chert). Despite all of this activity in the Mojave Desert during

this period, there is very little evidence for long-term occupation within the Marine Corps Air Ground Combat Center (MCAGCC) (Sutton et al. 2007:241).

By AD 200, the climate had become slightly cooler. Population size appears to have increased, as evidenced by a higher frequency of archaeological sites. This period in California prehistory is marked by the Rose Spring Complex, an archaeological pattern associated with a time frame known as the Saratoga Springs, Haiwee, or Amargosa period, depending on region (Sutton 1996; Sutton et al. 2007:236). By the onset of this period at AD 200, dart-size points were being replaced with smaller Rose Spring projectile points, signaling the introduction of the bow and arrow (Yohe 1998). This innovation may also correspond with the beginning of the Numic expansion, which many researchers believe emanated from southeastern California (Bettinger and Baumhoff 1982; Grayson 1993). Major villages and numerous smaller sites dating to this period have been recorded in eastern California, many of which contain bedrock milling features in addition to portable milling equipment.

The introduction of ceramics to the archaeological record of the Mojave Desert region marks the beginning of the Late Prehistoric period (ca. AD 1100–1770). During this period Rose Spring-style projectile points were replaced with smaller Desert Side-notched and Cottonwood series points. Resource intensification and specialization are suggested by an increased variety of tool forms, use of new technologies such as the mortar and pestle and ceramics, use of storage facilities, and increased diversity in the locations of archaeological sites. In the central Mojave Desert, the Mojave River became a primary focus of occupation, and trade networks increased along the Mojave River and over the San Gabriel Mountains (Sutton 1996). During the early portions of the Late Prehistoric period, the Colorado River intermittently flowed westward into the Salton Trough, forming Lake Cahuilla. This freshwater lake was more than 100 miles long and extended well into the present-day Coachella Valley before its final recession after AD 1400. Archaeological remains recovered from the extinct lakeshore, as well as Cahuilla oral history, reflect the fish, mussels, waterfowl, and other lacustrine resources that made up local subsistence regimes during this period. There is evidence that populations relocated to new residential bases in the Peninsular Range foothills, including the Little San Bernardino Mountains immediately south of the project area, following the final recession of Lake Cahuilla (Wilke 1978).

Generally speaking, archeological evidence left by highly mobile hunter-gatherers in the Mojave Desert most often takes the form of sparse scatters of flaked stone, ground stone, and ceramic artifacts and features such as hearths, rock rings, and trails. These remains represent resource extraction and processing sites as well as short-term encampments. Repeated use of specific locations may result in more diverse and substantial archaeological deposits. Likely locations for such habitual-use areas are places with predictable critical resources, especially water, tree crops (e.g., piñon), and outcrops of stone suitable for tool manufacture.

Ethnographic Context

According to available ethnographic maps (Bean and Smith 1978:570; Kroeber 1925; Sutton et al. 2007:232), the study area falls within the traditional territory of the Serrano people, being situated south of the Kawaiisu, southeast of the Kitanemuk, and west of the Southern Paiute. Other neighboring Takic-speaking groups include the Tataviam and Gabrielino (or *Tongva*) to the west and southwest and the Cahuilla to the south. Ethnographic boundaries in the Mojave Desert are loosely defined, owing to the highly mobile nature of desert settlement strategies and the variety of alternatives presented by previous researchers.

Serrano

The Serrano language is part of the Serran division of a branch of the Takic family of the Uto-Aztecan linguistic stock (Mithun 2006:539, 543). The two Serran languages, Kitanemuk and Serrano, are closely related. Kitanemuk lands were northwest of Serrano lands. Serrano was originally spoken by a relatively small group located within the San Bernardino and Sierra Madre mountains, and the term "Serrano" has come to be ethnically defined as the name of the people in the San Bernardino Mountains (Kroeber 1925:611). The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (Mithun 2006:543).

The Serrano occupied an area in and around the San Bernardino Mountains between approximately 450 and 3,350 meters (1,500–11,000 feet) above mean sea level. Their territory extended west into the Cajon Pass, east past Twentynine Palms, north past Victorville, and south to Yucaipa Valley. Year-round habitation tended to be located on the desert floor, at the base of the mountains, and up into the foothills, with all habitation areas requiring year-round water sources (Bean and Smith 1978; Kroeber 1908).

Most Serrano lived in small villages located near water sources (Bean and Smith 1978:571). Houses measuring 12 to 14 feet in diameter were domed and constructed of willow branches and tule thatching. The interiors were encircled with tule mats. Each house was occupied by a single extended family, including a husband, wife (or wives), children, grandparents, and perhaps a widowed aunt or uncle, and was a family gathering place for sleeping and storage. Much of the daily routine occurred outdoors in the open or under square ramadas constructed of at least four posts, cross-beams, and tule-thatched roofs. Many of the villages had a ceremonial house, used both as a religious center and the residence of the lineage leaders. When hunting, the men would sometimes construct individual dwellings away from the village. Additional structures within a village might include granaries and a large circular subterranean sweathouse. The sweathouses were typically built along streams or pools.

A village was usually composed of at least two lineages, referred to as a lineage set. In each village, one lineage tended to be more dominant than the other. Lineages tended to rise and fall in dominance. A lineage set would intermarry, share ties of economic reciprocity, and share the ceremonial house and ceremonial bundle. Lineage sets together assumed the responsibility of conducting religious ceremonies through the one lineage's religious leader and his assistant; the assistant was the religious leader of the other lineage of the set. The Serrano were loosely organized along patrilineal lines and associated themselves with one of two exogamous moieties or "clans"—the Wahiyam (coyote) or the Tukum (wildcat) moiety.

Serrano territory was a trade nexus between inland tribes and coastal tribes. Ethnohistory also suggests that the Serrano played a role in the trade of horses from the southwest to the California coast (Bean and Vane 2002). Despite the Serrano's large geographic extent, as well as their control of significant travel corridors, some anthropologists consider the politically autonomous structure and function of the village unit and therefore have difficulty considering the Serrano a unified "tribe," as that word is defined as a unit of people with a common political leadership (Kroeber 1925:617; Strong 1929:14).

The subsistence economy of the Serrano was one of hunting and collecting plant goods, with occasional fishing carried out (Bean and Smith 1978:571). They hunted large and small animals, including mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Plant staples consisted of seeds; acorn nuts of the black oak; piñon nuts; bulbs and tubers; and shoots, blooms, and roots of various plants, including yucca, berries, barrel cacti, and mesquite. The Serrano used fire as a management tool to increase yields of specific plants, particularly chía.

Trade and exchange was an important aspect of the Serrano economy. Those living in the lower-elevation, desert floor villages traded foodstuffs with people living in the foothill villages who had access to a different variety of edible resources. In addition to inter-village trade, ritualized communal food procurement events, such as rabbit and deer hunts and piñon, acorn, and mesquite nut-gathering events, integrated the economy and helped distribute resources that were available in different ecozones.

Among the materials that the Serrano used for hunting, gathering, and processing food, many were also used for shelter, clothing, and ceremonial items. Shell, wood, bone, horn, stone, plant materials, animal skins, and feathers were used for making money, baskets, rabbit skin blankets, mats, nets, and bags. The Serrano made pottery and used it daily to carry and store water or foodstuffs; ceramics were also used as ceremonial objects (Benedict 1924). They also made awls, sinew-backed bows, arrows, arrow straighteners, throwing sticks (for hunting), traps, fire drills, stone pipes, musical instruments of various types (rattles, rasps, whistles, bull-roarers, and whistles), yucca fiber cordage for snares, nets, and carrying bags, and clothing (Bean and Smith 1978:571; Bean and Vane 2002). A strong tradition of basket weaving incorporated the use of juncus sedge, deergrass, and yucca fiber (Benedict 1924). They cooked foods in earth ovens or in watertight baskets using heated cooking rocks and stirring constantly, or by parching through use of hot embers and a constant tossing motion of shallow trays containing the grains. Animal bones were boiled and then cracked for access to the marrow. A variety of methods were used in the drying and preserving of foods for later consumption.

Mainly due to the inland location of the territory that Serrano occupied beyond Cajon Pass, contact between Serrano and Europeans was relatively minimal prior to the early 1800s. As early as 1790, however, Serrano began to be drawn into mission life (Bean and Vane 2002). More Serrano were relocated to Mission San Gabriel in 1811 after a failed indigenous attack on that mission. Most of the remaining western Serrano were moved to an *asistencia* built near Redlands in 1819 (Bean and Smith 1978:573). By 1834, most western Serrano had been moved to the missions, with some Serrano possibly moved to the mission at San Fernando Rey (Kroeber 1908). Only small groups of Serrano remained in the area northeast of the San Gorgonio Pass and were able to preserve some of their native culture.

In the 1860s, a smallpox epidemic killed many indigenous southern Californians, including many Serrano (Bean and Vane 2002). Oral history accounts of a massacre in the 1860s at Twentynine Palms may have been part of a larger American military campaign that lasted 32 days (Bean and Vane 2002:10). Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors and eventually settled what later became the San Manuel Band of Mission Indians Reservation. This reservation was established in 1891 (San Manuel Band of Mission Indians 2008).

Historic Context

Post-contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although there were brief visits by Spanish, Russian, and British explorers from 1529 to 1769, the Spanish Period in California began with the establishment in 1769 of a settlement at San Diego and the first (Mission San Diego de Alcalá) of 21 missions constructed between 1769 and 1823. Independence from Spain marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period, when California became a territory of the United States.

Spanish Period (1769–1822)

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and late 1700s. In search of the legendary Northwest Passage, Juan Rodríquez Cabrillo stopped in 1542 at present-day San Diego Bay. With his crew, Cabrillo explored the shorelines of present-day Catalina Island, and San Pedro and Santa Monica bays. Much of the present California and Oregon coastline was mapped and recorded in the following half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabrillo and Vizcaíno (Bancroft 1886:96–99; Gumprecht 1999:35).

Inland exploration and colonization of Alta California by Spain would not be a priority for more than 200 years. The 1769 overland expedition by Captain Gaspar de Portolà marks the beginning of California's "Historic Period," occurring just after the king of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolà established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. Also in July of 1769, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823.

Although Pedro Fages traveled near the Cajon Pass as early as 1772, the first known Spanish explorer to enter the area that would become San Bernardino County was Fr. Francisco Garcés, traveling from the Colorado River in 1776 (Hoover et al. 2002:321). Fr. Garcés traveled as far as the Pacific coast along an ancient trade route, known as the Mojave Trail, and he named the Mojave River Arroyo de los Mártires (Stream of the Martyrs). The river was later named Rio de las Animas (River of Souls) by Fr. Joaquín Pasqual Nuez, who accompanied the 1819 expedition of Lt. Gabriel Moraga. The San Bernardino Valley was named in 1810 by the Franciscan missionary Francisco Dumetz, who led a party from the San Gabriel Mission into the valley in observance of the Feast of St. Bernardine of Siena.

The series of 21 missions was situated parallel to the California coastline between San Diego and Sonoma. Near-coastal locations were preferred by the Spaniards for colonization because they were easier to defend and supply from ships and were also bordered by populous Native American villages with potential converts. Although present-day San Bernardino County did not formally host Spanish missions, the region remained connected to the California presidio and mission system through the Franciscan rancho and *asistencia* outposts. Near today's city of Redlands in San Bernardino County, the San Bernardino de Sena Estancia (also known as the San Bernardino Rancho) was established in 1819 for grazing cattle owned by the Mission San Gabriel Arcángel (Engelhardt 1927).

