Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive

Draft Initial Study & Mitigated Negative Declaration
November 2026

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1.0 INTRODUCTION

The Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive (proposed project) would improve a portion of Indian Canyon Drive in the City of Palm Springs, Riverside County, California. The project site is an approximate 1.6-mile alignment of Indian Canyon Drive staring near the intersection of Palm Springs Station Road and continuing south to Sunrise Parkway. Refer to Section 2.0, *Project Description*, for greater detail.

Following a preliminary review of the proposed project, the Coachella Association of Governments (CVAG) determined the project is subject to the guidelines and statutes of the California Environmental Quality Act (CEQA). As the CEQA Lead Agency, CVAG has the principal responsibility for carrying out or approving the proposed project. (CEQA Guidelines Section 15367). CVAG has reviewed the project and, on the basis of the whole record before it, has determined that there is no substantial evidence that the project will have a significant effect on the environment with adherence to the mitigation measures identified in this Initial Study and therefore a Mitigated Negative Declaration has been prepared. This Initial Study/Mitigated Negative Declaration (IS/MND) addresses the direct, indirect, and cumulative environmental effects of the proposed project. This IS/MND reflects the Lead Agency's independent judgement and analysis.

The environmental documentation is intended as an informational document undertaken to provide an environmental basis for subsequent discretionary actions upon the project. The resulting documentation is not a policy document and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies from whom permits and/or other discretionary approvals would be required.

1.1 California Environmental Quality Act

Pursuant to State CEQA Guidelines Section 15063(a), the CEQA Lead Agency is required to prepare an Initial Study to determine if the proposed project would have a significant environmental impact. If, as a result of the Initial Study, the Lead Agency finds that there is evidence that any aspect of the project may cause a significant environmental effect, the Lead Agency shall further find that an Environmental Impact Report (EIR) is warranted to analyze project-related and cumulative environmental impacts. Alternatively, if the Lead Agency finds that there is no evidence that the project, either as proposed or as modified to include the mitigation measures identified in the Initial Study, may cause a significant effect on the environment, the Lead Agency shall find that the proposed project would not have a significant effect on the environment and shall prepare a Negative Declaration or Mitigated Negative Declaration for that project. Such a determination can be made only if "There is no substantial evidence, in light of the whole record before the Lead Agency" that such impacts may occur (Public Resources Code Section 21080(c)(1)).

1.2 Purpose and Content of an Initial Study

Pursuant to State CEQA Guidelines Section 15063(c), the purpose of an Initial Study is to:

(1) Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or a Negative Declaration.

(2) Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.

(3) Assist in the preparation of an EIR, if one is required, by:

(A) Focusing the EIR on the effects determined to be significant,

(B) Identifying the effects determined not to be significant,

(C) Explaining the reasons for determining that potentially significant effects would not be significant, and

(D) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.

(4) Facilitate environmental assessment early in the design of a project;

(5) Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment;

(6) Eliminate unnecessary EIRs;

(7) Determine whether a previously prepared EIR could be used with the project

State CEQA Guidelines Section 15063(d)(f) identifies specific content and format requirements for an Initial Study:

- A description of the project including the location of the project;
- An identification of the environmental setting;
- An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- A discussion of ways to mitigate significant effects identified, if any;
- An examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls; and,
- The name of the person or persons who prepared or participated in the Initial Study.

This report is organized as follows:

- **Section 1.0, Introduction**: identifies the purpose and scope of the IS/MND.
- **Section 2.0, Project Description**: describes the location, general environmental setting, project background, project components, and the characteristics of the project's construction and operational phases.
- **Section 3.0, Environmental Analysis and Determination**: provides a checklist of environmental factors that would be potentially affected by this project and a description of the possible threshold responses.
- **Section 4.0, Evaluation of Environmental Impacts**: presents the environmental setting and impact analysis for each resource topic.
- **Section 5.0 List of Preparers:** identifies individuals involved in preparing this IS/MND.
- **Section 6.0, References:** provides reference materials and sources used for the development of the document.

1.3 Public Review

The Initial Study/Mitigated Negative Declaration is subject to a 30-day public review period (State CEQA Guidelines Section 15073). During this public review period, written comments on the document relative to environmental issues should be addressed to the Lead Agency (CVAG) and may be submitted in-person, by postal mail, or electronic mail at the address below:

Jonathan Hoy, Transportation Director
Coachella Valley Association of Governments
74-199 El Paseo, Suite 100
Palm Desert, CA 92260
jhoy@cvag.org

Following review of written comments received, CVAG will consider the written comments as a part of the project's environmental review and will include them with the Final Initial Study documentation for consideration by CVAG's decision-makers at a publicly noticed Board meeting.

1.4 Incorporation by Reference

The following documents were utilized during preparation of this Initial Study and are incorporated into this document by reference (State CEQA Guidelines Section 15150). The documents are available for review on the City of Palm Springs's website (https://www.palmspringsca.gov/government/departments/planning) and at City Hall, within the Planning Services Department located at 3200 East Tahquitz Canyon Way, Palm Springs, CA 92262.

- City of Palm Springs 2040 General Plan (adopted January 9, 2025). The City of Palm Springs 2040 General Plan (General Plan) sets the course for decision making, helps to balance the competing interests of residents with the needs of visitors and property owners, helps

to inform and educate the citizenry, serves as an effective management tool for City staff, provides guidance for economic decisions, and ensures the protection of the natural environment. It guides growth and development within the City by designating land uses in the proposed land use map and through implementation of the goals and policies of the General Plan. It also provides a long-term vision for the City, and through its implementation goals and policies, indicates how that vision may be achieved over time. The General Plan includes the following elements: Administration; Land Use; Housing; Circulation; Recreation, Open Space and Conservation; Safety; Air Quality, Noise; and Community Design. All development projects, including subdivisions, public works, redevelopment projects, zoning decisions, and other various implementation tools must be consistent with the General Plan.

- *City of Palm Springs Municipal Code*. The Palm Springs Municipal Code (Municipal Code) provides regulations for governmental operations, development, infrastructure, public health and safety, and business operations within the City. Municipal Code Chapters 91-94, Zoning (Zoning Code), is established to promote the public health, safety, peace, comfort, convenience, prosperity, and welfare of the City and its inhabitants. The Zoning Code regulates the use of buildings, structures, and land for residential, commercial, industrial and institutional purposes; regulates location, height, bulk, and area covered by buildings and structures; and controls lot size, yards, intensity of land use, signs, and off-street parking.

- *Coachella Valley Multiple Species Habitat Conservation Plan (September 2007)*. The Coachella Valley Multiple Species Habitat Conservation Plan ("Plan") is a shared regional vision for balanced growth to conserve Coachella Valley's natural resources while also building a strong economy vital to our future. The Plan balances environmental protection and economic development objectives in the Plan Area and simplifies compliance with endangered species related laws. The Plan is intended to satisfy the legal requirements for the issuance of Permits that will allow the Take of species covered by the Plan in the course of otherwise lawful activities. The Plan will, to the maximum extent practicable, minimize and mitigate the impacts of the Taking and provide for Conservation of the Covered Species.

2.0 PROJECT DESCRIPTION

2.1 California Environmental Quality Act

CVAG, as Lead Agency under CEQA, has prepared an Initial Study for the Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive (proposed project) in compliance with the State CEQA Statutes (Public Resources Code 21000–21189) and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387).

Section 15063(c) of the State CEQA Guidelines defines an Initial Study as the preliminary method of analyzing the potential environmental consequences of a project. The purpose of an Initial Study is to:

(1) Provide the Lead Agency with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration.
(2) Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.
(3) Assist in the preparation of an EIR, if one is required, by: (A) Focusing the EIR on the effects determined to be significant, (B) Identifying the effects determined not to be significant, (C) Explaining the reasons for determining that potentially significant effects would not be significant, and (D) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.
(4) Facilitate environmental assessment early in the design of a project.
(5) Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment.
(6) Eliminate unnecessary EIRs.
(7) Determine whether a previously prepared EIR could be used with the project.

This Initial Study serves as an informational document to provide an environmental basis for subsequent discretionary actions upon the project. The Initial Study is subject to a 30-day public review period. During this review, comments on the document related to environmental topics should be addressed to CVAG in writing. Following review of any written comments received on the environmental assessment, CVAG will consider the written comments as a part of the project's environmental review and will include them within the Final Initial Study documentation for consideration by CVAG's decision-makers at a publicly noticed hearing.

The City of Palm Springs will serve as a CEQA Responsible Agency for this Initial Study (Public Resource Code Section 21069). "Responsible Agency" is defined by CEQA as a public agency, other than the Lead Agency, which has responsibility for carrying out or approving a project.

In addition, the project action requires compliance with the National Environmental Policy Act (NEPA) due to federal grant funding for the project, which includes Local Transportation Climate Adaptation Program (LTCAP) funds. Funding requirements would be coordinated by the California Transportation Commission, CVAG, and as a Local Assistance Project, by the California Department of Transportation (Caltrans) District 8. A Preliminary Environmental Study and Categorical Exclusion has been prepared for the proposed action to satisfy NEPA compliance.

2.2 Project Location

The project site (alignment) is approximately 1.6-miles (8,500 linear feet) along Indian Canyon Drive right-of-way, south of Interstate 10 (I-10) starting at Palm Springs Station Road (signalized intersection) and continuing south to Sunrise Parkway (signalized intersection) in the City of Palm Springs, within Riverside County (Refer to Exhibit 1, *Regional Vicinity* and Exhibit 2, *Project Location Map*). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm Springs U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps. Specifically, the project site includes Assessor's Parcel Numbers 669-080-002, 669-240-006, 669-240-004, and 669-100-008.

2.3 Environmental Setting and Surrounding Land Uses

Indian Canyon Drive is a primary north-south transportation corridor which provides local transportation access, as well as regional access via an interchange with I-10. Indian Canyon Drive [at the project site] crosses the Whitewater River and Chino Creek, an area that is susceptible to flash flooding during storm events and blowsand during high winds. The Whitewater River is an ephemeral channel which originates offsite, flowing east/southeast. Chino Creek is also an ephemeral channel which originates offsite, flowing from the San Jacinto Mountains to the east.

The City's 2040 General Plan Circulation Element identifies Indian Canyon Drive from I-10 to Tahquitz Canyon Way as a National Highway System connector. Additionally, within the project footprint, Indian Canyon Drive is a four-lane roadway, classified as Major Thoroughfare (4-lane divided). This roadway designation primarily serves through traffic with some local access permitted. This roadway classification functions as the foundation of the City's circulation system, connecting the City to regional highways as well as different areas of the City. The roadway is designed for a posted speed of 55 mph (60 mph design speed).

According to the City's 2040 General Plan Safety Element, portions of the City are susceptible to storm-induced flooding of the Whitewater River, San Gorgonio River, and other drainages that extend across the City. Palm Springs is susceptible to flash flooding which occurs during periods of heavy precipitation when rapidly moving, high volumes of water flow downstream from the mountains into the valley, often carrying mud, sand, and rock fragments. Additionally, the Federal Emergency Management Agency (FEMA) has identified the 100- and 500-year flood zones within the City which include the Whitewater River and Chino Creek as 100-year flood zones, meaning there is a 1% annual chance of flooding along the project alignment (2040 General Plan, Safety Element, Figure 6-5, Flood Hazards).

The project site is located adjacent to the Whitewater Floodplain Conservation Area associated with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). The project is

identified as a Covered Activity under the CVMSHCP, Section 7.2.3 Transportation Projects[1] (Table 7-3: CVAG Regional Road Projects); and as stated, the CVMSHCP Permit provides Take Authorization for the regional road improvement project with adherence to applicable avoidance, minimization, and mitigation measures identified in the CVMSHCP.[2] In compliance with the provisions of the CVMSHCP, the project would be in conformance with all applicable avoidance, minimization, and mitigation measures, as described in Section 4.4 of the CVMSHCP. Further, the project would be required to adhere to the Monitoring Program, the Management program, and Adaptive Management, as described in Section 6.6.1 of the CVMSHCP. According to the CVMSHCP, two types of vegetation communities/land covers were mapped in the Whitewater Floodplain Conservation Area, which overlaps with the biological study area[3]: ephemeral desert sand fields and stabilized shielded desert sand fields.

The entire project footprint is within a designated blowsand area (General Plan, 2007 Air Quality Element, Figure 7-1, Blowsand Area). Another feature contributing to the biological diversity are the strong winds that funnel through the San Gorgonio Pass from the west through areas of sand deposition from the San Gorgonio and Whitewater Rivers and create an aeolian dune system[4].

Surrounding land uses include:

- North: Commercial and the Palm Springs Amtrak train station (at the northwest)
- East: Overhead power lines (along Indian Canyon Drive) lie east of the project area, Granite solar farm facility (at the northeast) and open desert wash
- South: Residential
- West: Wind turbine facilities, CVWD's Groundwater Replenishment Facility, and open desert wash

2.4 Purpose and Need

The purpose of the project is to construct a bridge system to address safety concerns regarding the conveyance of floodwaters and blowsand. Blowsand is a natural sand migration process in which fine grained particles are transported by strong winds. The project is designed to mitigate the adverse impacts of flood and blowsand events that occur along Indian Canyon Drive and the local vicinity. Frequent and prolonged road closures on Indian Canyon Drive due to floods and blowsand events delays emergency response times and strains the region's transportation system. The resulting congestion, increased travel times, and emissions impact the local economy by constraining people and the movement of goods.

The project would allow for restoration of sand-affiliated ecological processes under the proposed bridge, allowing for a more natural blowsand ecosystem. The proposed bridge will also

[1] Note that within Section 7.2.3 of the CVMSHCP, the project reach of 'Indian Canyon Drive' is referred to as 'Indian Avenue'.
[2] CVMSHCP Section 7.0 14-CVAG-MSHCP-Plan-Section-7-0.pdf
[3] The biological study area refers to the project alignment plus a 100-foot buffer off the centerline of the road.
[4] Final Major Amendment to the CVMSHCP – August 2016. 2

restore natural wildlife movement opportunities under the bridge rather than across Indian Canyon Drive.

The project will address three primary needs:

1. Improve the existing at-grade transportation infrastructure along Indian Canyon Drive to facilitate the flow of floodwater and sand in areas of concentrated flow, including undercrossings to create a wildlife corridor.
2. Improve mobility for motorists and pedestrians by minimizing the frequency of roadway closures caused by flood and blowsand events.
3. Provide a multi-modal active transportation pathway.

Further, the City's 2040 General Plan Circulation Element identifies this project within Policy CR2.8: "Improve connectivity and resiliency in and out of the City by constructing all-weather bridge crossings and other infrastructure enhancements along major access corridors like Vista Chino, Gene Autry Trail, Indian Canyon Drive, and Palm Canyon Drive," and as established under Goal CR2: "Provide a circulation network that maintains a safe and efficient system for all travel modes and users of all ages and mobilities."

2.5 Project Characteristics

Key components of the proposed project consist of the following. Refer to Exhibit 3, *Project Features Map*.

- Elevated bridge system spanning a portion of Whitewater River along Indian Canyon Drive designed to improve drainage crossing, prevent scour, and facilitate wildlife crossing.
- A bike trail along the west side of Indian Canyon Drive connecting to the existing Coachella Valley Link [trail] (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection.
- Roadway improvements along Indian Canyon Drive
- Access road on the west side of the proposed elevated bridge system to provide utility and maintenance access.

2.6 Construction and Staging

The construction duration is anticipated for approximately 24 months. Project development would occur in multiple stages and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction.

Construction staging is anticipated to occur along the project alignment. A majority of construction activities would be conducted Monday-Friday between 7:00 a.m. and 5:30 p.m. (unless otherwise approved) and will consist of one lane closures to allow Indian Canyon Drive to remain open to traffic. Night and weekend work may be required throughout construction (for example, to tie back improved project segments into the existing portions of Indian Canyon Drive at each end of the project). As such, temporary nighttime road closures will occur as needed.

2.7 Operational Maintenance Activities

In addition to current, routine operational maintenance activities at the project site, Indian Canyon Drive will require the following long-term maintenance activities. Maintenance activities will continue to be managed by the City of Palm Springs.

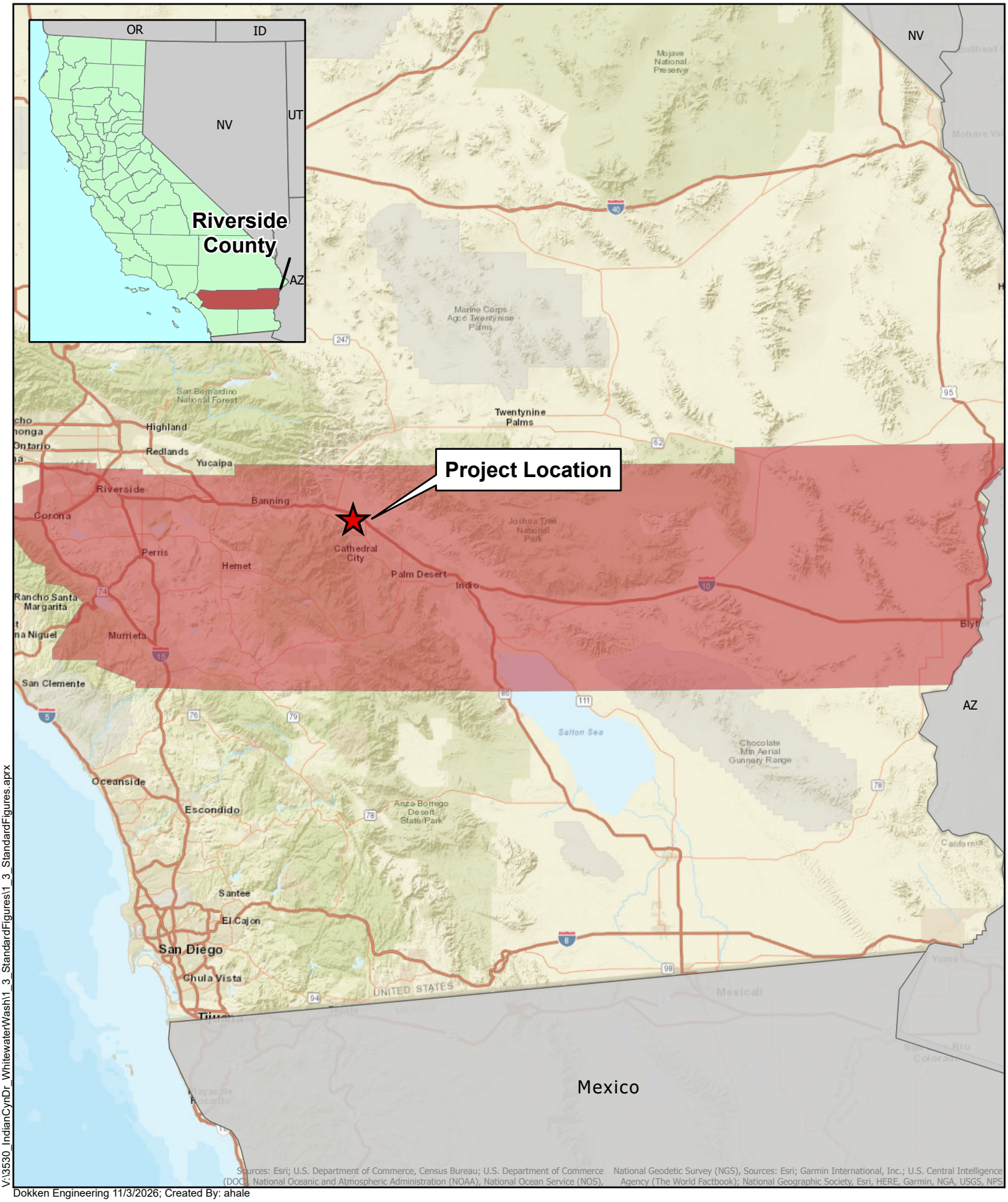
- After a storm event that generates runoff, re-grading under the bridge as well as some distance upstream and downstream.
- After a blowsand event, sand removal under the bridge.
- Occasional graffiti /vandalism/trash clean up on/under the bridge and retaining walls.

2.8 Required Permits and Approvals

Anticipated permits and approvals for the project are listed in Table 2.8-1, *Required Permits and Approvals*.