A major government objective during the Spanish Period in California was to build missions and associated presidios to integrate the Native American population into Christianity and communal enterprise. Inducements were also made to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish Period, only two of which were successful and are now major California cities (San José and Los Angeles). The threat of foreign invasion, political dissatisfaction, demands for land by civilian settlers and retiring soldiers, and unrest among the indigenous population kept growth within Alta California to a minimum.

Mexican Period (1822–1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California

ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports, including San Diego, open to foreign merchants (Dallas 1955:14).

During this period, trappers and explorers from the eastern United States journeyed westward. Jedediah Strong Smith was among these early American adventurers. He traveled through the project vicinity in 1826 and 1827 and nicknamed the Mojave River the "Inconstant River" because it frequently disappeared beneath the ground's surface.

The influence of the California missions waned in the late 1820s through the early 1830s, and as one consequence, extensive land grants in the interior were initiated in the Mexican Period, in part to entice populations away from the more settled coastal areas where the Spanish had concentrated their colonization efforts. Following adoption of the Secularization Act of 1833, the Mexican government privatized most Franciscan lands, including holdings of their California missions. By 1836, this sweeping process effectively reduced the California missions to parish churches and released their vast landholdings. Although earlier secularization schemes had called for redistribution of lands to Native American neophytes who were responsible for construction of the mission empire, the vast mission lands and livestock holdings were instead redistributed by the Mexican government through several hundred land grants to private, non–Native American ranchers (Langum 1987:15–18).

The Mexican Period is marked by the rise of large ranchos, which became important economic and social centers. Some 20 ranchos covering nearly 500,000 acres were granted in northwestern Riverside and southwestern San Bernardino counties. These included Ranchos El Rincón and Jurupa, which straddled both of today's counties; and Cucamonga, Santa Ana, and San Bernardino in San Bernardino County.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The non-Native American population of California increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population unfortunately contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities. Large numbers of native peoples in the Central Valley, for example, died of disease between 1830 and 1833, and disease exterminated whole tribes along the American, Merced, Tuolumne, and Yuba rivers. The Central Valley was hit by a second epidemic in 1837, which further reduced indigenous Californian populations (Cook 1955).

American Period (1848–Present)

The Mexican-American War ended with the Treaty of Guadalupe Hidalgo, signed in 1848, ushering California into its American Period. Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through the first decade of the Gold Rush beginning in 1848. California attained statehood with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories. San Bernardino County was organized from parts of Los Angeles and San Diego counties in April of 1853, and the city of San Bernardino became the county seat in 1854. Although portions of San Bernardino and San Diego Counties were used to create Riverside County in 1893, San Bernardino County remains the largest county in California.

During the Gold Rush, thousands of people traveled the Gila Trail or Southern Overland Trail from Texas to Arizona, then crossed the Colorado River at present-day Yuma into California and proceeded across the Colorado Desert to the San José Valley. The main trail continued from that point northward to Temecula and Los Angeles. Many left the main trail and traveled southward to San Diego, where they

then journeyed via ship to San Francisco or took the inland coastal route to Los Angeles, rejoining the main trail to the goldfields. Thousands more traveled the Mojave River Trail, named the Old Spanish Trail by Captain John C. Frémont in 1844. Starting in Santa Fe, New Mexico, and continuing through Utah and Arizona, the trail then crossed the Mojave Desert to reach the Mission San Gabriel Arcángel and the Pueblo de Los Ángeles. Northeast of Victorville near today's community of Daggett, a group of Native Americans told Frémont they had lived along the Mojave River and the mountains to the north, and traded with other indigenous peoples in the region along the Mojave River Trail. Frémont's is the first account to use the name "Mojave River" (Frémont 1845:260).

With the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains where available. The cattle boom ended for southern California as neighboring states and territories drove herds to northern California at reduced prices, as operation of the huge ranchos became increasingly difficult, and as droughts severely reduced their productivity.

American politics and the need for a mild-winter route to the west favored a southerly thoroughfare from the eastern United States to California in the 1850s. The U.S. Gadsden Purchase of 1854 secured more land from Mexico for this route, and by 1857, surveys established the current international boundary from New Mexico west to California (Walker and Bufkin 1986). In 1857, the government awarded to James E. Birch a mail contract for 1,475 miles from San Antonio, Texas, to San Diego, California. The contractor's "Jackass Mail" passed through the Imperial Valley on its 2-month-long round trips. In 1858, the federal contract passed to the Butterfield Overland Mail Company. With the start of the Civil War in 1861 and departure of Southern representatives from Congress, the U.S. government canceled Butterfield's contract and suspended talks on a southern transcontinental rail route.

Wagon roads and railroads constructed across California's Colorado and Mojave deserts from the 1840s to the 1870s connected coastal California with the rest of the county. These modes of transport served to carry mail, prospectors, miners, entrepreneurs, merchants, immigrants, laborers, muleteers, settlers, and military personnel as well as civilian and military supplies, livestock, produce, timber, and minerals produced by desert mines, among other necessities. The construction of permanent roadways in the place of desert trails and wagon roads marked the increased use of the automobile at the turn of the twentieth century. In addition to the Mojave River Trail (Old Spanish Trail) and the southern Yuma route (Gila Trail, Southern Overland Trail, Butterfield Stage Route), the earliest routes that traversed the California deserts from the west to the Colorado River included Brown's Wagon Road, the Bradshaw Trail, and Brown and Frink's Road.

Following the Civil War, overland stage services to and from southern California resumed in 1868 with the Holladay and Wells Fargo operations (Nevin 1974; Stein 1994). The pre-Civil War national initiative for a southern transcontinental railroad route resumed during the 1870s, as the Texas and Pacific (T&P) Railway Company in 1871 received a federal charter and conducted transcontinental surveys to pursue the initiative. In 1873, however, the T&P's westerly construction stalled in north-central Texas. The resulting delay was critical, allowing San Francisco investors to extend their own Southern Pacific Railroad (SPRR) through Imperial Valley to the Colorado River in 1877, bridging the river at Yuma into Arizona along the T&P survey in 1878 (Yenne 1985). The SPRR had already reached the extreme southwest corner of San Bernardino County in 1876. The Atlantic and Pacific (later the Atchison, Topeka, and Santa Fe; now the Burlington Northern Santa Fe) Railroad soon crossed the central part of the county, the Southern California Railway linked Barstow to San Diego in 1885, and San Bernardino was connected to the eastern states in 1887 via the Atchison, Topeka, and Santa Fe via Barstow and Needles.

The first highways across the Mojave Desert followed the Cajon Pass-Barstow-Needles route established by the Southern California Railway and the Atchison, Topeka, and Santa Fe. Established in 1912, the Ocean-to-Ocean Highway, now known as the National Old Trails Road, stretched from Baltimore, Maryland, to California. The route across the California deserts followed the Mojave River/Old Spanish Trail through Needles and Barstow to San Bernardino. Established in 1926, the majority of U.S. Route 66 largely followed the Ocean-to-Ocean Highway, passing through the desert region south of Needles on its way across the country to Los Angeles. After U.S. Route 66 was decommissioned in 1985, parts of it became Interstate 40 (I-40) as well as Interstate 15 (I-15). Remains of the route in several western states, including California, have been designated a National Trails Highway. Other important highways that crossed through the region included the Randsburg/San Bernardino Road, which was added to the state system of secondary highways in 1933 and designated State Route 145. The highway was designated U.S. Route 395 (US-395) 2 years later.

RESULTS

Records Search Results

Previously Conducted Studies

SWCA conducted searches of the CHRIS records from the SCCIC on August 8, 2024, and March 12, 2025. Results of the records search indicate that 29 previous cultural resource investigations have been conducted within a 1-mile radius of the project area. Of the 29 studies, one study—SB-06859—overlaps the project area. SB-06859 included a cultural resource survey report in support of two proposed wastewater treatment facilities in the town of Apple Valley and the city of Hesperia, both within San Bernardino County. The portion of this study within Hesperia overlaps the entirety of the current project area. SB-06859 included a survey as well as a records search at the SCCIC; no archaeological resources were identified, and no further work was recommended. Details pertaining to these investigations are listed in Table 2.

Table 2. Previous Cultural Resources Studies within 1 mile of the Project Area

Report No.	Study Title	Author and Affiliation	Year	Relationship to Project Area
SB-00191	*Archaeological, Historical, and Paleontological Site Survey for County Service Area No. 70 Improvement Zone "J", Assessments of Impact and Recommendations*	Smith, Gerald A.: San Bernardino County Museum Association	1973	Outside
SB-00986	*Baldy Mesa Water Lines, Cultural Resources Assessment*	Reynolds, Robert E.: San Bernardino County Museum Association	1980	Outside
SB-01025	*Archaeological, Historical, And Paleontological Site Survey for County Service Area No. 70 Improvement Zone "J", Assessments of Impact and Recommendations*	Harris, Ruth: San Bernardino County Museum Association	1973	Outside
SB-01026	*Archaeological, Historical and Paleontological Site Survey for County Service Area No. 70, Improvement Zone "J", Assessments of Impact and Recommendations*	Harris, Ruth: San Bernardino County Museum Association	1974	Outside
SB-01027	*Cultural Resources Assessment: Baldy Mesa Water Lines, County Service Area 70, Improvement Zone J, San Bernardino County, California*	Reynolds, Robert E.: San Bernardino County Museum Association	1980	Outside

Report No.	Study Title	Author and Affiliation	Year	Relationship to Project Area
SB-02314	*An Archaeological Assessment of a 9.23-Acre Parcel Located Immediately Northeast of the Intersection of Main Street and Topaz Avenue in Hesperia, San Bernardino County*	White, Robert S.: Archaeological Associates	1991	Outside
SB-02476	*A Phase I Linear Survey: Cultural Resources Investigations for the Hesperia Improvement District, Hesperia, San Bernardino County, California*	Mckenna, Jeanette A.: Mckenna et al.	1991	Outside
SB-02802	*Historical Structures Assessment for the Phelan Road Widening Project, Baldy Mesa Road to Los Banos Road, County of San Bernardino, California*	Brock, James: Archaeological Advisory Group	1993	Outside
SB-03020	*(Draft) Adelanto-Lugo Transmission Project Cultural Resources Assessment*	Sturm, Brad, D. Mclean, K. Becker, and J. Rosenthal: Woodward-Clyde	1993	Outside
SB-04575	*Cultural Resources Survey of the Feole Property, APN: 0405-052-02, Hesperia, San Bernardino County, California*	Austerman, Virginia and Kenneth M. Becker: Unknown	2005	Outside
SB-04790	*Historical/ Archaeological Resources Survey Report: Tentative Tract Map No. 17916, in the City of Hesperia, County of San Bernardino, California*	Jacquemain, Terri, Hruby, Zachary X., and Josh Smallwood: Unknown Affiliation	2006	Outside
SB-04791	*Historical/ Archaeological Resources Survey Report: Tentative Tract Map No. 17915, in the City of Hesperia, San Bernardino County, California*	Jacquemain, Terri and Smallwood, Josh: Unknown Affiliation	2006	Outside
SB-04975	*Historical/Archaeological Resources Survey Report: Baldy Mesa Water District Arsenic Treatment Project, Cities of Victorville and Hesperia, San Bernardino County, California*	Wetherbee, Matthew: CRM Tech	2005	Outside
SB-05216	*Results of a Phase 1 Cultural Resources Investigation for the Proposed Wal-Mart Supercenter Approximately 38 Acres in the City of Hesperia, San Bernardino County, California*	Mckenna, Jeanette: Unknown	2006	Outside
SB-05218	*A Cultural Resources Assessment of TT 17243, a 30-Acre Parcel Located Northeast of the Intersection of Topaz Avenue and Mesa Street, City of Hesperia, San Bernardino County, California*	White, Robert S. and White, Laura S.: Archaeological Associates	2005	Outside
SB-06652	*Preliminary Archaeological Survey Report for 98 Linear Miles of the East Branch Extension of the California Aqueduct for the DWR East Branch Enlargement Project Los Angeles and San Bernardino Counties (California)*	ESA: Unknown	2010	Outside
SB-06858	*Cultural Resources Study: Main Street Corridor Project, City of Hesperia, San Bernardino County, California*	Smallwood, Josh: Ecorp	2010	Outside
SB-06859	***Identification and Evaluation of Historic Properties: Town of Apple Valley and City of Hesperia Wastewater Reclamation Plants and Related Facilities Project, Victor Valley Area, San Bernardino County, California***	**Tang, Bai "Tom", Terri Jacquemain, Daniel Ballester, and Harry Quinn: CRM Tech**	**2010**	**Overlapping**
SB-07118	*Phase I Cultural Resource Survey St. Mary Medical Center-Oasis Project, City of Victorville, San Bernardino County, California*	Said, Arabesque, Michael Dice, and Kenneth J. Lord: Michael Brandman Associates	2011	Outside
SB-07156	*Historical/Archaeological Resources Survey Report: Water Supply System Improvements Projects, Fiscal Years 2010/2011 – 2014/2015, Victorville Water District, San Bernardino County, California*	Tang, Bai "Tom", Daniel Ballester, and Nina Gallardo: CRM Tech	2011	Outside