Table 2.8-1, Required Permits and Approvals

Agency	Permit / Approval
Federal	
United States Army Corps of Engineers (USACE)	Section 404 Permit of the Clean Water Act
United States Fish and Wildlife Service (USFWS)	Endangered Species Act consultation, as part of the NEPA compliance in connection with Caltrans and Joint Project Review with the Coachella Valley Conservation Commission
State	
California Transportation Commission	Grant Funding (Local Transportation Climate Adaptation Program)
California Department of Transportation (Caltrans)	NEPA compliance (Preliminary Environmental Study and Categorial Exclusion)
Regional Water Quality Control Board (RWQCB)	Section 401 Permit of the Clean Water Act and the Porter-Cologne Water Quality Control Act for the Discharge of Dredged or Fill Material to Waters of the State
California Department of Fish and Wildlife (CDFW)	Fish and Game Section 1602 Lake and Streambed Alteration Agreement, Waters of the State
State Historic Preservation Office	Section 106 Consultation (Caltrans Lead)
Local / Regional	
Coachella Valley Association of Governments (CVAG)	Lead Agency for CEQA Compliance
City of Palm Springs	Responsible Agency for CEQA Compliance
Coachella Valley Conservation Commission (CVCC)	Joint Project Review
South Coast Air Quality Management District (SCAQMD)	Fugitive Dust Construction Permit

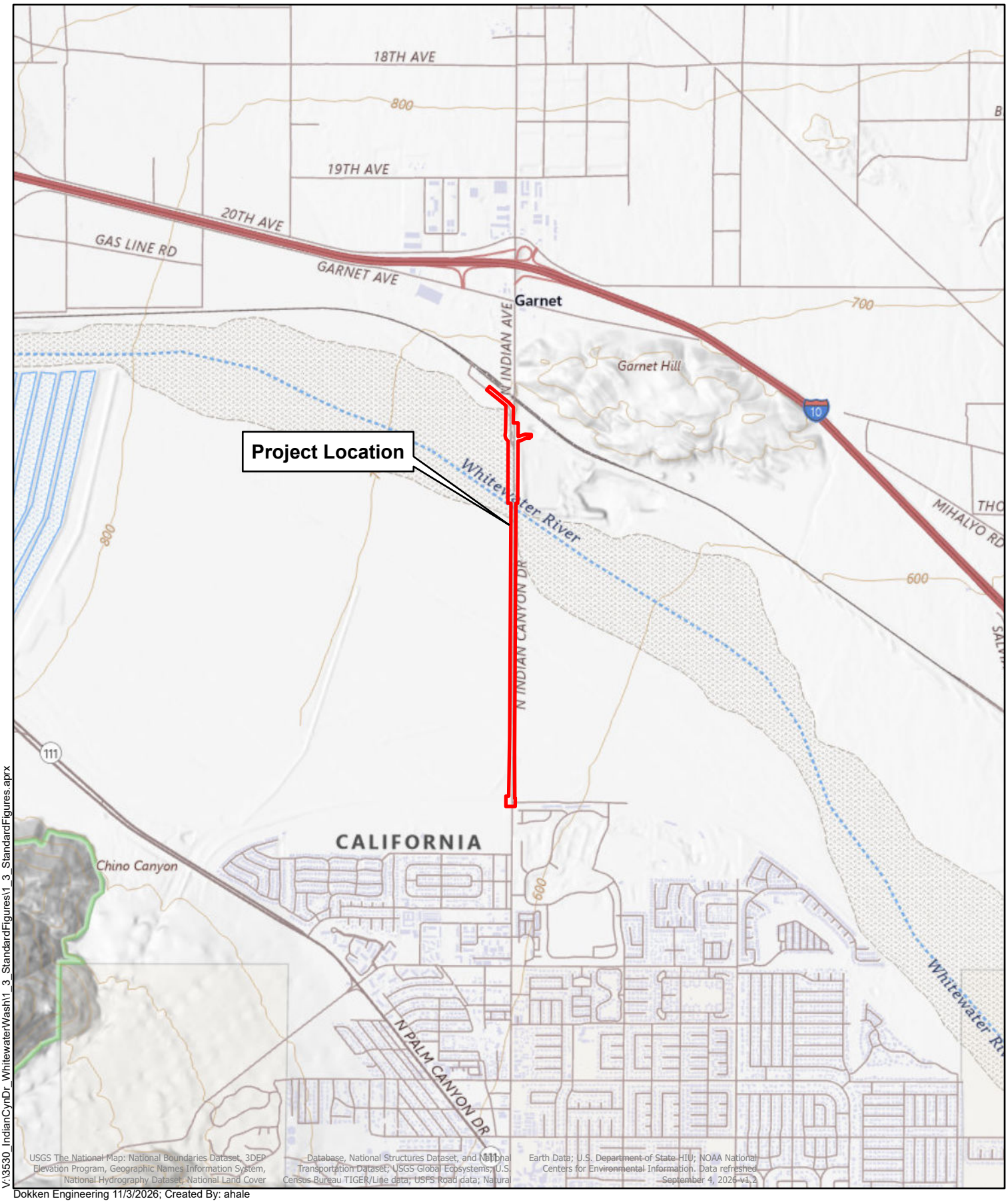


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Dokken Engineering 11/3/2026; Created By: ahale

0 12 24 Miles

Figure 1
Project Vicinity
LTCAPL 6164 (030)
Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive
City of Palm Springs, Riverside County, California



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Dokken Engineering 11/3/2026; Created By: ahale

0 1,500 3,000

Feet

Figure 2
Project Location

LTCAPL 6164 (030)

Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive

City of Palm Springs, Riverside County, California

Project Features

- Edge of Pavement
- Midwest Guardrail System
- Curb Ramp
- Bike Path/Pedestrian Access
- Elevated Bridge Structure
- Access Road

North Indian Canyon Drive

Palm Springs Station Road

San Bernardino County, Vantor, © OpenStreetMap contributors, Loma Linda University, County of Riverside, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

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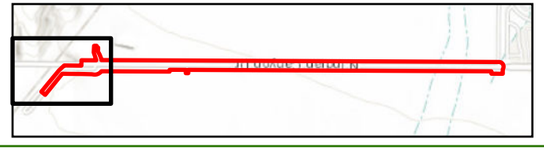


Figure 3
Project Features
Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive
City of Palm Springs, Riverside County, California



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0 75 150 225 300 Feet



Figure 3
Project Features
Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive
City of Palm Springs, Riverside County, California



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Figure 3
Project Features
Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive
City of Palm Springs, Riverside County, California



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Dokken Engineering 11/6/2026; Created By: ahale

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Figure 3
Project Features
Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive
City of Palm Springs, Riverside County, California



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Dokken Engineering 11/6/2026; Created By: ahale

0 75 150 225 300 Feet



Figure 3
Project Features
Western Coachella Valley Flood and Blowsand Road Improvement Project – ACCESS Indian Canyon Drive
City of Palm Springs, Riverside County, California

3.0 ENVIRONMENTAL ANALYSIS AND DETERMINATION

3.1 Environmental Factors Potentially Affected

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

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

3.2 Lead Agency's Environmental Determination

Coachella Valley Association of Governments. On the basis of this initial evaluation:

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

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

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

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

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

Signature	**Date**

Jonathan Hoy, Director of Transportation
Coachella Valley Association of Governments

4.0 EVALUATION OF ENVIRONMENTAL IMPACTS

4.1 Aesthetics

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
AESTHETICS: *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

The City's General Plan identifies the San Jacinto Mountains and the Santa Rosa Mountains as scenic backdrops providing visual quality to the City. The project area is located within the Whitewater Riverside and Chino Creek floodplains with open desert on either side of the roadway. At the northern terminus of the project site is the Amtrak train depot and surface parking (west side) and a solar farm and surface mining operation (east side). Further north are commercial land uses and Interstate 10. Developed residential communities are located at the southern terminus.

Pursuant to Public Resources Code section 21099(d)(1), aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment. Because the proposed project does not include residential, mixed-use residential, or employment center uses, it is not exempt from analysis of potential impacts to aesthetic resources.

Discussion of Impacts

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

Less Than Significant Impact. Scenic views from the project site include views of the San Jacinto Mountains to the southwest and views of the San Bernardino Mountains to the northwest. As identified in the City's General Plan Community Design Element, all major thoroughfares and freeways are designated as scenic corridors within the City. The proposed roadway improvements would not extend past the road's current alignment. The proposed bridge structure would be elevated approximately 15 feet above the existing grade, which is nominal and would not diminish views of the surrounding mountains. Thus, the inclusion of the project within the existing viewshed would be consistent with views presently found in the project site. Therefore, impacts associated with scenic vistas would be less than significant.

b) Except as provided in Public Resources Code Section 21099, would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. According to Caltrans California Scenic Highway Mapping System,[5] the project site is not located adjacent to or within any state eligible or designated scenic highway.

The City's General Plan identifies State Route 111 (SR-111) as an eligible scenic highway. SR-111 is located approximately 1 mile southwest of the southern extent of the project site. However, SR-111 is not visible from the project site. The nearest designated scenic highway is State Route 62 (SR-62) located approximately 3.5 miles to the west of the north extent of the project site. However, due to distance, and intervening topography, project implementation would not substantially damage scenic resources within a state scenic highway. No impact would occur.

c) Except as provided in Public Resources Code Section 21099, would the project, 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?

Less Than Significant Impact. The elevated portion of the roadway where the bridge will be located would not diminish views of the surrounding mountains due to the scale and mass of the surrounding mountains; and therefore, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The proposed multi-use trail and non-elevated portion of the roadway would also not substantially degrade the existing visual character of the project area.

The City's General Plan contains policies regarding the protection of scenic resources. Specifically, Policy CD25.3 requires that all land uses and future development proposals respect and protect

[5] California Department of Transportation (Caltrans), *California State Scenic Highways*, https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways, accessed February 13, 2025.

the scenic values of the desert and mountain terrain. The project site is designated as a scenic corridor, as identified by Figure 9-4, *Citywide Scenic Corridors and Enhanced Landscape Streets*, from the City's Community Design Element of the General Plan. The City's General Plan defines scenic corridors as key view corridors, which provide a direct line of sight from an area to a point of interest or significant feature, such as the mountains. As a roadway improvement project that would not diminish views of the surrounding mountains, the project is consistent with the scenic corridor designation. The project consists of improvements to an already developed road alignment and impacts to the existing visual character and quality of the site would be less than significant.

d) Except as provided in Public Resources Code Section 21099, would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. Existing sources of light and glare in the immediate project site include vehicle headlights traveling along Indian Canyon Drive throughout the project site. Currently, there are no existing sources of light at the project site.

The project would introduce new sources of light to the project area during construction and operation. The proposed bridge includes lighting for the bike path. Therefore, implementation of the project can be expected to generate increased levels of light. Lighting associated with the project shall be shielded and directed towards the developed areas in alignment with the Conservation Area Guidelines as established in Section 4.5, *Land Adjacency Guidelines*, of the CVMSHCP. Section 4.5 establishes guidelines for minimizing the effects of lightning within Conservation Areas. Landscape shielding or other appropriate methods shall be incorporated in project designs to minimize the effects of lighting adjacent to or within the adjacent Conservation Area in accordance with the guidelines. In addition, mitigation measure BIO-15 will require night lighting to be minimized and fully shielded, limited to warm-color (≤3,000 Kelvin) fixtures with motion sensors and automatic shutoff, and designed to prevent spillover into the Whitewater Floodplain Conservation Area and 50 feet beyond the project boundary.

Further, lighting associated with the proposed project would be designed in accordance with Section 93.21.00*, Outdoor lighting standards*, of the City's Municipal Code, which contains standards to maintain ambient lighting levels as low as possible in order to enhance the City's community character and charm and maintain dark skies.

However, the project would be designed in conformance with provisions of the CVMSHCP and City's Municipal Code related to lighting. Therefore, potential light and glare impacts associated with the proposed project would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
AGRICULTURE AND FORESTRY RESOURCES: *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 City's General Plan does not identify agricultural lands within the City boundary. Further, the City is located within an arid desert region and does not have lands designated as forest or forest production.

Discussion of Impacts

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?

No Impact. According to the California Department of Conservation's Farmland Mapping and Monitoring Program, the lands adjacent to the project site are designated as Urban and Built-Up Land and Other Land. [6] Further, as identified by Figure 2-2, *General Plan Land Use*, from the City's Land Use Element, there are no land designated for agricultural use within the City. As such, no impacts would occur.

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

No Impact. The Williamson Act, also known as the California Land Conservation Act of 1965, allows local governments and private landowners to form contracts that restrict specific parcels of land to agricultural or related open space use. While the County of Riverside participates in the Williamson Act, the project site is not located on or adjacent to any existing zoning for agricultural use or a Williamson Act contract according to the Department of Conservation's California Williamson Act Enrollment Finder.[7] Therefore, no impact 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))?

No Impact. The City's General Plan does not include Forest Land or Timberland designations, nor does the City have zones for these uses. The City lies on the Coachella Valley floor which is characterized as a desert climate that does not support forest of timberlands. As such, the site does not contain any forest land or timberland, nor is it zoned for timberland production. Therefore, the project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production, and no impact would occur.

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

No Impact. Refer to Response 4.2(c) above. The site does not contain forest land, as defined above. Furthermore, the project site is not zoned for forest land. Therefore, the project would not result in the loss of forest land or the conversion of forest land to non-forest use. No impact would occur.

[6] California Department of Conservation website, https://maps.conservation.ca.gov/DLRP/CIFF/ accessed February 14, 2025.
[7] California Department of Conservation, *Williamson Act Enrollment Finder*, https://maps.conservation.ca.gov/dlrp/WilliamsonAct/, accessed February 14, 2025.

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?

No Impact. Refer to Response 4.2(a) and 4.2(c), above. The project site is not designated as Prime Farmland or forest land, and thus the project would not result in the conversion of Farmland to non-agricultural use, or forest land to non-forest use. Based upon the above, no impacts would occur relative to the conversion of farmland or forest land.

Mitigation Measures: No mitigation measures are required.

4.3 Air Quality

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
AIR QUALITY: *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

This section is based upon the following document prepared for the project:

- CVAG Roadway Improvements Detailed Report (Michael Baker International, November 18, 2025); refer to Appendix A, *Air Quality/Greenhouse Gas/Energy Modeling*.

The project site is located within the Coachella Valley planning area of the Salton Sea Air Basin (Basin) in the region managed by the South Coast Air Quality Management District (SCAQMD). The SCAQMD is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Riverside County and throughout the Salton Sea Air Basin.

Discussion of Impacts

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

Less Than Significant Impact. On December 2, 2022, the SCAQMD Governing Board adopted the 2022 Air Quality Management Plan (2022 AQMP). The 2022 AQMP incorporates the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, updated emission inventory methodologies for various source categories. Additionally, the 2022 AQMP utilized information and data from Southern California Association of Governments (SCAG) and its *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (2020-2045 RTP/SCS). In April 2024, SCAG adopted Connect SoCal 2024,

an update to the 2020-2045 RTP/SCS. However, SCAQMD has not released an updated AQMP. As such, this consistency analysis is based on the 2022 AQMP and the RTP/SCS that was adopted at the time, the 2020-2045 RTP/SCS. According to the SCAQMD's *CEQA Air Quality Handbook*, projects must be analyzed for consistency with two main criteria, as discussed below.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) Would the project result in an increase in the frequency or severity of existing air quality violations?

   Since the consistency criteria identified under the first criterion pertain to pollutant concentrations, rather than to total regional emissions, an analysis of a project's pollutant emissions relative to localized pollutant concentrations associated with the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) is used as the basis for evaluating project consistency. As discussed under Responses 4.3(b) and 4.3(c), the project's short-term construction emissions, long-term operational emissions, and localized concentrations of carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) would be less than significant. Due to the role volatile organic compounds (VOC) play in ozone (O_3) formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established. As such, the project would not cause or contribute to localized air quality violations or delay the attainment of air quality standard or interim emissions reductions specified in the AQMP.

b) Would the project cause or contribute to new air quality violations?

   As discussed in Response 4.3(b) and 4.3(c), construction and operation of the proposed project would result in emissions that would be below the SCAQMD construction and operational thresholds. Therefore, the proposed project would not have the potential to cause or contribute to a violation of the ambient air quality standards.

c) Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?

   As discussed in Response 4.3(c), the proposed project would result in less than significant impacts regarding localized concentrations during project construction and operations. As such, the proposed project would not delay the timely attainment of air quality standards or 2022 AQMP emissions reductions.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving

air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether the project exceeds the assumptions utilized in preparing the forecasts presented in the 2022 AQMP. Determining whether a project exceeds the assumptions reflected in the 2022 AQMP involves the evaluation of the following criteria.

a) Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?

A project is consistent with the 2022 AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the 2022 AQMP. In the case of the 2022 AQMP, three sources of data form the basis for the projections of air pollutant emissions: the *Palm Springs General Plan 2040* (General Plan), SCAG's regional growth forecast, and the SCAG 2020-2045 RTP/SCS. The 2020-2045 RTP/SCS also provides socioeconomic forecast projections of regional population growth.

The project proposes to construct a bridge system to improve safety and manage floodwaters and blowsand along Indian Canyon Drive. The project seeks to enhance at-grade infrastructure to allow floodwater and sand to flow efficiently, incorporating undercrossing for wildlife and sand fencing. It will also reduce roadway closures, improving mobility for both motorists and pedestrians. Additionally, the project includes a multi-use trail to support non-vehicular travel. Overall, the improvements will strengthen regional transportation resilience and environmental connectivity and would be consistent with the City's General Plan Circulation Element Policy CR2.8: "Improve connectivity and resiliency in and out of the City by constructing all-weather bridge crossings and other infrastructure enhancements along major access corridors like Vista Chino, Gene Autry Trail, Indian Canyon Drive, and Palm Canyon Drive," and as established under Goal CR2: "Provide a circulation network that maintains a safe and efficient system for all travel modes and users of all ages and mobilities." Furthermore, as a roadway improvement, the proposed project would not introduce any new land uses that could increase the population or employment beyond what is considered in the General Plan and, therefore, would not affect City-wide plans related to population, housing, or employment growth.

Therefore, the project is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity and would be considered consistent with the General Plan. Further, the population, employment, and housing, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to Palm Springs. As the SCAQMD has incorporated these same projections into the 2022 AQMP, it can be concluded that the proposed project would be consistent with the projections.

b) Would the project implement all feasible air quality mitigation measures?

The proposed project would not require mitigation and would result in less than significant air quality impacts; refer to Responses 4.3(b) and 4.3(c). In addition, the project would comply with all applicable SCAQMD rules and regulations, including Rule 403 that

requires control of excessive fugitive dust emissions by regular watering or other dust prevention measures, and Rule 1113 that regulates the reactive organic gases (ROG) content of paint. As such, the proposed project meets this AQMP consistency criterion.

c) Would the project be consistent with the land use planning strategies set forth in the AQMP?

The proposed project would help reduce roadway closures and improve mobility for both motorists and pedestrians. Additionally, the project includes a multi-use trail to support non-vehicular travel. Overall, the improvements will strengthen regional transportation resilience and environmental connectivity and would be consistent with the goals and policies contained in the City's General Plan Circulation Element. Therefore, the project would be consistent with the actions and strategies of the 2020-2045 RTP/SCS to reduce VMT and related mobile source emissions.

In conclusion, the determination of 2022 AQMP consistency is primarily concerned with the long-term influence of a project on air quality in the Basin. The proposed project would not result in a long-term impact on the region's ability to meet State and federal air quality. Also, the proposed project would be consistent with the goals and policies of the 2022 AQMP for control of fugitive dust. As discussed above, the proposed project's long-term influence would also be consistent with the SCAQMD and SCAG's goals and policies and is, therefore, considered consistent with the 2022 AQMP.

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?

Less Than Significant Impact.

Criteria Pollutants

Carbon Monoxide (CO)

CO is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of CO.

Ozone (O_3)

O_3 occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratosphere (the "good" O_3 layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays. "Bad"

O_3 is a photochemical pollutant, and needs volatile organic compounds (VOCs), nitrogen oxides (NO_X), and sunlight to form; therefore, VOCs and NO_X are O_3 precursors. To reduce O_3 concentrations, it is necessary to control the emissions of these O_3 precursors. Significant O_3 formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O_3 concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O_3 in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O_3 (in the troposphere) can adversely affect the human respiratory system and other tissues. O_3 is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O_3. Short-term exposure (lasting for a few hours) to O_3 at elevated levels can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Nitrogen Dioxide (NO_2)

NO_X are a family of highly reactive gases that are a primary precursor to the formation of ground-level O_3 and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at elevated levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations). NO_2 can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM_{10})

PM_{10} refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003, the California Air Resources Board (CARB) adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25). Exposure to PM_{10} would result in particles being deposited on the lung surface, causing tissue damage, lung inflammation, and impacting respiratory and cardiovascular health.

Fine Particulate Matter ($PM_{2.5}$)

Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both State and federal $PM_{2.5}$ standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In February 2024, the EPA lowered the federal primary $PM_{2.5}$ annual standard to 9.0 microgram per cubic meter (ug/m^3) from the 12.0 ug/m^3 standard set in 2012. The secondary annual standard remains at 15.0 ug/m^3. States and Tribal Authorities will submit initial recommendations of areas that do not attain this standard (i.e., nonattainment areas) to EPA by February 2025, and EPA will finalize area designations by February 2026.

On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

Due to the size of $PM_{2.5}$, these particles are more likely to be inhaled and deposited in the deeper parts of the lungs. Short-term exposure (up to 24 hours) would result in chronic bronchitis, asthma attacks, respiratory symptoms, and premature mortality.