Report No.	Study Title	Author and Affiliation	Year	Relationship to Project Area
SB-07402	*Cultural Resource Records Search Results for Verizon Wireless Candidate "Mesa Street", Unaddressed Parcel, APN: 0405-331-22-0000, Victorville, San Bernardino County, California*	Bonner, Wayne H. and Sarah A. Williams: Michael Brandman Associates	2012	Outside
SB-07481	*Identification and Evaluation of Historic Properties: Town of Apple Valley Force Mains and Percolation Basins Project and City of Hesperia Recharge Basins and Lift Station Project, Victor Valley Area, San Bernardino County, California*	Hogan, Michael, Bai "Tom" Tang, Terri Jacquemain, Daniel Ballester, and Harry Quinn: Unknown Affiliation	2012	Outside
SB-07494	*G.O. 131-D Victor-Aqueduct-Phelan 115kV Replacement Project*	Clark, Fatima V. and Dave Hanna: Southern California Edison	2013	Outside
SB-07495	*Cultural Resource Assessment for the Mojave Water Agency Groundwater Regional Recharge and Recovery (R3) Project, San Bernardino County, California*	Gust, Sherri and Molly Valasik: Cogstone	2011	Outside
SB-07496	*Monitoring Compliance Report for Construction of the Mojave Water Agency Regional Recharge and Recovery (R3) Project, San Bernardino County, California*	Gust, Sherri and Courtney Richards: Cogstone	2012	Outside
SB-07840	*Addendum to Identification and Evaluation of Historic Properties: Town of Apple Valley Force Mains and Percolation Basins Project and City of Hesperia Recharge Basins and Lift Station Project, Victor Valley Area, San Bernardino County, California*	Tang, Bai "Tom": CRM Tech	2014	Outside
SB-07845	*Cultural Resource Records Search and Site Visit Results for T-Mobile West, LLC, Candidate IE24883A (IE883 M5-T2 Lugo SCE), 9950 Pyrite Avenue, Hesperia, San Bernardino County, California*	Bonner, Wayne H., Sarah A. Williams, and Kathleen A. Crawford: EAS	2014	Outside
SB-07846	*Direct APE Historic Architectural Assessment for T-Mobile West, LLC, Candidate IE24883A (IE883 M5-T2 Lugo SCE), 9950 Pyrite Avenue, Hesperia, San Bernardino County, California*	Crawford, Kathleen A.: EAS	2014	Outside
SB-07953	*Cultural Resource Assessment Report Victorville 2 Hybrid Power Project San Bernardino County, California*	Estes, Allen, Thomas Young, Nazih Fino, Aimee Arrigoni, Eric Strother, and James Allan: William Self Associates, Inc.	2007	Outside

Previously Recorded Resources

The records search also identified 21 previously recorded cultural resources within a 1-mile radius of the project area. These resources are all historic in age and include 10 refuse scatters, three transmission lines, one road, four historic-era isolates, and three built environment resources (two buildings and a segment of the East Branch of the California Aqueduct). None of these resources overlap the project area. The results are summarized in Table 3.

Table 3. Previously Recorded Cultural Resources within 1 mile of the Project Area

Primary No. (Trinomial)	Temporal Affiliation	Resource Type	Resource Description	Year Recorded (Recorded By)	Relationship to Project Area
P-36-004251 (CA-SBR-004251H)	Historic-era	Structure	Baldy Mesa Pole Line	1980 (R. Reynolds, SBCM); 1991 (J Petersen, Archaeological Research Unit); 1993 (Kenneth Becker, RMW Paleo); 1993 (Kenneth Becker, RMW Paleo); 2009 (Kathrine Anderson, ESA); 2010 (J Coleman, Solano Archaeological Services); 2011 (Josh Trampier, SRI); 2018 (Carleton Bennett, LSA)	Outside
P-36-004275 (CA-SBR-004275H)	Historic-era	Road	Toll Road – Houghton's Crossing Road	1980 (R. Reynolds); 1991 (Knell, RMW Paleo); 1993 (Becker; Phillips); 2002 (Cotterman); 2010 (Molly Valasik)	Outside
P-36-007743 (CA-SBR-007743)	Historic-era	Site	Refuse scatter	1993 (Kenneth Becker, RMW Paleo); 2019 (D. Dang, Garcia and Associates)	Outside
P-36-007744 (CA-SBR-007744H)	Historic-era	Site	Refuse scatter	1993 (Becker et al.)	Outside
P-36-007745 (CA-SBR-007745H)	Historic-era	Site	Refuse scatter	1993 (Becker et al.)	Outside
P-36-010315 (CA-SBR-010315H)	Historic-era	Structure	Edison Company Boulder Dam–San Bernardino Electrical Transmission Line	1988 (N. Neuenschwander, Peak & Associates, Inc); 1989 (J. Brock, Archaeo Advisory Group); 1993; 1997 (Neal Neuenschwander, Peak & Associates); 1997 (Carrie Wills, WSA); 2006 (Roger Hatheway, Hatheway & Associates); 2008 (Jay K. Sander, Chambers); 2008; 2009 (Stephen Pappas, ECORP); 2010 (J. Howard, ECORP); 2011 (S. Kremkau, SRI); 2011 (Justin Lev-Tov, SRI); 2012 (C. Bodmer, Chambers Group, Inc); 2012 (N. Lawson, CH2M Hill); 2013 (C. Higgins, Far Western); 2013 (M. O'Neill, Pacific Legacy); 2014 (Wendly L. Tinsley Becker, Urbana Preservation & Planning); 2015 (Audry Williams, SCE); 2018 (Carole Denardo, L&L); 2023 (Jared Miles, SWCA)	Outside
P-36-010316 (CA-SBR-010316H)	Historic-era	Structure	Kramer-Victorville Transmission Line	Unknown	Outside
P-36-015472	Historic-era	Site	Site of Hula Ville	1977 (Albert Hurtado); 1982 (James Arbuckle); 2011 (Arabesque A. Said and Michael Dice, Michael Brandman Associates)	Outside

Primary No. (Trinomial)	Temporal Affiliation	Resource Type	Resource Description	Year Recorded (Recorded By)	Relationship to Project Area
P-36-020764	Historic-era	Building	14393 Main St., Hesperia	2009 (Josh Smallwood, ECORP Consulting, Inc.)	Outside
P-36-020765	Historic-era	Building	14602 Main St., Hesperia	2009 (Josh Smallwood, ECORP Consulting, Inc.)	Outside
P-36-021287	Historic-era	Site	Refuse scatter	2006 (Allen Estes and Eric Strother, William Self Associates, Inc.)	Outside
P-36-021289	Historic-era	Site	Refuse scatter	2006 (WSA)	Outside
P-36-021300	Historic-era	Site	Refuse scatter	2007 (Allen Estes and David Buckley, William Self Associates, Inc.)	Outside
P-36-021301	Historic-era	Site	Refuse scatter	2007 (WSA)	Outside
P-36-021304	Historic-era	Site	Refuse scatter	2007 (Allen Estes and David Buckley, William Self Associates, Inc.)	Outside
P-36-021351 (CA-SBR-015913H)	Historic-era	Structure	East Branch of the California Aqueduct	2008 (Jeremy Hollins, URS Corp); 2009 (Katherine Anderson, ESA); 2011 (S. Kremkau, SRI); 2011 (Patricia Ambacher, AECOM); 2011 (Katherine Anderson, ESA); 2012 (M. O'Neill, P. Clarkson, and C. Hagan, Pacific Legacy, Inc.) 2019 (Urbana Preservation & Planning, LLC)	Outside
P-36-021365 (CA-SBR-013724H)	Historic-era	Site	Refuse scatter	2009 (M. Bray, ESA)	Outside
P-36-060846	Historic-era	Isolate	Single glass bottle fragments and hole-in-cap can	1993 (Kenneth Becker and Jodie Phillips, RMW Paleo Associates)	Outside
P-36-060847	Historic-era	Isolate	Glass bottle base	1993 (Kenneth Becker and Jodie Phillips, RMW Paleo Associates)	Outside
P-36-060848	Historic-era	Isolate	Bottle fragment	1993 (RMW Paleo)	Outside
P-36-060849	Historic-era	Isolate	Hole-in-cap can	1993 (RMW Paleo)	Outside

Sacred Lands File Search

On August 15, 2024, SWCA received the results of the SLF search from the NAHC. The results letter indicated that the results were positive and recommended contacting the San Manuel Band of Mission Indians and Chemehuevi Indian Tribe. Additional representatives of Native Americans with traditional affiliations to the project area were included on a contact list (see Appendix B). The NAHC recommended that each person be contacted to request any additional information they may have regarding unlisted or potential resources.

SWCA sent outreach letters via email and U.S. Postal Service on March 19, 2025, to the 21 individuals on the NAHC contact list. Follow up emails and/or phone calls will be conducted April 1, 2025, to those individuals that have not responded to the initial outreach effort. A summary of these outreach efforts will be provided below upon conducting the follow up effort.

Table 4. NAHC's Native American Contact List Included with the SLF Results

Name, Title	Affiliation
Lacy Padilla, Director of Historic Preservation/THPO	Agua Caliente Band of Cahuilla Indians
Christina Swindall Martinez, Secretary	Gabrieleño Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson	Gabrieleño Band of Mission Indians - Kizh Nation
Anthony Morales, Chairperson	Gabrieleno/Tongva San Gabriel Band of Mission Indians
Robert Dorame, Chairperson	Gabrielino Tongva Indians of California Tribal Council
Christina Conley, Cultural Resource Administrator	Gabrielino Tongva Indians of California Tribal Council
Sandonne Goad, Chairperson	Gabrielino/Tongva Nation
Sam Dunlap, Cultural Resource Director	Gabrielino-Tongva Tribe
Charles Alvarez, Chairperson	Gabrielino-Tongva Tribe
Robert Martin, Chairperson	Morongo Band of Mission Indians
Ann Brierty, THPO	Morongo Band of Mission Indians
Manfred Scott, Acting Chairman – Kw'ts'an Cultural Committee	Quechan Tribe of the Fort Yuma Reservation
Jordan Joaquin, President, Quechan Tribal Council	Quechan Tribe of the Fort Yuma Reservation
Jill McCormick, Historic Preservation Officer	Quechan Tribe of the Fort Yuma Reservation
Donna Yocum, Chairperson	San Fernando Band of Mission Indians
Alexandra McCleary, Senior Manager of Cultural Resources Management	San Manuel Band of Mission Indians
Mark Cochrane, Co-Chairperson	Serrano Nation of Mission Indians
Wayne Walker, Co-Chairperson	Serrano Nation of Mission Indians
Nicolas Garza, Cultural Resources Specialist	Twenty-Nine Palms Band of Mission Indians
Christopher Nicosia, Cultural Resources Manager/THPO Manager	Twenty-Nine Palms Band of Mission Indians
Sarah O'Brien, Tribal Archivist	Twenty-Nine Palms Band of Mission Indians

Historical Aerial and Map Review

SWCA reviewed aerial images, available via the University of California, Santa Barbara Aerial Imagery Library (2024) and NETROnline Historic Aerials (2024) dating from 1939 to the present day. The earliest aerial image available for the project area (1939) indicates that the project and the general area was undeveloped. Several unpaved, dirt trails in the area as well what appears to be a paved road in the location of present-day I-15. A dry wash appears to be present directly to the northwest of the project area, and the larger Oro Grande Wash is visible further to the northwest. The next aerial (1952) shows the project area as vacant; however, several small residences with associated dirt roads had been built within the area, including directly to the north of the project area. By 1959 several of the subdivisions east of Tamarisk and the subdivision directly south of the project area had been laid out, although only a few houses were present at this time. By 1968, I-15 appears to have been expanded to its current extent. There were no other discernible changes to the project area or surrounding vicinity visible on this aerial; however, by 1980 the subdivisions surrounding the area contained considerably more residential developments. The project area was still undeveloped at this time. The growth in residential developments in the general area continued through the end of the 1980s and throughout the 1990s. Between 1985 and 1990 the home that was directly to the north of the project area was demolished, and between 2005 and

2009, Topaz Avenue was paved. Throughout the 2020s residential development within the general area has continued, although the project area has remained vacant throughout this time.

SWCA reviewed USGS quadrangles, available via the USGS Historical Topographic Map Explorer (USGS 2024) and NETROnline Historic Aerials (2024), dating from 1902 to 2021. Generally speaking, these maps correspond with the information depicted in the above-referenced aerials; however, they add little additional information that would help characterize the history of the project area. As shown on these topographic maps, the project area has never been developed and the surrounding area was very sparsely developed throughout much of the twentieth century. Beginning in the 1980s, the subdivisions surrounding the project area began to slowly take shape.

Cultural Resource Survey

The results of the field survey indicate that the project area consists of a flat parcel with areas of visible natural erosion and construction-related disturbances including a dirt path with signs of vehicle traffic. Ground visibility was good throughout the project area at approximately 60% to 85%. There is scattered modern refuse throughout the property. The surrounding vegetation included several Joshua trees in varying states of maturity, low-lying seasonal grasses, and sparse shrubs. Sediments across the project area consisted of gray-brown, sandy loam with gravel inclusions. No cultural resources were identified in the project area during the field survey.

Archaeological Sensitivity Assessment

The project area has never been developed as indicated by historic aerial images and topographic maps. The project is located to the north and west of residential subdivisions which were primarily developed between 1980 and the early 2000s. The nearest development to the project area historically included a residential development directly to the north which was present by 1952 and was demolished between 1985 and 1990. Due to the lack of developments within the project area historically, it is expected that historic period archaeological remains would be limited to sparse refuse scatters from opportunistic dumping episodes. This is further supported by the presence of refuse scatters and isolated refuse items identified by the record search within 1 mile of the project area. These types of archaeological deposits generally contain surficial evidence. As such, SWCA finds the project area likely has a low sensitivity for containing historic period archaeological resources.

The project area is located within territory that was once occupied by the Serrano, and although there are seasonal water sources near the area that may have provided important natural resources to Native American groups during parts of the year, there is a lack of permanent and reliable sources of water or other resources. There are no known prehistoric resources within 1 mile of the project area or within the project area, which was intensively surveyed as part of a cultural resource assessment conducted by CRM Tech in 2010 and again as part of this study (Tang et al. 2010). As part of the 2010 study, the soils within the project area were identified as primarily Pleistocene in age, and therefore likely too old to support the preservation of intact archaeological deposits. Although, as discussed in the prehistoric context section, there is some evidence for Pleistocene age occupation of the Mojave Desert, specifically in the China Lake region, no such evidence has yet been found in the vicinity of the project area (Davis 1975). Therefore, SWCA finds the project area likely has a low sensitivity for containing prehistoric archaeological resources.

CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

The cultural resource assessment included an examination of CHRIS records, communication with Native American tribal representatives, archival and background research, a buried site sensitivity assessment, and a pedestrian survey. No archaeological resources were identified within the project area as a result of the assessment. Additionally, SWCA considers the sensitivity for unidentified prehistoric and historic Native American-affiliated archaeological resources to be low and the sensitivity for historic period (non-Native American) archaeological resources to be low. However, archaeological resources, while unanticipated, are unpredictable and the possibility of encountering as-yet unidentified archaeological resources within the project area cannot be completely ruled out.

In the event that potentially significant archaeological materials are encountered during construction, all work must be halted in the vicinity of the discovery until a cultural resource specialist meeting the Secretary of Interior's Professional Qualification Standards for archaeology (National Park Service 1983) can evaluate the find. If the discovery proves to be eligible for listing on the CRHR, then additional work, such as data recovery excavations, may be warranted to reduce the impacts under CEQA. Additionally, Health and Safety Code Section 7050.5, CEQA Guidelines Section 15064.5(e), and PRC Section 5097.98 mandate the process to be followed in the unlikely event of the discovery of human remains. Finally, if the project area is expanded to include areas not covered by this study or other recent cultural resource investigations, additional studies may be required.

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APPENDIX A

Figures

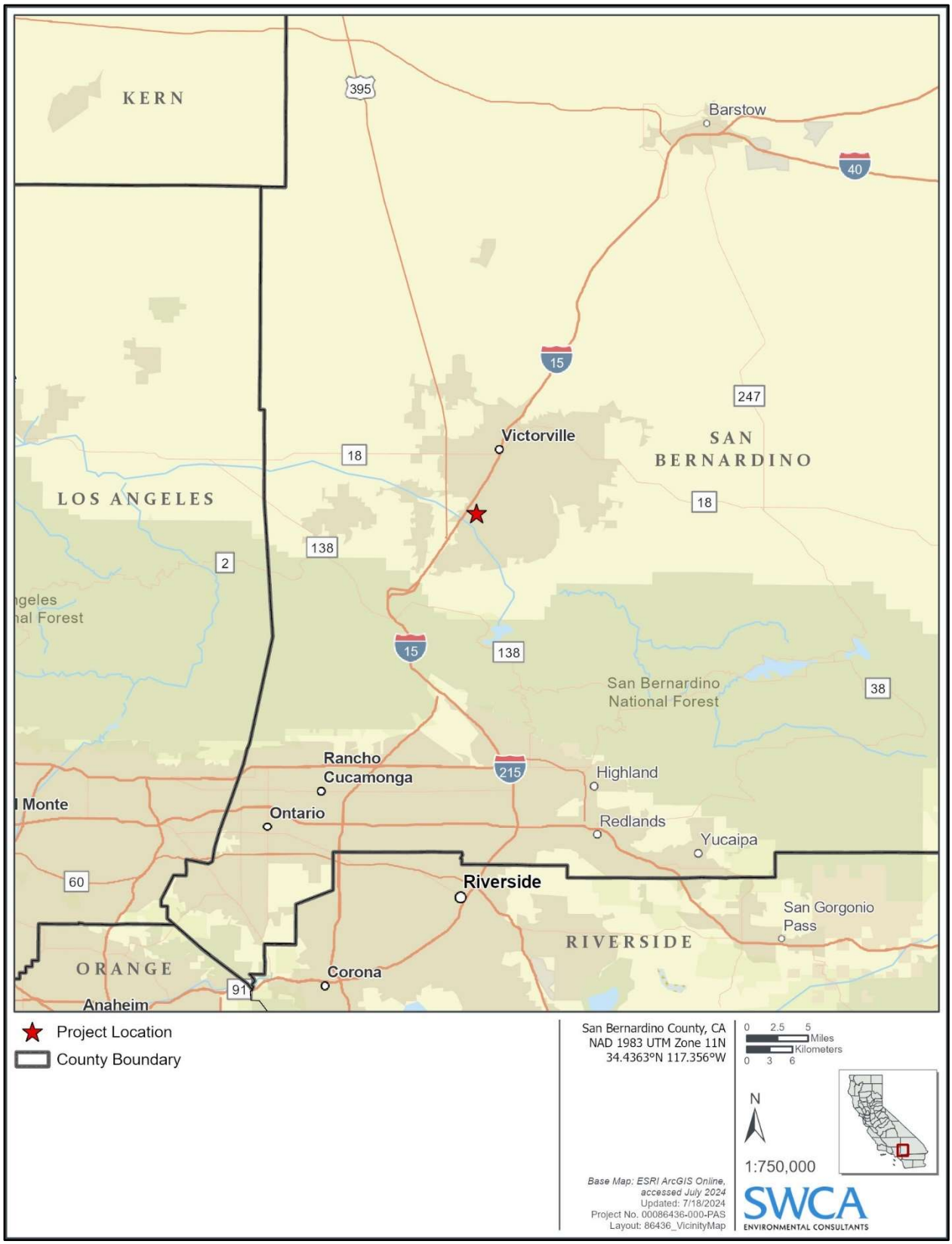

Figure A-1. Project vicinity map.