Sulfur Dioxide (SO_2)

Sulfur dioxide (SO_2) is a colorless, irritating gas with a rotten egg smell; it is formed primarily by the combustion of sulfur-containing fossil fuels. Sulfur dioxide is often used interchangeably with SO_X. Exposure of a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics.

Volatile Organic Compounds (VOC)

VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form O_3 to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant. The terms VOC and ROG (see below) are used interchangeably. Exposure to VOC vapors would result in eyes, nose, and throat irritation, nausea, headaches, and damage to the liver, kidney, and central nervous system.

Reactive Organic Gases (ROG)

Similar to VOCs, ROGs are also precursors in forming O_3 and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result

of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. ROGs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant. The terms ROG and VOC are used interchangeably. Exposure to ROGs would result in the same adverse health effects as VOCs.

Short-Term Construction Emissions

Project construction would primarily generate temporary criteria pollutants from construction equipment operation on-site, construction worker vehicle trips to and from the project site, and from construction material deliveries to and from the project site. Construction input data for California Emissions Estimator Model version 2022.1 (CalEEMod) include but are not limited to (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; and (3) areas to be excavated and graded. Construction emissions were quantified by estimating the types and quantity of equipment that would be used on-site during each construction phase, as provided by the model defaults. CalEEMod also estimates off-site emissions from workers, vendors, and hauling truck trips.

Table 4.3-1, *Construction Emissions*, presents the anticipated daily short-term construction emissions during construction. Refer to Appendix A, *Air Quality/Greenhouse Gas Emissions/Energy Modeling*, for detailed CalEEMod outputs and results.

Table 4.3-1. Construction Emissions

Emissions Source	Pollutant (pounds/day)[1,2]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Year 1 Construction Emissions	11.00	89.00	118.00	0.21	8.10	4.20
Year 2 Construction Emissions	6.70	59.00	67.00	0.18	6.40	2.80
Maximum Daily Emissions	**11.00**	**89.00**	**118.00**	**0.21**	**8.10**	**4.20**
SCAQMD Significance Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1. Emissions were calculated using CalEEMod version 2022.1. Higher emissions between winter and summer are presented as a conservative analysis.
2. Modeling assumptions include compliance with SCAQMD Rule 403 which requires: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.

Source: Refer to Appendix A for assumptions used in this analysis.

As shown in Table 4.3-1, criteria pollutant emissions during construction of the proposed project would not exceed the SCAQMD significance thresholds.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways. Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather

conditions. Fugitive dust from grading and construction is expected to be short-term and would cease upon project completion. It should be noted that most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. $PM_{2.5}$ is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or formed in the atmosphere from the combustion of gases such as NO_X and sulfur oxides (SO_X) combining with ammonia. $PM_{2.5}$ components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

Construction activities would comply with SCAQMD Rule 402, which prohibits fugitive dust from creating a nuisance off-site, and Rule 403, which requires that excessive fugitive dust emissions be controlled by regular watering or other dust prevention measures. Adherence to SCAQMD Rule 403 would greatly reduce PM_{10} and $PM_{2.5}$ concentrations. It should be noted that these estimated reductions were applied in CalEEMod. As depicted in Table 4.3-1, total PM_{10} and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds during construction. Thus, construction-related air quality impacts related to fugitive dust emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions (e.g., NO_x and CO) from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. As depicted in Table 4.3-1, construction equipment and worker vehicle exhaust emissions would be below the established SCAQMD thresholds. Therefore, air quality impacts from equipment and vehicle exhaust emissions would be less than significant.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coating creates ROG emissions, which are O_3 precursors. As required, all architectural coatings for the proposed project structures would comply with SCAQMD Rule 1113. Rule 1113 provides specifications on painting practices as well as regulates the ROG content of paint. ROG emissions associated with the proposed project would be less than significant; refer to Table 4.3-1.

Total Daily Construction Emissions

In accordance with the SCAQMD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. As indicated in Table 4.3-1, criteria pollutant emissions during construction of the proposed project would not exceed the SCAQMD

significance thresholds. Thus, total construction-related air emissions would be less than significant.

Naturally Occurring Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are human health hazards when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by State, federal, and international agencies and was identified as a toxic air contaminant by CARB in 1986. Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and increase the risk of asbestos-related diseases and cancer (i.e., scarring of lungs [asbestosis], pleural disease, lung cancer, and mesothelioma). These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the California Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), serpentinite and ultramafic rocks are not known to occur within the project area.[8] As such, the project is not subject to naturally occurring asbestos and impacts would be less than significant.

Long-Term Operational Emissions

The proposed project would not include new permanent stationary or mobile sources of emissions, and therefore, by its very nature, would not generate quantifiable criteria emissions from operations. The roadway improvement project would not directly generate vehicle trips, a predominant source of air pollutant emissions. Vehicle trips are typically generated by land use changes that may be indirectly influenced by transportation improvements. However, the proposed project would not result in an increase in vehicle trips. While the proposed roadway improvements would improve traffic efficiency and safety in the project area, it would not increase the roadway capacity of the intersection or represent a trip generating land use. Rather, the purpose of the project is to facilitate safe and efficient travel for all modes of transportation along the Indian Canyon Drive corridor. In addition, the proposed project would reduce roadway closures, improving mobility for both motorists and pedestrians. Overall, the improvements would strengthen regional transportation resilience and environmental connectivity. Therefore, impacts in this regard would be less than significant.

[8] California Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*, August 2000,

Air Quality Health Impacts

Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individual [e.g., age, gender]). In particular, O_3 precursors, VOCs and NO_X, affect air quality on a regional scale. Health effects related to O_3 are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating project-generated criteria pollutants to specific health effects or additional days of nonattainment would produce meaningless results. In other words, the project's less than significant increases in regional air pollution from criteria air pollutants would have nominal or negligible impacts on human health.

As noted in the Brief of Amicus Curiae by the SCAQMD (April 6, 2015) for the *Sierra Club vs. County of Fresno*, the SCAQMD acknowledged it would be extremely difficult, if not impossible to quantify health impacts of criteria pollutants for various reasons including modeling limitations as well as where in the atmosphere air pollutants interact and form.[9] Further, as noted in the Brief of Amicus Curiae by the San Joaquin Valley Air Pollution Control District (SJVAPCD) (April 13, 2015) for the *Sierra Club vs. County of Fresno*, SJVAPCD acknowledged that currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air emissions and specific human health impacts.[10]

The SCAQMD acknowledges that health effects quantification from O_3, as an example, is correlated with the increases in ambient level of O_3 in the air (concentration) that an individual person breathes. The SCAQMD's Brief of Amicus Curiae states that it would take a large amount of additional emissions to cause a modeled increase in ambient O_3 levels over the entire region. The SCAQMD states that based on their own modeling in the SCAQMD's *2012 Air Quality Management Plan*, a reduction of 432 tons (864,000 pounds) per day of NO_X and a reduction of 187 tons (374,000 pounds) per day of VOCs would reduce O_3 levels at highest monitored sites by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify O_3 -related health impacts caused by NO_X or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations. As the project would not exceed SCAQMD thresholds for construction and operational air emissions, the project would have a less than significant impact for air quality health impacts.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as

[9] South Coast Air Quality Management District, *Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno,* April 3, 2015.

[10] San Joaquin Valley Air Pollution Control District, *Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, April 13, 2015.

children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as those most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Sensitive receptors near the project site include residential uses located southeast of Indian Canyon Drive and Sunrise Parkway, with the closest sensitive receptor being the future single-family residence (Vitality at Miralon) located approximately 150 feet southeast of the proposed roadway improvements. However, it should be noted that majority of the construction activities would occur approximately 3,500 feet to the north of this sensitive receptor where the bridge structure would be placed. To identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds (LSTs) for construction and operations impacts.

Localized Significance Thresholds

LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST lookup tables for one-, two-, and five-acre projects emitting CO, NO_X, $PM_{2.5}$, and/or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. The project site is located within Source Receptor Area (SRA) 30, *Coachella Valley.*

Construction Localized Significance Threshold

The SCAQMD guidance on applying CalEEMod to LSTs specifies the number of acres a particular piece of equipment would likely disturb per day.[11] The project would actively disturb less than one acre per day during the grading phase of construction. Therefore, the LST thresholds for one-acre were utilized for the construction LST analysis. The closest sensitive receptors are the future single-family residential units located approximately 3,500 feet south of the proposed bridge construction area. These sensitive land uses may be potentially affected by air pollutant emissions generated during on-site construction activities. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. As the nearest sensitive uses are located more than 1,000 meters away from the project site, the LST values for 500 meters were utilized for the following evaluation.

Table 4.3-2, *Localized Emissions Significance*, shows the localized construction-related emissions for NO_X, CO, PM_{10}, and $PM_{2.5}$ compared to the LSTs for SRA 30. It is noted that the localized emissions presented in Table 4.3-2 are less than those in Table 4.3-1 because localized emissions

[11] The number of acres represent the total acres traversed by grading equipment. To properly grade a piece of land, multiple passes with equipment may be required. The disturbance acreage is based on the equipment list and days of the grading phase according to the anticipated maximum number of acres a given piece of equipment can pass over in an 8-hour workday.

include only on-site emissions (i.e., from construction equipment and fugitive dust), and do not include off-site emissions (i.e., from hauling activities). As shown in Table 4.3-2, localized construction emissions would not exceed the LSTs for SRA 30.

Table 4.3-2. Localized Emissions Significance

Source[1,2,3]	Pollutant (pounds/day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Year 1	76.00	87.00	5.80	3.37
Year 2	54.00	61.00	4.20	2.12
Maximum Daily Emissions	**76.00**	**87.00**	**5.80**	**3.37**
Localized Significance Threshold[4]	*733.00*	*24,417.00*	*214.00*	*105.00*
Thresholds Exceeded?	***No***	***No***	***No***	***No***

Notes:
1. The Linear, Grading & Excavation phase emissions in Year 1 are presented as the worst-case scenario for NO_X, CO, PM_{10}, and $PM_{2.5}$.
2. The Linear, Drainage, Utilities, & Sub-Grade phase emissions in Year 2 are presented as the worst-case scenario for NO_X, CO, PM_{10}, and $PM_{2.5}$.
3. The reduction/credits for construction emissions are based on "compliance with established SCAQMD requirements (Rule 402 and 403). Compliance with SCAQMD Rules are reflected in CalEEMod to include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. The emissions results in this table represent the "mitigated" emissions shown in Appendix A.
4. The Localized Significance Threshold was determined using Appendix C of the SCAQMD's *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction (approximately one acre; therefore, the one-acre threshold was used) for Source Receptor Area 30, Coachella Valley.

Source: Refer to Appendix A for assumptions used in this analysis.

As shown in Table 4.3-2, localized construction emissions during construction of the proposed project would not exceed the LSTs for SRA 30. Therefore, localized significance impacts from construction would be less than significant.

Operational Localized Significance Threshold

According to SCAQMD LST methodology, LSTs would apply to operational activities if the project includes stationary sources or attracts mobile sources that may spend extended periods queuing and idling at the site (e.g., warehouse or transfer facilities). The proposed project is a roadway improvement project and does not include such uses. Thus, due to the lack of such emissions, no long-term LST analysis is needed. Operational LST impacts would be less than significant in this regard.

Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (e.g., adversely affecting residents, school children, hospital patients, and the elderly).

The Basin is designated an attainment area under federal and State CO standards. There has been a decline in CO emissions even though VMT on U.S. urban and rural roads have increased; estimated anthropogenic CO emissions have decreased 68 percent between 1990 and 2014. In 2014, mobile sources accounted for 82 percent of the nation's total anthropogenic CO emissions. Three major control programs have contributed to the reduced per-vehicle CO emissions,

including exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

As previously stated, the project would not result in an increase in the number of vehicle trips. While the proposed roadway improvements would improve traffic efficiency and safety in the project area, it would not increase the roadway capacity of the intersection or represent a trip generating land use. Rather, the purpose of the projects is to facilitate safe and efficient travel for all modes of transportation along the Indian Canyon Drive corridor. In addition, the proposed project would reduce roadway closures, improving mobility for both motorists and pedestrians. As such, the proposed project would not result in CO hotspot emissions.

Air Quality Health Impacts

As evaluated above, the project's air emissions would not exceed the SCAQMD's LST thresholds, and CO hotpots would not occur as a result of the proposed project. Therefore, the project would not exceed the most stringent applicable federal or State ambient air quality standards for emissions of CO, NO_X, PM_{10}, or $PM_{2.5}$. It should be noted that the ambient air quality standards are developed and represent levels at which the most susceptible persons (e.g., children and the elderly) are protected. In other words, the ambient air quality standards are purposefully set in a stringent manner to protect children, elderly, and those with existing respiratory problems. Thus, air quality health impact would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

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

Less Than Significant Impact. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors. As such, operation of the proposed project would not generate odors that would impact nearby receptors and a less than significant impact would occur in this regard.

Furthermore, certain odors may emanate from diesel-powered construction equipment during the construction period for the project. These odors would be limited to the construction period and would disperse quickly; therefore, these odors would not be considered a significant impact. In addition, the project would be required to comply with the California Code of Regulations, Title 13, sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would further reduce the detectable odors from heavy-duty equipment exhaust. The project would also comply with the SCAQMD Rule 1113, which would minimize odor impacts from ROG emissions during architectural coating. Odor impacts to existing adjacent land uses would be short-term and are less than significant.

Mitigation Measures: No mitigation measures are required.

4.4 Biological Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES: *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 Wildlife 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 Wildlife 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?	☐	☒	☐	☐
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

This section is based upon the following documents prepared for the project:

- *Natural Environmental Study (*Michael Baker International, April 2026); refer to Appendix B1, *Natural Environmental Study*.

- *Focused Special-Status Plant Survey Report* (Michael Baker International, June 20, 2025); refer to Appendix B2, *Special Status Plant Survey*.
- *Burrowing Owl Survey Report (*Michael Baker International, May 30, 2025); refer to Appendix B3, *Burrowing Owl Survey Report*.
- *Aquatic Resources Delineation Report (*Michael Baker International, June 2025); refer to Appendix B4, *Aquatic Resources Delineation Report*.
- *Coachella Valley Multiple Species Habitat Conservation Plan - Consistency Determination* (Coachella Valley Conservation Commission, March 2026); refer to Appendix B5, *CVMSHCP Consistency Determination.*

The project site (a portion of Indian Canyon Drive) is located with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP); and portions of the project are within the Whitewater Floodplain Conservation Area (WWFP). This Conservation Area encompasses portions of the Whitewater River channel south of Interstate 10 (I-10) where it joins the San Gorgonio River channel and continues eastward into the urbanized area of the City.

The project is considered a "Covered Activity" as described by Section 7.2.3 of the CVMSHCP and its Take Authorization has already been allocated. Further, because the project site is located within the Whitewater Floodplain Conservation Area, the project required a Joint Project Review (JPR) to ensure consistency with the CVMSHCP. The JPR process allows the Coachella Valley Conservation Commission (CVCC) to conduct an analysis of the project and determine whether or not a project is consistent with the requirements of the CVMSHCP. The project has received a Consistency Determination by the CVCC; refer to Appendix B5, *CVMSHCP Consistency Determination.* The JPR found the project as proposed conditionally consistent with the CVMSHCP pending the opportunity for further review of the roadway designs. Accordingly, coordination with CVCC is required as project design advances.

According to the *Natural Environmental Study (refer* to Appendix B1), the natural vegetation communities present in the project area include Disturbed Cheesebush – Sweetbush Scrub and Ephemeral Desert Sand Fields. Disturbed Cheesebush – Sweetbush Scrub (*Ambrosia salsola – Bebbia juncea shrubland alliance*) are located to the east and west of much of the project area along Indian Canyon Drive. Cheesebush (*Ambrosia salsola*) dominates this vegetation community. In addition, common Mediterranean grass (*Schismus barbatus*), Fremont pincushion (*Chaenactis fremontii*), fanleaf crinklemat (*Tiquilia plicata*), and a mixed shrub cover of sweetbush (*Bebbia juncea*), Emory's indigo bush (*Psorothamnus emoryi*), and white bursage (*Ambrosia dumosa*) occur at lower densities. Ephemeral desert sand fields are located along the northern section of the project area. These areas are primarily unvegetated due to surface flows, frequently shifting sandy soils due to high velocity winds, and anthropogenic activities (e.g. frequent disturbance from vehicle traffic and illegal dumping). Vegetation that is present primarily consists of sparsely growing or ruderal plant species including desert twinbugs (*Dicoria canescens*) and Saharan mustard (*Brassica tournefortii*), and infrequent patches of scalebroom (*Lepidospartum squamatum*).

The *Aquatic Resources Delineation Report* (refer to Appendix B4) states the project site is located within the Garnet Hill sub-watershed and Whitewater River watershed, which are part of the larger Salton Sea watershed. Whitewater River and Chino Creek bisect Indian Canyon Drive and are tributaries to the Salton Sea.

The biological study area (BSA) consists of the Indian Canyon Drive right-of-way from Palm Springs Station Road south to Sunrise Parkway, an area surrounding the Amtrak station, and a construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue. Indian Canyon Drive bisects the Whitewater River and Chino Creek. The BSA is generally flat and gently sloping to the east with an elevation ranging from approximately 620 feet at the southern boundary to 660 feet at the northern boundary.

Discussion of Impacts

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 Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation. The *Natural Environment Study* included a literature and database review as well as the following field surveys: a general biological resources assessment, focused burrowing owl surveys, focused special-status plant species surveys, and an aquatic resources delineation. The results of the *Natural Environment Study* are discussed below.

The BSA includes the following: the project alignment and a 500-foot buffer for the burrowing owl surveys; and a 100-foot buffer for the special-status plant surveys and the aquatic resources delineation. The biological surveys were conducted to characterize existing site conditions and assess the probability of occurrence of special-status[12] plant and wildlife species within the study area.

Special-status plant species

Four Federally listed plant species were identified during the literature and database review: the Coachella Valley milk-vetch; triple-ribbed milk-vetch; slender-horned spineflower; and Parish's daisy. However, the BSA occurs outside of the elevation range of triple-ribbed milk-vetch and Parish's daisy, and the BSA does not provide suitable habitat for slender-horned spineflower. Suitable habitat for Coachella Valley milk-vetch occurs within the BSA. Accordingly, focused presence/absence surveys were conducted in 2023 and 2025. As detailed in the *Special-Status Plant Species Survey Report* (Appendix B2), no Coachella Valley milk-vetch plants were observed during the 2023 or 2025 surveys. However, the project would impact 9.55 acres of suitable

[12] "special-status" refers to plant and wildlife species that are Federally-/State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank by the California Native Plant Society; wildlife species that are designated by the California Department of Fish and Wildlife as Fully Protected, Species of Special Concern, or Watch List species; State/locally rare vegetation communities, and species covered under the Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan.

Coachella Valley milk-vetch habitat. The Coachella Valley milk-vetch is a covered species under the CVMSHCP.

Incorporation of Mitigation Measures (MMs) BIO-1 through BIO-6, as well as BIO-8 through BIO-10, would reduce impacts to special-status plant species to a less than significant level. MMs BIO-1 through BIO-6 would protect environmentally sensitive areas by fencing off all zones outside the construction footprint (BIO-1), ensure equipment is cleaned to prevent invasive species (BIO-2), and maintain fluvial sand transport capacity through erosion control and monitoring (BIO-3). It would also safeguard the adjacent Whitewater Floodplain Conservation Area by preventing harmful runoff and chemical discharge (BIO-4, BIO-5) and prohibit vehicle fueling within conservation and aquatic resource areas (BIO-6). Further, the following requirements would be implemented: seeds of Coachella Valley milk-vetch would be collected for restoration (BIO-8); construction workers would be required to receive environmental awareness training (BIO-9); and a biological monitor would ensure compliance with species protection measures (BIO-10).

Special-status animal species

Eight Federally listed animal species were identified during the literature review: California red-legged frog; southern mountain yellow-legged frog; coastal California gnatcatcher; least Bell's vireo; Casey's June beetle; Peninsular bighorn sheep; desert tortoise; and Coachella Valley fringe-toed lizard. Only the Coachella Valley fringe-toed lizard has the potential to occur within the BSA. The BSA is outside of the geographic range of California red-legged frog, southern mountain yellow-legged frog, and Casey's June beetle, and the BSA does not provide suitable habitat for coastal California gnatcatcher, least Bell's vireo, Peninsular bighorn sheep, and desert tortoise; therefore, these seven species are not evaluated further.

Due to the known presence of Coachella Valley fringe-toed lizard in the vicinity of the BSA, and per the CVCC's recommendation, presence within the BSA was assumed and focused surveys for this species were not conducted. The project would not impact Coachella Valley fringe-toed lizard critical habitat. However, in compliance with the CVMSHCP, MM BIO-11 would be implemented, which states no sand removal activities will take place from November 1 to March 30 to avoid winter dormancy periods for lizards.