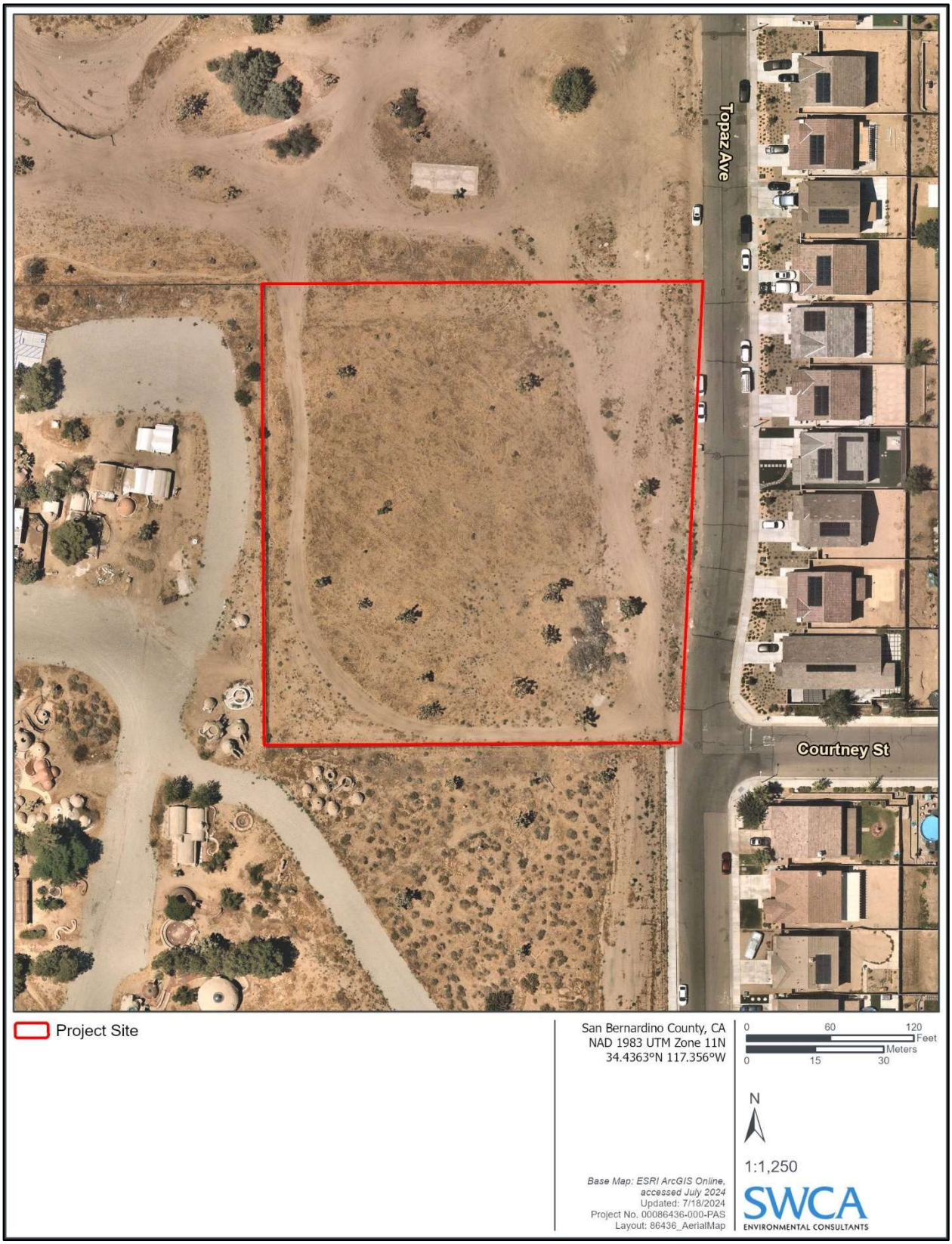

Figure A-2. Project site shown on aerial map.

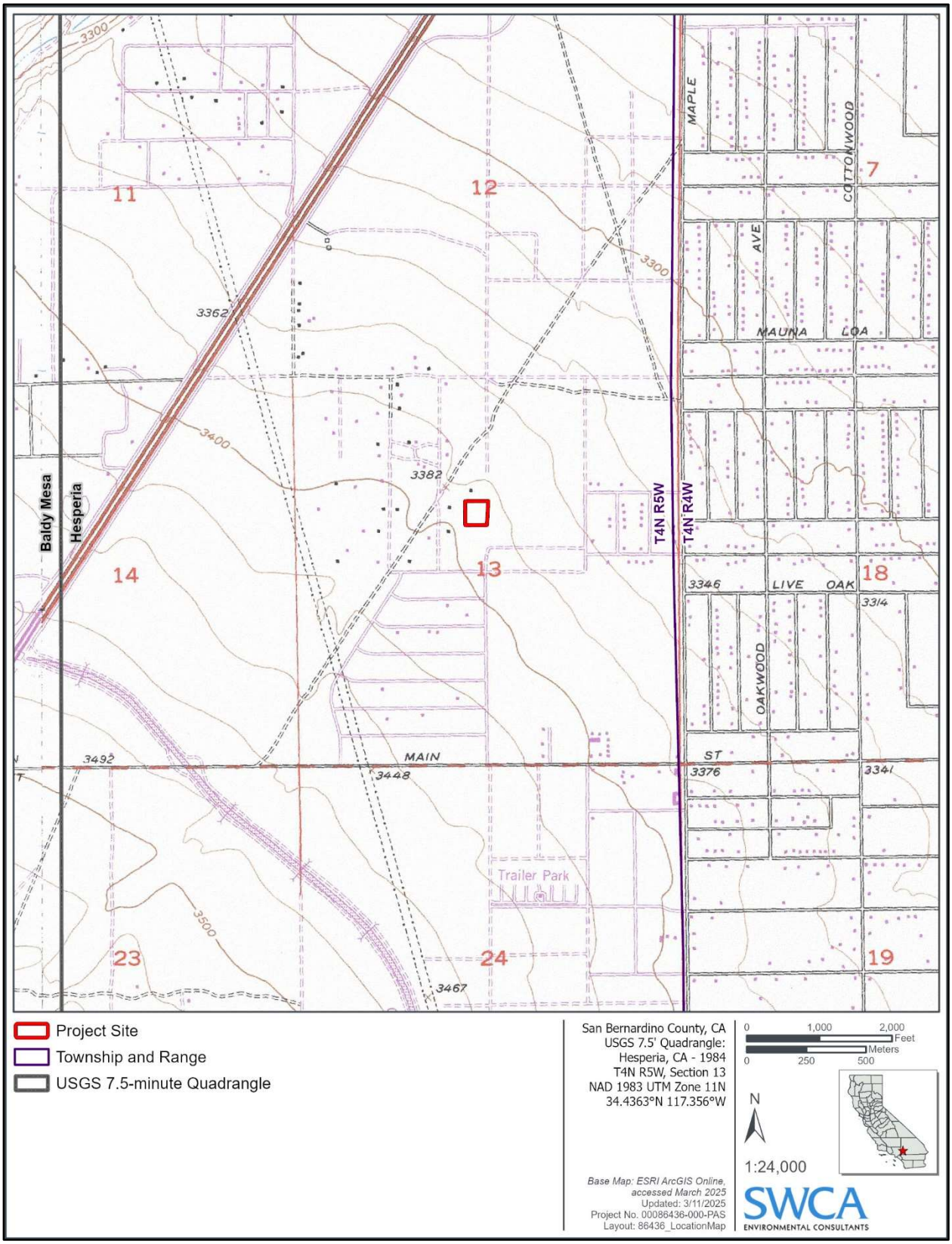

Figure A-3. Project site mapped on the U.S. Geological Survey (USGS) Hesperia, California, quadrangle.

Appendix B

Native American Heritage Commission
Sacred Lands File Search Results

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

August 15, 2024

Erica Nicolay
SWCA Environmental Consultants

Via Email to: erica.nicolay@swca.com

Re: Hesperia Topaz Project (Project Number 86436) Project, San Bernardino County

Dear Ms. Nicolay:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the San Manuel Band of Mission Indians and Chemehuevi Indian Tribe on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

APPENDIX D

Responses to AB25 Tribal Consultation Letters

From:	Raylene Borrego
To:	Edgar Gonzalez
Cc:	Kristen Tuosto
Subject:	RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]
Date:	Monday, March 31, 2025 12:14:29 PM
Attachments:	image001.png image002.png image003.png image004.png

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Hello Edgar,

Thank you for providing an updated cultural report for this project.

Yuhaaviatam of San Manuel Nation (formerly the San Manuel Band of Mission Indians) appreciates the opportunity to review the project documentation, which was received by our Cultural Resources Management Department on March 26th, 2025, pursuant to CEQA (AB 52) and CA PRC 21080.3.1. The proposed project area exists within Serrano ancestral territory and, therefore, is of interest to the Tribe. However, due to the nature and location of the proposed project, and given the CRM Department's present state of knowledge, YSMN does not have any concerns with the project's implementation, as planned, at this time. As a result, YSMN requests that the following language be made a part of the project/permit/plan conditions:

CUL MMs

1. In the event that cultural resources are discovered during project activities, all work in the immediate vicinity of the find (within a 60-foot buffer) shall cease and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work on the other portions of the project outside of the buffered area may continue during this assessment period. Additionally, the Yuhaaviatam of San Manuel Nation Cultural Resources Department (YSMN) shall be contacted, as detailed within TCR-1, regarding any pre-contact finds and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment.

2. If significant pre-contact cultural resources, as defined by CEQA (as amended, 2015), are discovered and avoidance cannot be ensured, the archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to YSMN for review and comment, as detailed within TCR-1. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly.

3. If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code enforced for the duration of the project.

TCR MMs

1. The Yuhaaviatam of San Manuel Nation Cultural Resources Management Department (YSMN) shall be contacted, as detailed in CUL-1, of any pre-contact cultural resources discovered during project implementation, and be provided information regarding the nature of the find, so as to provide Tribal input with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA (as amended, 2015), a Cultural Resources Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with YSMN, and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents YSMN for the remainder of the project, should YSMN elect to place a monitor on-site.

2. Any and all archaeological/cultural documents created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the applicant and Lead Agency for dissemination to YSMN. The Lead Agency and/or applicant shall, in good faith, consult with YSMN throughout the life of the project.

Note: Yuhaaviatam of San Manuel Nation realizes that there may be additional tribes claiming cultural affiliation to the area; however, Yuhaaviatam of San Manuel Nation can only speak for itself. The Tribe has no objection if the agency, developer, and/or archaeologist wishes to consult with other tribes in addition to YSMN and if the Lead Agency wishes to revise the conditions to recognize additional tribes.

Please provide the final copy of the project/permit/plan conditions so that YSMN may review the included language. If you should have any further questions with regard to this matter, please do not hesitate to contact Tribal Archaeologist, Kristen Tuosto (cc'd), or myself, as we will be your Point of Contacts (POC) for YSMN with respect to this project.

Kind Regards,
Raylene

Raylene Borrego
Cultural Resources Technician

From: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Sent: Wednesday, March 26, 2025 3:54 PM
To: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]

Hi Raylene,

The applicant just submitted the Cultural Report, see attached report for your review.

Edgar Gonzalez
Senior Planner

Phone: 760.947.1330
Email: egonzalez@cityofhesperia.us

City of Hesperia
9700 Seventh Avenue
Hesperia, CA 92345

https://www.cityofhesperia.us

From: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Sent: Friday, March 21, 2025 3:05 PM
To: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]

Hello Edgar,

I just wanted to follow up on the above referenced project. Has the applicant provided an updated (less than 10 years old) cultural report?

Kindly,
Raylene

Raylene Borrego
Cultural Resources Technician

From: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Sent: Tuesday, December 17, 2024 4:35 PM
To: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]

Hi Raylene,

Thank you for your review, I will let the applicant know and will get back to you with an updated or a new cultural report.

Edgar Gonzalez
Senior Planner

Phone: 760.947.1330
Email: egonzalez@cityofhesperia.us

City of Hesperia
9700 Seventh Avenue
Hesperia, CA 92345

https://www.cityofhesperia.us

From: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Sent: Tuesday, December 17, 2024 4:08 PM
To: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]

Hello Edgar,

Thank you again for providing project documents to the shared folder. I noticed the only cultural report that's within the project area is from 2010, unfortunately, that report is no longer valid as it is older than 10 years. A more recent cultural report or an addendum to the provided cultural report is needed. YSMN requests an updated cultural report to review upon availability.

Please let me know if you have any questions.

Thank you,
Raylene

Raylene Borrego
Cultural Resources Technician

From: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Sent: Tuesday, December 17, 2024 7:11 AM
To: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-

2024-13]

Hi Raylene,

I uploaded the documents on the link provided.