Burrowing owls are a covered species under the CVMSHCP. Focused surveys were conducted for burrowing owls in 2023. No active burrows or burrowing owls were detected within the BSA. Other species covered under the CVMSHCP include the burrowing owl, flat-tailed horned lizard, LeConte's thrasher, Palm Springs pocket mouse, and Coachella Valley round-tailed ground squirrel. Focused surveys were not conducted for these species, and they were not observed within the BSA during surveys for other species. However, MM BIO-12, which requires a preconstruction burrowing owl survey, as well as MM BIO-13, which requires Le Conte's thrasher surveys, would be required. Implementation of MMs BIO-1 through BIO-6, as well as BIO-11 through BIO-13, would reduce impacts to special-status wildlife species to less than significant.

Non-CVMSHCP special-status species

Non-federally listed special-status species with potential to occur in the greater project vicinity include within the BSA include Crotch's bumble bee, California glossy snake, coast-horned lizard,

golden eagle, loggerhead shrike, pallid bat, Townsend's big-eared bat, western yellow bat, and pocketed free-tailed bat.

While these species may occur in the surrounding areas, the BSA lacks suitable nesting, roosting, or other permanent habitat features necessary to support resident populations of most of these species. Of these species, only the California glossy snake and coast horned lizard have potential to occur within the BSA during construction due to the presence of suitable habitat. However, implementation of Measure BIO-11, which restricts sand removal activities during the species' dormancy period, will avoid and minimize potential impacts to the California glossy snake and coast horned lizard.

Golden eagle, pallid bat, Townsend's big-eared bat, western yellow bat, and pocketed free-tailed bat may forage high over the project site but are not expected to be directly impacted by the proposed project. Indirect impacts to bats could occur during night work that uses bright lights to illuminate the construction area.

MMs BIO-1 through BIO-6, as well as MMs BIO-14 and BIO-15, would reduce impacts to non-CVMSHCP special-status species. MM BIO-14 requires a preconstruction survey for nesting birds during the bird breeding season and implementation of an avoidance area if nests are found. Further, MM BIO-15 would require construction lighting to be shielded so that light will not spill into the conservation area. Incorporation of MMs BIO-1 through BIO-6, as well as BIO-14 and BIO-15, would reduce impacts to non-CVMSHCP special-status species to less than significant.

As demonstrated in the analysis above, with implementation of MMs BIO-1 through BIO-6 and BIO-8 through BIO-15, the project would not 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 Wildlife or U.S. Fish and Wildlife Service. Impacts would be less than significant with implementation of mitigation measures BIO-1 through BIO-6, BIO-14, and BIO-15.

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 Wildlife or US Fish and Wildlife Service?

Less Than Significant with Mitigation. According to *Natural Environment Study*, the project area would impact non-wetland waters of the U.S./waters of the State under the jurisdiction of the U.S. Army Corps of Engineers (USACE) / Regional Water Quality Board (RWQCB) and unvegetated streambed under California Department of Fish and Wildlife (CDFW) jurisdiction. The jurisdictional aquatic resources affected include portions of the Whitewater River and Chino Creek. No wetlands or riparian habitat would be impacted by the proposed project.

Minimization efforts include limiting the proposed impact area to the existing Indian Canyon Drive right-of-way. A Clean Water Act (CWA) Section 404 USACE Permit, Section 401 Water Quality Certification from the RWQCB, and CFGC Section 1602 Streambed Alteration Agreement from the CDFW will be obtained prior to construction. Additionally, MM BIO-16 would be

required, which specifies compensatory mitigation requirements for impacted jurisdictional aquatic resources.

As identified in the *Natural Environment Study*, four sensitive natural communities were identified in the California Natural Diversity Database (CNDDB) as regionally occurring: southern riparian forest, Mojave riparian forest, mesquite bosque, and desert fan palm oasis woodland. In addition, the CVMSHCP mapped ephemeral desert sand fields and stabilized shielded desert sand fields within the BSA, which are considered sensitive because they contribute to important fluvial and sand transport ecological processes and provide habitat for special-status plant and wildlife species. Field surveys determined the BSA supports disturbed cheesebush-sweetbush scrub, disturbed creosote bush scrub, and ephemeral desert sand fields. The BSA does not support southern riparian forest, Mojave riparian forest, mesquite bosque, or desert fan palm oasis woodland. MMs BIO-1 through BIO-6 would be implemented to reduce impacts to sensitive natural communities. Further, MM BIO-7, which establishes compensatory mitigation requirements for sand-affiliated habitat, would be required.

Compliance with the regulatory approvals listed above, as well as MM BIO-1 through BIO 7, and BIO-16, would ensure the project would not 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 Wildlife or US Fish and Wildlife Service. Impacts would be less than significant with the incorporation of mitigation.

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 Impact. The *Aquatic Resources Delineation Report* (ARDR) (refer to Appendix B4) included a comprehensive desktop analysis of literature and data on aquatic resources within the region. Site investigations were conducted on May 24, 2023, and April 14, 2025 by qualified wetland delineators to determine the jurisdictional limits of waters of the U.S. and waters of the State (including streambeds and potential wetlands), located within the proposed project's limits of disturbance. No wetlands were identified as part of the ARDR; as such, the project would not have a substantial adverse effect on state or federally protected wetland. No impact would occur in this regard.

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?

Less than Significant Impact with Mitigation. The BSA provides local wildlife movement opportunities due to the open and relatively unfragmented land between I-10 and Sunrise Parkway. The BSA does not occur within a wildlife linkage or biological corridor as designated by the CVMSHCP. However, the road alignment occurs approximately 1.5 miles east of the Whitewater River Biological Corridor and 1.0 mile west of the Mission Creek Biological Corridor. As a result, the project vicinity provides important natural habitat between the two corridors. MMs BIO-1 through BIO-6 would be implemented to reduce impacts to the biological corridors.

MMs BIO-1 through BIO-6 would protect environmentally sensitive areas by fencing off all zones outside the construction footprint (BIO-1), ensure equipment is cleaned to prevent invasive species (BIO-2), and maintain fluvial sand transport capacity through erosion control and monitoring (BIO-3). It would also safeguard the adjacent Whitewater Floodplain Conservation Area by preventing harmful runoff and chemical discharge (BIO-4, BIO-5) and prohibit vehicle fueling within conservation and aquatic resource areas (BIO-6). Impacts to biological corridors would be less than significant with implementation of mitigation measures.

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFGC). Compliance with the provisions of the MBTA and CFGC would reduce impacts to migratory birds. Further, implementation of MM BIO-14, which requires preconstruction surveys for nesting birds and the establishment of protective buffers if found, would ensure compliance with these laws and regulations.

Additionally, the project proposes the development of a wildlife movement undercrossing to maintain connectivity in the project area. The proposed bridge would be approximately 15 feet in height, restoring natural wildlife movement opportunities under the bridge rather than across Indian Canyon Drive. With adherence to Federal and State regulations, MMs BIO-1 through BIO-6, and BIO-14, would ensure the project would not 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. Impacts would be less than significant with implementation of mitigation measures BIO-1 through BIO-6, and BIO-14.

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

Less than Significant Impact with Mitigation. The City is a Permittee under the CVMSHCP. The project is within the Whitewater Floodplain Conservation Area and is listed as a covered activity in Table 7-5 of the CVMSHCP. The project has been designed to ensure compliance with the following conservation area objectives:

- Fluvial sand transport: The proposed bridge would allow sand-affiliated ecological processes to occur under the bridge, allowing for a more natural process with less impacts to Indian Canyon Drive and Palm Springs Station Road.
- Wildlife movement undercrossing: The proposed bridge would be approximately 15 feet in height, restoring natural wildlife movement opportunities under the bridge rather than across Indian Canyon Drive.

Further, the project's consistency with the CVMSHCP was evaluated during the JPR process initiated for the project. The results of this review are documented in the CVMSHCP Consistency Analysis prepared for the project; refer to Appendix B5. As identified in Appendix B5, the JPR process found the project as proposed conditionally consistent with the CVMSHCP pending the opportunity for further review of the roadway designs. Accordingly, coordination with CVCC is

required as design advances. CVAG is currently coordinating with CVCC on a JPR addendum to address design refinements that have resulted from budget constraints.

The project is required to comply with all applicable avoidance, minimization, and mitigation measures, as well as land use adjacency guidelines, to ensure consistency with the CVMSHCP. Project-related impacts to covered biological resources would be addressed through implementation of the CVMSHCP conservation strategy, including mitigation provided through the established reserve system. Compliance with applicable CVMSHCP requirements, including mitigation measures BIO-1 through BIO-16, would ensure consistency with CVMSHCP conservation objectives. Therefore, the project would not conflict with local policies or ordinances protecting biological resources, and impacts would be less than significant with implementation of mitigation measures BIO-1 through BIO-16.

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?

Less than Significant Impact with Mitigation. The project's consistency with the CVMSHCP was evaluated during the JPR process initiated for the project. The results of this review are documented in the CVMSHCP Consistency Analysis prepared for the project; refer to Appendix B5. As identified in Appendix B5, the JPR process found the project as proposed conditionally consistent with the CVMSHCP pending the opportunity for further review of the roadway designs. Accordingly, coordination with CVCC is required as design advances. CVAG is currently coordinating with CVCC on a JPR addendum to address design refinements that have resulted from budget constraints.

Incorporation of MMs BIO-1 through BIO-16 would ensure the project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Impacts would be less than significant with the incorporation of mitigation measures BIO-1 through BIO-16.

Mitigation Measures:

BIO-1: **Environmentally Sensitive Areas.** All areas outside of the project footprint will be delineated as Environmentally Sensitive Areas with protective fencing.

BIO-2: **Construction Equipment Inspection.** All equipment will be inspected and cleaned prior to use in the project area to minimize exotic species introductions.

BIO-3: **Protection of Fluvial Sand Transport.** To maintain fluvial sand transport capacity within flood prone areas, project activities shall be constructed and operated to ensure that flood flows and associated sediment continue to move through the Project site in their pre-project direction of flow without permanent impoundment, diversion, or disruption of sediment continuity. The bridge structure, roadway elevations, retaining walls, and scour protection features shall function collectively to convey 100-year storm flows through and across North Indian Canyon Drive while allowing temporary scour and deposition processes to occur and naturally re-

equilibrate following storm events. The following pre-, during, and post-construction activities shall be implemented:

- Pre-construction. No permanent grade control, channel lining, or armoring shall be installed beneath the bridge structure, and no project component shall artificially retain fluvial sediment within the active channel or floodplain beyond the duration of a storm event. Construction sequencing and access plans shall avoid creating temporary berms, sediment traps, or transverse obstructions within the fluvial sand transport corridor. Equipment and material stockpiling, spoil storage, or long-term staging shall not occur in the active channel.