Edgar Gonzalez
Senior Planner

Phone: 760.947.1330
Email: egonzalez@cityofhesperia.us

City of Hesperia
9700 Seventh Avenue
Hesperia, CA 92345

https://www.cityofhesperia.us

From: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Sent: Monday, December 16, 2024 4:20 PM
To: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]

Hello Edgar,

Thank you for providing this link. Unfortunately, I cannot access anything from Dropbox. Can you please upload requested documents to this folder?

Kindly,
Raylene

Raylene Borrego
Cultural Resources Technician

From: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Sent: Monday, December 16, 2024 11:44 AM
To: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: RE: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]

Hi Raylene,

See link below for requested documents that were provide by the applicant. Let me know if you need anything else.

https://www.dropbox.com/scl/fo/ev59dx9fefs8nocyquw4v/ABQ2ViDZ8XS2td-DyaDncPY?rlkey=7xbs2cshaeia2fw0gq0xrwy2s&st=wdizttm2&dl=0

Edgar Gonzalez
Senior Planner

Phone: 760.947.1330
Email: egonzalez@cityofhesperia.us

City of Hesperia
9700 Seventh Avenue
Hesperia, CA 92345

https://www.cityofhesperia.us

From: Raylene Borrego <Raylene.Borrego@sanmanuel-nsn.gov>
Sent: Tuesday, December 10, 2024 3:30 PM
To: Edgar Gonzalez <egonzalez@hesperiaca.gov>
Cc: Kristen Tuosto <Kristen.Tuosto@sanmanuel-nsn.gov>
Subject: Response to AB52: Tentative Tract Project, 7 Single-family Residential Lots and 1 Common Letter Lot on 2.38 Gross Acres, APNs: 0405-556-01, -02, -03, -04, -05, -06, -07; [CIT-HESP-2024-13]

> You don't often get email from raylene.borrego@sanmanuel-nsn.gov. Learn why this is important

Dear Edgar,

Thank you for contacting the Yuhaaviatam of San Manuel Nation (formerly the San Manuel Band of Mission Indians) regarding the above referenced project. YSMN appreciates the opportunity to review the project documentation, which was received by our Cultural Resources Management Department on December 9th, 2024, pursuant to CEQA (AB 52) and CA PRC 21080.3.1. The proposed project area is located within Serrano ancestral territory and, therefore, is of interest to the Tribe.

Due to the nature and location of the proposed project, YSMN respectfully requests the following for review upon availability:

- Cultural report (including DPR forms if sites are identified)

- Geotechnical report (if required for the project)
- Project plans showing the depth of proposed disturbance
- Shape files of the project location

The provision of this information will assist Yuhaaviatam of San Manuel Nation in ascertaining how the Tribe will assume consulting party status under CEQA and participate, moving forward, in project review and implementation. Please note that if this information cannot be provided within the Tribe's 30-day response window, the Tribe automatically elects to be a consulting party under CEQA, as stipulated in AB52. If you should have any questions with regard to this matter, please do not hesitate to contact Tribal Archaeologist, Kristen Tuosto, cc'd, or myself, as we will be your Point of Contacts (POC) for YSMN with respect to this project.

Regards,
Raylene

Raylene Borrego
Cultural Resources Technician
Raylene.Borrego@sanmanuel-nsn.gov
O:(909) 864-8933 x 50-2035
M:(909) 737-3349
26569 Community Center Dr Highland, California 92346

APPENDIX E

Mitigation Monitoring and Reporting Program

1 MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Topaz Residential Project (project) based on the findings of the Initial Study/Mitigation Negative Declaration (IS/MND) prepared for the project.

1.1 STATUTORY REQUIREMENTS

When a Lead Agency makes findings on significant environmental effects identified in an Mitigated Negative Declaration (MND), the agency must also adopt a "reporting or monitoring program for the changes to the project which it has adopted or made a condition of approval in order to mitigate or avoid significant effects on the environment" (Public Resources Code [PRC] Section 21081.6(a) and California Environmental Quality Act [CEQA] Guidelines Sections 15091(d) and 15097). The Mitigation Monitoring and Reporting Program (MMRP) is implemented to ensure that the mitigation measures and project revisions identified in the IS/MND are implemented. Therefore, the MMRP must include all changes in the project either adopted by the project proponent or made conditions of approval by the Lead or Responsible Agency.

1.2 ADMINISTRATION OF THE MITIGATION MONITORING AND REPORTING PROGRAM

The City of Hesperia (City) is the Lead Agency responsible for the adoption of the MMRP. The San Luis Concrete Corp. (Applicant), is responsible for implementation of the MMRP, in coordination with the City and other identified entities. According to State CEQA Guidelines Section 15097(a), a public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity that accepts the delegation. The City may delegate responsibility for verifying and documenting compliance with the MMRP to the Applicant as coordinator of the project and its construction, and the Applicant will be responsible for compliance. However, until mitigation measures have been completed, the City, as the Lead Agency, remains responsible for ensuring that the implementation of the measures occurs in accordance with the program.

1.3 MITIGATION MEASURES

The MMRP table below is structured to enable quick reference to mitigation measures and the associated monitoring program based on the environmental resource. The numbering of mitigation measures correlates with numbering of measures found in the corresponding environmental analysis provided in the project's IS/MND. The table also describes the timing for mitigation measure implementation (e.g.., when the measure shall be implemented) and the responsible parties—such as the Construction Contractor, Applicant, and/or City of Hesperia—that are responsible for ensuring implementation of all aspects of each measure.

Table 1. Mitigation Monitoring and Reporting Program

Mitigation Measure	Requirements of Measure	Compliance Method	Verification Timing	Responsible Parties
BIO-1	**Project Biological Monitor.** At the time of application for grading permits, the project applicant shall retain a qualified biological monitor(s) and include the monitor's credentials with grading permit application materials submitted to the City. Biological monitoring shall be performed during initial laydown and ground disturbance of any new portion of the project area, including grubbing and grading, during project construction activities. The biological monitor(s) shall have sufficient education and field experience to understand resident wildlife species biology; have experience conducting botanical and wildlife surveys in desert ecosystems. To avoid and minimize effects on biological resources, the biological monitor(s) shall be responsible for the following: a. Be present during initial laydown and ground disturbance of any new portion of the project area, including grubbing and grading, that take place in suitable habitat for desert tortoise, burrowing owl, badger, Crotch's bumble bee, coast horned lizard, rare plants or other protected species to prevent or minimize harm or injury to these species. b. Activities of the biological monitor(s) include, but are not limited to, ensuring compliance with all avoidance and minimization measures; halting construction activity in the area if a special-status species is found; and verifying that disturbance areas are marked with staking or flagging and that construction activities stay within the staked/flagged limits. c. If desert tortoise, burrowing owl, American badger, or other protected species are found within a work area, the biological monitor(s) shall halt work in the vicinity; if impacts to a special-status species cannot be avoided, the biological monitor(s) will immediately notify the relevant agency(ies), who shall determine measures to be taken to ensure that the individual is not harmed. This may result in the need for the project applicant to apply for an incidental take permit (ITP). d. Inspect the study area for any special-status wildlife species and active bird nests. e. In the event of the discovery of a non-listed, special-status ground-dwelling animal, recover and relocate the animal to adjacent suitable habitat at least 200 feet from the limits of construction activities.	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia

	f. At the end of each work day, inspect all potential wildlife pitfalls (e.g., trenches, bores, other excavations) for wildlife and remove wildlife as necessary. If the potential pitfalls will not be immediately backfilled following inspection, the biological monitor(s) will ensure that the construction crew slopes the ends of the excavation (3:1 slope), provides wildlife escape ramps, or completely and securely covers the excavation to prevent wildlife entry. Handling of special-status species will be conducted only if the biologist and project have all required authorizations from the California Department of Fish and Wildlife (CDFW) and/or the U.S. Fish and Wildlife Service (USFWS). g. Inspect the site to ensure trash and food-related waste is placed in closed-lid containers and that workers do not feed wildlife. Ensure that pets are not allowed on site prior to or during construction to minimize disturbances to wildlife. Also inspect the work area each day to ensure that no microtrash (e.g., bolts, screws, etc.) is left behind.			
BIO-2	**Worker Environmental Awareness Program.** Prior to the onset of construction activities, the project biological monitor shall provide Worker Environmental Awareness Program (WEAP) training. Any employee responsible for the construction, operation, and/or maintenance of the project shall attend the WEAP. The WEAP will be developed by a qualified biologist and all training materials shall be submitted to the City with a copy of the names of all staff who attended prior to the onset of construction activities. The WEAP shall include the following content: a. The program will include information on the life history of sensitive biological resources that may occur within the project area, including western Joshua tree and other listed or special-status species that could be present on-site. b. The program will discuss each species' legal protection status, the definitions of take under the California Endangered Species Act (CESA) and the federal Endangered Species Act (FESA), measures the project operator is implementing to protect the species, reporting requirements, specific measures that each worker will employ to avoid take of wildlife species, and penalties for violation of the CESA and the FESA. c. An acknowledgement form signed by each worker indicating that environmental training has been completed will be kept on record. d. A sticker will be placed on worker hard hats upon the worker's successful environmental training completion. Construction workers will not be permitted to operate vehicles or equipment within the construction areas unless	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia

	they have attended the training and are wearing hard hats with the required sticker. e. The WEAP will identify a point of contact if a listed or special-status species is observed on the project site.			
BIO-3	**Western Joshua Tree Monitoring.** The biological monitor(s) shall be responsible for the following: a. All western Joshua tree avoidance buffer(s) shall be established before the start of any activity. These buffers shall be established specifically for the Joshua trees located outside of the project site but within the study area buffer. The biological monitor(s) shall be present at the initial tailboard meeting to discuss any biological issues with the crew, and as needed, for monitoring. b. Ground and vegetation disturbance within 50 feet of a western Joshua tree shall be avoided if possible, and minimized where it cannot be avoided.	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant and Construction Contractor **Verification:** City of Hesperia
BIO-4	**Western Joshua Tree Avoidance, Minimization, and Mitigation.** If ground disturbance within 50 feet of western Joshua trees cannot be avoided, then the project applicant shall consult with the California Department of Fish and Wildlife (CDFW) and, if recommended, apply for an Western Joshua Tree Conservation Act (WJTCA) permit. The project applicant shall pay the required compensatory mitigation fee and implement all avoidance, minimization, and reporting requirements in the permit.	Monitor compliance with measures including setback distances. If necessary, prepare a WJTCA permit.	Prior to issuance of grading permits	**Implementation:** Applicant and Construction Contractor **Verification:** CDFW
BIO-5	**Designated Work Areas.** All project work activities shall be limited to designated work areas. To the greatest extent possible, crews shall confine work areas to previously disturbed areas. The project applicant shall clearly delineate the boundaries of the project area with fencing, stakes, or flagging, as necessary, to remain in place throughout the duration of project construction activities.	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Construction Contractor **Verification:** City of Hesperia
BIO-6	**Vehicles and Staging.** Throughout all project construction activities, vehicles shall be staged or stored at least 50 feet from any western Joshua trees, unless take of that tree is authorized by the California Department of Fish and Wildlife (CDFW).	Monitor compliance with measures including setback distances. If necessary, prepare a WJTCA permit.	Prior to issuance of grading permits	**Implementation:** Construction Contractor **Verification:** CDFW
BIO-7	**Hazardous Waste.** The permittee will immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. The permittee will exclude the storage and handling of hazardous materials from the project area and will properly contain and dispose of any unused or leftover hazardous products off-site.	Monitor compliance with Construction General Best Practices.	During construction activities on the project site	**Implementation:** Construction Contractor **Verification:** City of Hesperia
BIO-8	**Dust Control.** Control of dust will be implemented during construction activities. The primary mechanism for dust control will be the use of water trucks with a spray bar and hose(s). Proactive	Monitor compliance with Construction General Best Practices.	During construction activities on the project site	**Implementation:** Applicant and Construction Contractor

	controls will be instituted to reduce the amount of dust generated during site activities, including enforcement of low speed limits (below 15 mph) for vehicular traffic, decontamination of trucks leaving the remediation work areas, and a 5-foot height limit for temporarily stockpiled material.			**Verification:** City of Hesperia
BIO-9	**Refuse Removal.** Upon completion of each project component, all remaining materials and equipment will be removed from the site.	Monitor compliance with Construction General Best Practices.	During construction activities on the project site	**Implementation:** Construction Contractor **Verification:** City of Hesperia
BIO-10	**Invasive Plants.** To prevent the spread of invasive plants that have the potential to outcompete native plant species, all vehicles and any ground- or vegetation-disturbing equipment and tools will be cleaned free of mud, soil, and plant material before entering the project site for the first time, and any time after driving off pavement outside the project site. Cleaning can be through car washes, compressed air, pressure washes, brushes, or similar equipment.	Prevent spread of invasive plant species to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits, during construction	**Implementation:** Construction Contractor **Verification:** City of Hesperia
BIO-11	**Beaver Dam Breadroot Avoidance, Minimization, and Mitigation.** Prior to any vegetation removal or ground-disturbing activities, focused surveys shall be conducted during the blooming period (April and May) or during other periods when beaver dam breadroot is identifiable to determine whether beaver dam breadroot is present within the proposed areas of disturbance of the project. Surveys shall be conducted in accordance with the California Department of Fish and Wildlife's (CDFW's) Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Surveys shall be conducted by a qualified botanist experienced in conducting floristic botanical field surveys, knowledgeable of plant taxonomy and plant community ecology and classification, familiar with the plants of the area, including special-status and locally significant plants, and familiar with the appropriate state and federal statutes related to plants and plant collecting. If no beaver dam breadroot is found on the project site during an appropriately timed survey, no additional mitigation measures are necessary. If beaver dam breadroot is found on the project site, the following measures shall be implemented: a. A qualified botanist shall evaluate the feasibility of avoiding direct impacts to beaver dam breadroot and all impacts to beaver dam breadroot shall be avoided to the greatest extent feasible. In addition to avoiding direct impacts to beaver dam breadroot, potential indirect impacts during project construction and project operation shall be minimized to the maximum extent feasible through means including, but not limited to, the installation of protective fencing and environmentally sensitive area signage. Additionally, the Worker Environmental Awareness Program (WEAP) shall address beaver dam breadroot, in	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia

addition to other sensitive resources in and near the project site.

b. If beaver dam breadroot is found on-site and cannot be avoided, the project applicant shall consult with the California Department of Fish and Wildlife (CDFW) to mitigate the loss of the plant(s) through purchase of mitigation credits from a CDFW-approved bank and/or land acquisition and conservation at a mitigation ratio determined by CDFW after project analysis. Through consultation with CDFW, the project applicant shall determine feasible impact minimization and mitigation measures for this special-status species and implement mitigation measures to reduce impacts to less than significant, which may include, but are not limited to, one or more of the following mitigation strategies:

    1. Habitat restoration to mitigate for unavoidable temporary construction impacts to habitat supporting special-status plants on-site.
    2. In conjunction with academic institutions and/or regional native plant nurseries, and following consultation with CDFW, a propagation program may be developed for the salvage and transfer of special-status plant populations known to succeed after transplantation, from the project site before the initiation of construction activities. Propagation methods for the salvaged plant population must be developed on a case-by-case basis and must include the involvement of local conservation easements/preserves/open space, where applicable). The propagation of individual plant species must be performed at the correct time of year and successfully completed before project construction activities eliminate or disturb the plants and habitats of concern.
    3. Efforts may be made to salvage portions of the habitat or plant populations that could be lost as a result of implementation of the proposed project. In addition to salvaging special-status plants, such as beaver dam breadroot plants themselves, salvage efforts shall include soil and seedbanks surrounding impacted plants, if doing so will not contribute to the spread of invasive or noxious plant species.
    4. Appropriate off-site conservation opportunities may be identified and, if feasible, protected in perpetuity through conservation easements and/or purchase of mitigation bank credits from a CDFW-approved bank at a mitigation ratio

	determined by CDFW. The habitat value of off-site conservation areas shall be enhanced where feasible through means such as reducing grazing intensity and restricting off-highway vehicle access. The acreage of off-site habitat conserved shall meet or exceed a 1:1 ratio of impacted rare plant habitat on the project site and the final required mitigation ratio will be determined by CDFW during consultation based on factors such as the quality and area of habitat being impacted. If beaver dam breadroot is found on-site and the above-stated off-site mitigation measures are implemented, the project applicant shall design and implement a monitoring program to evaluate compliance with and the effectiveness of these mitigation measures. The monitoring program shall be conducted by a qualified botanist, and shall take place periodically during project construction, and annually, following the completion of construction, for 5 years. The project applicant shall bear the financial responsibility for mitigation measure monitoring and reporting for the entirety of the 5-year reporting period. If the monitoring program identifies mitigation measure noncompliance or ineffectiveness, the project applicant shall fund and implement remedial measures. The project applicant shall ensure that sufficient funding exists to complete all reasonably foreseeable remedial actions prior to the commencement of project construction. Annual monitoring reports shall be submitted to CDFW.			
BIO-12	**Desert Tortoise Avoidance, Minimization, and Mitigation.** Focused surveys for desert tortoise shall be conducted prior to vegetation clearance and ground-disturbing activities. These surveys shall be conducted when tortoises are most active (April–May or September–October) by qualified biologists in accordance with U.S. Fish and Wildlife Service's (USFWS's) *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009). If desert tortoise is not detected during the preconstruction surveys, then construction may commence without any further actions. If desert tortoise is detected during the preconstruction surveys, and if it is determined that impacts to desert tortoise cannot be avoided and may result in incidental take of the species, the following mitigation measures shall be implemented, at a minimum: a. Consultation with the California Department of Fish and Wildlife (CDFW) and USFWS shall occur and an incidental take permit (ITP) shall be secured from USFWS and CDFW if take of desert tortoise habitat (as defined by the federal Endangered Species Act) cannot be avoided. An ITP would ensure that any impacted habitat is offset with mitigation habitat at a ratio to be determined in consultation with USFWS and CDFW. If required, all permit conditions would be as followed.	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** USFWS

b. Prior to the onset of construction activities, the project proponent should provide a Worker Environmental Awareness Program (WEAP) training, as described under Mitigation Measure BIO-2. The WEAP shall be developed by a qualified biologist and shall include information on the life history of desert tortoise and protocol for if the species is observed on the project site.

c. The project applicant shall retain a qualified biologist with demonstrated expertise with desert tortoise to monitor all construction activities and assist the project applicant in the implementation of the monitoring program. The biologist shall be approved by USFWS and CDFW prior to the commencement of project activities. The biologist shall be present during all activities immediately adjacent to or within habitat that supports desert tortoise.

d. The project applicant shall coordinate with USFWS and CDFW to determine whether desert tortoise fencing is needed. If required, the work areas would be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The qualified approved biologist shall assist in determining the boundaries of the area to be fenced in consultation with USFWS and CDFW. All workers shall be advised that equipment and vehicles must remain within the fenced work areas. Installation of the fencing and any necessary surveys shall be directed and/or conducted by the approved biologist in concurrence with USFWS and CDFW, as applicable.

e. A qualified biologist shall be on-site to survey for tortoises prior to vegetation clearance and grubbing of the project site fence line during fence installation to ensure that desert tortoises and active burrows are not impacted. Limited vegetation clearing activity, such as removal of individual Joshua trees for translocation shall be permitted prior to the installation of the fencing, provided that a qualified biologist conducts a survey for tortoises and their burrows immediately in front of each motor vehicle and site(s) of vegetation clearance. In the event that tortoises or active burrows are discovered, all work shall be immediately halted within a 500-foot radius of the tortoise or burrow.

f. If desert tortoises are found within an area that has been fenced to exclude the species, activities will cease within 500 feet of the tortoise(s). If permitted by USFWS and CDFW, the approved biologist may move the desert tortoise(s). If desert tortoises are found in a construction area where fencing was deemed unnecessary, work will cease until the approved biologist moves the individual(s) or the tortoise(s) leave on their own.

	g. If an injured or dead tortoise is encountered during construction, or if any desert tortoise is injured or killed, all construction activities within 500 feet of the vicinity shall be halted and the approved biologist immediately contacted. The biologist shall have the responsibility for contacting the USFWS and the CDFW. h. The approved biologist shall remain on-site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a regular (monthly) schedule throughout construction in order to ensure that the project is in compliance with the mitigation measures. i. The approved biologist shall remain on-call throughout construction in the event a tortoise occurs on the site during construction. j. Employees and contractors shall be required to look under vehicles and equipment for the presence of wildlife prior to moving vehicles and equipment. If present, the animal shall be left to move on its own or until it is removed by the approved biologist. No listed species shall be handled without concurrence from USFWS and/or CDFW, as applicable. If an ITP is required, a Habitat Mitigation and Monitoring Plan shall be prepared that outlines all of the compensatory mitigation required for the project; the plan may cover multiple species. The plan should identify the compensatory mitigation lands and the conservation actions proposed to ensure that they are managed to ensure the continued existence of all species covered by the plan. The plan shall include the funding assurances for long-term management of the mitigation lands. The plan shall be submitted to USFWS and/or CDFW, as applicable, as well as the City of Hesperia prior to initiation of project construction activities.			
BIO-13	**Coast Horned Lizard Protection Measures.** To avoid potential impacts to coast horned lizard, a qualified biologist will conduct a preconstruction clearance survey on the day that construction activities—including vehicular access and grading activities—begin within the project site where suitable habitat is present. The preconstruction survey shall be conducted by a qualified biologist familiar with coast horned lizard and survey methods, and with appropriate permits to relocate horned lizards out of harm's way. The scope of the survey shall be determined by a qualified biologist and shall be sufficient to determine presence or absence in the project areas. If coast horned lizards are found to be present in the proposed work areas during the preconstruction survey, the following steps shall be taken: a. See BIO-1 (f.)	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia

BIO-14	**Crotch's Bumble Bee Avoidance, Minimization, and Mitigation**. At the time of application for building permits, the project applicant shall prepare and submit a Preconstruction Survey Plan identifying the timing and methodology of surveys to be conducted for Crotch's bumble bee to the City of Hesperia and the California Department of Fish and Wildlife (CDFW) for review. Preconstruction surveys for Crotch's bumble bee shall be conducted by a qualified biologist prior to vegetation clearance and ground-disturbing activities in accordance with CDFW's *Survey Considerations for CESA Candidate Bumble Bee Species* (CDFW 2023). Preconstruction surveys shall occur no less than 15 days prior to the initiation of ground-disturbing activities scheduled to occur during the following lifecycle periods: • Queen flight seasons, when queens emerge in the spring searching for nest sites (February–March); • Gyne flight season, when gynes mate and search for overwintering habitat (September–October); and • The colony active period when nests are detectable (April–August). The Preconstruction Survey Plan shall provide justification for timing and method of survey design (e.g., elevation, climatic conditions, previous year's precipitation, average ambient temperature, species Colony Active Period and Queen/Gyne Flight Season, etc.). It shall also include the identification protocol(s) for Colony Active Period surveys. If photographs will be used as vouchers, the Preconstruction Survey Plan must identify the person(s) who will provide positive identification. a. If Crotch's bumble bee nests are detected on-site, then the establishment of a 50-foot avoidance buffer will be implemented under the discretion of a biological monitor. b. If it is determined that impacts to Crotch's bumble bee cannot be avoided and the project may result in incidental take of the species, then the project applicant shall be required to complete consultation with CDFW, and may be required to apply for an incidental take permit (ITP) pursuant to CESA to continue work within the buffer until senescence. Additional mitigation measures may be required as part of the ITP process. An incidental take permit would ensure that any impacted habitat or nests is offset with mitigation habitat at a ratio to be determined in consultation with CDFW.	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia
BIO-15	**American Badger Protection Measures.** To avoid direct impacts to American badger, preconstruction surveys shall be conducted for this species no more than 30 days prior to the start of construction activities. Surveys shall be conducted as described below: a. Biological monitors shall perform preconstruction surveys for badger dens in the project disturbance area, including a 20-foot buffer beyond the disturbed area, utility corridors,			

	and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active. b. Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers. c. Potentially and definitely active dens that would be directly impacted by construction activities shall be monitored by the biological monitor for 3 consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. d. If no tracks are observed in the tracking medium or no photos of the target species are captured after 3 consecutive nights, the den shall be excavated and backfilled by hand. e. If tracks are observed, the den shall be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage the badger from continued use. After verification that the den is unoccupied it shall then be excavated and backfilled by hand to ensure that no badgers are trapped in the den. f. If an active natal den is detected on the site, the California Department of Fish and Wildlife (CDFW) shall be contacted within 24 hours to determine the appropriate course of action to minimize the potential for harm or mortality. The course of action would depend on the age of the cubs, location of the den on the site (e.g., is the den in a central area or in a perimeter location), status of the perimeter site fence (completed or not), and the pending construction activities proposed near the den. A 500-foot no-disturbance buffer shall be maintained around active natal dens.			
BIO-16	**Burrowing Owl Avoidance, Minimization, and Mitigation.** No more than 14 days prior to the start of ground disturbance, a preconstruction survey for burrowing owls in conformance with the California Department of Fish and Wildlife (CDFW) *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) shall be completed within suitable habitat at every work area and within a 150-m buffer zone of each work area. Work areas shall be resurveyed following periods of inactivity of 2 weeks or more. The project applicant/owner shall submit the results of the preconstruction survey to the City of Hesperia and CDFW. If occupied burrows are identified on-site or within the 150-meter buffer, the following measures shall be implemented: a. No disturbance shall occur within 160 feet (50 m) of occupied burrows during the non-breeding season (September 1–January 31) or within 650 feet (200 m) during the breeding season (February 1–August 31);	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia

	b. Occupied burrows shall not be disturbed during the nesting season (February 1–August 31); c. Unless otherwise authorized by CDFW, a 650-foot buffer within which no activity shall be maintained between project activities and nesting burrowing owls during the nesting season. This protected area shall remain in effect until August 31 or at CDFW's discretion and, based on monitoring evidence, until the young owls are foraging independently. If it is determined that impacts to burrowing owl cannot be avoided and may result in incidental take of the species, the biological monitor(s) shall immediately halt work. The project applicant shall be required to complete consultation with CDFW to apply for an ITP pursuant to CESA. Additional mitigation measures may be required as part of the ITP process.			
BIO-17	**Nesting Bird Surveys and Nest Avoidance.** If site preparation, grading or construction activities are proposed during the typical nesting bird season (February 1¬–September 15), within 1 week prior to ground-disturbing activities, a nesting bird survey shall be conducted by a qualified biologist to determine presence/absence of nesting birds. Surveys shall cover all areas potentially affected by the project via direct impacts (e.g., nest destruction) or indirect impacts (e.g., noise, vibration, odors, movement of workers or equipment, etc.). If absence of nesting birds is verified, construction activities may begin upon submittal of a survey report to the City of Hesperia Planning Department. If nesting activities are detected, the following measures shall be implemented: a. **Buffer Establishment.** If an active bird nest is observed during preconstruction surveys or during construction, a minimum no-disturbance buffer of 250 feet around active nests of non-listed passerine bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors shall be implemented using high visibility markers or fencing. These buffers shall remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. b. **Variance of Buffer Distances.** Variance from the no-disturbance buffers described above may be allowable when there is a compelling biological or ecological reason to do so, such as when the construction area would be concealed from a nest site by topography. Any variance from the no-disturbance buffers shall be advised and supported by a qualified biologist and CDFW shall be notified in advance of implementing a variance. c. **Nest Monitoring.** If nest buffers are reduced, the biologist shall monitor any construction activities that take place within 250 feet of non-listed passerine bird species nests, and 500 feet of non-listed raptor nests. If nesting birds	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia

	show any signs of disturbance, including changes in behavior, significantly reducing frequency of nests visits, or refusal to visit the nest, the biologist will stop work and increase the nest buffer. If appropriate on a case-by-case basis, as determined by the qualified biologist, nest monitoring may be reduced to weekly spot-check monitoring, at a minimum, if the biologist determines that the nesting birds have shown no signs of disturbance from construction activities and a continuation of the same types of construction activities are unlikely to disturb the nesting birds. d. **Nest Removal.** Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code shall not be moved or disturbed until a qualified biologist has determined that the nest has become inactive or young have fledged and become independent of the nest. e. **Reporting.** A qualified biologist shall document all active nests and submit a letter report to the City of Hesperia Planning Department documenting project compliance with the MBTA, California Fish and Game Code, and applicable project mitigation measures.			
BIO-18	**Dead or Injured Special-status Wildlife.** If any dead or injured special-status wildlife are discovered at the proposed project during construction, the project applicant shall stop work in the immediate vicinity. The project applicant will notify the City, the on-call biologist, and the appropriate resource agency (USFWS and/or CDFW) before construction shall be allowed to resume.	Retain a City-approved project biologist to ensure compliance with biological resource mitigation measures	Prior to issuance of grading permits	**Implementation:** Applicant **Verification:** City of Hesperia
CR-1	**Retain a Qualified Archaeologist.** At the time of application for grading or construction permits, whichever occurs first, the project applicant shall submit evidence of retaining a qualified archaeologist for the development and implementation of the worker environmental awareness training to be conducted for all construction personnel as described under Mitigation Measure CR-2, below.	Retain a qualified archaeologist	Prior to issuance of grading or construction permits	**Implementation:** Applicant **Verification:** City of Hesperia
CR-2	**Worker Environmental Awareness Training.** Prior to initial ground-disturbing activities, the project archaeologist shall conduct a brief construction worker awareness training for all construction personnel. This training shall include, but not be limited to, the following information: a. Review the types of archaeological artifacts that may be uncovered; b. Provide examples of common archaeological artifacts to examine; c. Review what makes an archaeological resource significant to archaeologists and local Native Americans; d. Review reporting requirements, relevant environmental laws, and penalties;	Retain a qualified archaeologist to create a Worker Environmental Awareness Program	Prior to commencement of construction	**Implementation:** Applicant **Verification:** City of Hesperia

	e. Describe procedures that would be followed in the event of a new discovery; f. Best management practices; g. Responsibilities of project personnel; and h. Who to contact in the event of an inadvertent discovery, inclusive of local Native American tribes. The name and qualifications of the archaeologist who provided the training and a list of all construction personnel who completed the training shall be provided to the City prior to initiation of construction activities.			
CR-3	**Inadvertent Discovery of Archaeological Resources Protocol.** If cultural resources are encountered during subsurface earthwork activities, all ground-disturbing activities within a 60-foot radius of the find shall cease, the City shall be notified immediately, and a qualified archaeologist meeting Secretary of Interior standards shall be hired to assess the find. Work shall not continue until the project archaeologist assesses the find and determines the need for further study. If the find includes Native American-affiliated materials, a local Native American tribal representative will be contacted to work in conjunction with the project archaeologist to determine the need for further study. Additionally, the Yuhaaviatam of San Manuel Nation Cultural Resources Department (YSMN) shall be contacted, as detailed within TCR-1, regarding any pre-contact finds and be provided information after the archaeologist makes his/her initial assessment of the nature of the find, so as to provide Tribal input with regards to significance and treatment. A standard inadvertent discovery clause shall be included in every grading and construction contract to inform contractors of this requirement. Any previously unidentified resources found during construction shall be recorded on appropriate California Department of Parks and Recreation forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archaeologist. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan, in conjunction with locally affiliated Native American representative(s) as necessary, that will capture those categories of data for which the site is significant. The archaeologist shall also perform appropriate technical analysis, prepare a comprehensive report, file it with the South Central Coastal Information Center and the City of Hesperia Planning Department, and provide for the permanent curation of the recovered materials. In addition, if significant pre-contact cultural resources, as defined by CEQA, are discovered and avoidance cannot be ensured, the archaeologist shall develop a Monitoring and Treatment Plan, the drafts of which shall be provided to YSMN for review and comment,	Immediately cease work in the vicinity of an archaeological resource find and retain a qualified archaeologist to assess the find.	During ground-disturbing activities	**Implementation:** Applicant **Verification:** City of Hesperia

	as detailed within TCR-1. The archaeologist shall monitor the remainder of the project and implement the Plan accordingly.			
CR-4	**Discovery of Human Remains Protocol.** In the event that human remains are exposed during earth-disturbing activities associated with the project, an immediate halt work order shall be issued, and the City of Hesperia shall be notified. California Health and Safety Code Section 7050.5 requires that no further disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to California Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner shall notify the Native American Heritage Commission within 24 hours. These requirements shall be printed on all relevant sheets of building and grading plans.	Immediately cease work in the vicinity the area suspected to overlie adjacent human remains and retain a qualified archaeologist to assess the find.	During ground-disturbing activities	**Implementation:** Applicant **Verification:** City of Hesperia
TCR-1	**Discovery of cultural resources.** The Yuhaaviatam of San Manuel Nation Cultural Resources Management Department (YSMN) shall be contacted if any pre-contact cultural resources are discovered during project implementation, and provided information regarding the nature of the find, to provide Tribal input with regards to significance and treatment. Should the find be deemed significant, as defined by CEQA, a Cultural Resources Monitoring and Treatment Plan shall be created by the archaeologist, in coordination with YSMN, and all subsequent finds shall be subject to this Plan. This Plan shall allow for a monitor to be present that represents YSMN for the remainder of the project, should YSMN elect to place a monitor on-site.	Contact YSMN if any pre-contact cultural resources are discovered	Prior to commencement of construction	**Implementation:** Applicant **Verification:** City of Hesperia
TCR-2	**Archaeological/cultural documents created as a part of the project.** All archaeological/cultural documents created as a part of the project (isolate records, site records, survey reports, testing reports, etc.) shall be supplied to the City for dissemination to YSMN. The City shall, in good faith, consult with YSMN throughout the life of the project.	Document and submit records and reports to the City and YSMN if pre-contact cultural resources are discovered	Prior to commencement of construction	**Implementation:** Applicant **Verification:** City of Hesperia

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