- During construction. Temporary materials, stockpiles, or fill placed within the floodplain or channel for construction purposes shall be removed prior to the onset of the rainy season. Excavated material, including drilled pile spoils, shall be exported offsite and shall not be placed within the active channel or floodplain.

- Post-construction. Temporarily disturbed areas within the fluvial sand transport corridor shall be restored to surrounding grades and surface conditions upon completion of construction to allow free passage of floodwaters and sediment. Project operations and maintenance activities shall be conducted in a manner that preserves fluvial sand transport capacity over the life of the facility. Following major storm events, the Project owner shall inspect the bridge crossing, roadway approaches, and adjacent floodplain areas to confirm that sediment movement is occurring in the expected direction of flow and that no project-related features are causing persistent sediment impoundment. Temporary scour around piers and abutments, as well as localized deposition upstream or downstream of the bridge, shall be allowed to naturally refill and equilibrate unless such conditions pose a risk to structural integrity or public safety. If maintenance is required, corrective actions shall be limited to targeted redistribution of sediment to re-establish flow paths and sediment continuity consistent with the approved hydraulic design assumptions. Routine roadway sand removal conducted for public safety following wind or flood events shall be performed using methods that do not create berms, mounds, or obstructions within the fluvial sand transport corridor. Removed sediment shall be placed in locations within the right-of-way that allow continued downstream movement during subsequent storm events and shall not be permanently stockpiled within the floodplain. Maintenance activities shall avoid concentrating flows, increasing velocities beyond modeled conditions, or altering channel gradients in a manner that could induce long-term erosion or deposition.

BIO-4: **Protection of Conservation Area.** The project will implement the following best management practices to ensure that the quantity and quality of any runoff during construction discharged to the adjacent Whitewater Floodplain Conservation Area is not altered in an adverse way when compared with existing conditions.

- Prior to the issuance of grading permits, the contractor shall prepare a Construction Stormwater Pollution Prevention Plan with project-specific erosion and sediment controls such as fiber rolls, straw waddles, and/or hay bales free of nonnative plant materials. Fiber rolls or erosion control mesh shall be made of loose-weave mesh that is not fused at the intersections of the weave, such as jute, or coconut (coir) fiber, or other products without welded weaves. Non-welded weaves reduce entanglement risks to wildlife by allowing animals to push through the weave, which expands when spread.
- BMPs shall be monitored daily and repaired if necessary to ensure maximum erosion and sediment control. All fiber rolls, straw waddles, and/or hay bales utilized within and adjacent to the project site shall be free of nonnative plant materials.
- BMPs shall be implemented immediately before work resumes and inspected daily for proper functioning.
- All construction equipment shall arrive onsite clean and free of soil, seeds, plant fragments, or organic debris to avoid the introduction of exotic plant species into the Conservation Area, consistent with adjacency management principles.
- Remove trash, loose materials, and construction debris daily to prevent wind or water transport into the Conservation Area.

BIO-5: **Best Management Practices.** The contractor will implement best management practices to ensure any toxic or any other chemical that may adversely affect wildlife and plant species, their habitat, or water quality does not discharge to the adjacent Whitewater Floodplain Conservation Area. Best management practices to address toxic and other chemical releases shall include:

- Equipment maintenance and refueling will only occur in designated areas and on an impervious surface, such as a concrete pad or membrane. All fueling areas and mobile fueling trucks must have spill kits, absorbent pads, and containment devices readily available.
- Equipment will be inspected for leaks daily and corrective actions to address leaks shall be implemented immediately.
- Fuel storage tanks and parked or inoperative equipment will have secondary containment that is sufficiently sized to capture and/or contain all of the petroleum products within the associated tank/equipment.

- Store fuels, lubricants, hydraulic fluids, paints, curing compounds, and other hazardous materials in secondary containment at all times.
- Do not conduct fueling, washing, or maintenance of vehicles or equipment within 100 feet of the Conservation Area boundary unless performed on an impermeable, bermed surface that prevents spills from reaching native soils or runoff pathways.

BIO-6: **Fueling Restrictions.** No vehicle fueling shall be conducted within the Whitewater Floodplain Conservation Area or within aquatic resource areas.

BIO-7: **Purchase and Conserve.** Purchase and conserve sand-affiliated habitat in an established Conservation Bank. Mitigation shall occur at a minimum 2:1 for direct impacts. All temporary impacts will be restored onsite within the existing Whitewater Floodplain Conservation Area.

BIO-8: **Coachella Valley Milk-vetch Seed Collection.** Seed of the Coachella Valley milk-vetch will be collected from plants that are within the Area of Effect, if any, prior to construction. The collected seeds will be stored and later used for restoration purposes within the Whitewater Floodplain Conservation Area or CDFW-approved conservation area.

BIO-9: **Worker Environmental Awareness.** An education program will be developed to advise construction staff of potential impacts to listed species.

BIO-10: **Biological Monitor.** Biological monitoring will be provided to oversee compliance with protective measures for listed species.

BIO-11: **Coachella Valley fringe-toed lizard.** To the extent feasible, no sand removal activities will take place from November 1 to March 30 to avoid winter dormancy periods for lizards or if ambient air temperatures exceed 102 degrees Fahrenheit (the temperature at which lizard activity tends to be reduced).

BIO-12: **Preconstruction Burrowing Owl Survey.** Prior to the start of construction activities, the construction area and adjacent areas within 500 feet of the construction activities, or to the edge of the property if less than 500 feet, will be surveyed by an Acceptable Biologist for burrows that could be used by burrowing owl. If a suitable burrow is located, the biologist will determine if an owl is present in the burrow in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Two surveys will be conducted to clear the area: the first one will take place 14-30 days before, and the second one 24 hours before, any vegetation removal or ground-disturbing activities. If the Acceptable Biologist determines the burrow is occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season or a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No construction activities will be permitted within the buffer until the young are no longer dependent on the burrow as determined by the Acceptable Biologist.

Following completion of the clearance survey, the qualified biologist should prepare and submit a final report documenting the methods and results of the survey.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the construction activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

BIO-13: **LeConte's thrasher.** In modeled LeConte's thrasher habitat in the Whitewater Floodplain Conservation Area, during the nesting season, January 15–June 15, prior to the start of construction activities, surveys will be conducted by an Acceptable Biologist on the construction site and within 500 feet of the construction site, or to the property boundary if less than 500 feet. If nesting Le Conte's thrashers are found, a 500-foot buffer, or to the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction will be permitted within the buffer during the breeding season (January 15–June 15) or until the young have fledged as determined by the Acceptable Biologist.

BIO-14: **Migratory Birds.** If construction commences during the bird breeding season (March 1 through June 30), a preconstruction survey for nesting birds will occur within three days prior to construction activities by an experienced avian biologist. The survey will occur within all suitable nesting habitat within the project impact area and a 500-foot buffer where access is permitted. If nesting birds are found, an avoidance area will be established as appropriate by a qualified biologist around the nest until it has determined that young have fledged or nesting activities have ceased. The project site will need to be re-surveyed if there is a lapse in construction activities for more than seven days during the nesting season.

BIO-15: **Night Lighting.** Any necessary lighting during construction shall be shielded and directed toward the project area and shall not spill over into the Whitewater Floodplain Conservation Area. Temporary lighting used during construction shall meet the following parameters:

- Lighting will have temperatures of 3,000 Kelvin or less.
- Lighting shall be shielded and directed away from the conservation area so as to prevent spill over.

- When lighting spill over into the conservation area is unavoidable, lighting shall not exceed 15 lux (or 5 lux above baseline) as measured from 50 feet beyond the Project boundary.
- Lighting fixtures shall have motion detection and automatic shutoff functionality.

BIO-16: **Compensatory Mitigation for Aquatic Resources.** Mitigation for permanent impacts to USACE, RWQCB, and CDFW jurisdiction would occur at a minimum 1:1 ratio. Options to achieve this mitigation requirement would be determined during discussions with the agencies during the regulatory permitting process and could include on-site restoration, off-site property acquisition, or purchase of mitigation bank credits.

4.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
CULTURAL RESOURCES: *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

The City's General Plan Recreation, Open Space, and Conservation Element states the original inhabitants of the Palm Springs area were the Cahuilla Indians. As noted in the *Archaeological Survey Report* prepared for the project, by the late prehistoric period, the Coachella Valley was home to the Cahuilla people. They inhabited the San Gorgonio Pass (referred to as the Pass Cahuilla), San Jacinto and Santa Rosa Mountains (Mountain Cahuilla), and the Coachella Valley and the northern end of Imperial Valley. The Cahuilla are linked to other Takic language family groups such as the Serrano and Luiseño and share many aspects of culture and religion with those tribes. From the mid-1500s to the 1800s, Spanish explorers, Mexican ranchers, and later American settlers variously contacted the Cahuilla people. It was not until the mid-1870s that a push to settle the Coachella Valley occurred when the Southern Pacific Railroad transected the western Colorado Desert through the Coachella Valley.

This section is based upon the following studies prepared for the project:

- *Historic Property Survey Report* (Cogstone Resource Management, March 2026); due to the inclusion of sensitive and confidential information, the cultural report is not available to the general public.
- *Archaeological Survey Report* (Cogstone Resource Management, March 2026); due to the inclusion of sensitive and confidential information, the cultural report is not available to the general public.

Discussion of Impacts

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

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

No Impact. The *Historic Property Survey Report* concluded there are no historic properties within the project area; and therefore, the project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5. No impact would occur in this regard.

The *Archaeological Survey Report* included a pedestrian survey of the project area, as well as a database review and records search of the following: the California Historical Resources Information System (CHRIS) from the Eastern Information Center (EIC); the National Register of Historic Places (NRHP); California Register of Historical Resources (CRHR); Built Environment Resource Directory (BERD); California Historical Landmarks (CHL); and California Points of Historical Interest (CPHI).

Results of the record search indicate that 11 previous studies have been completed within the area of potential effects (APE) while an additional 56 studies have been completed previously within a one-mile radius of the APE. The APE is approximately 50.35 acres and was drawn to include potential indirect impacts to one (1) historic archaeological site (Garnet Station). The Area of Direct Impact (ADI) includes the project footprint where areas of anticipated ground-disturbing activities will occur. The ADI is 34.79 acres and is within the road right-of-way. No new cultural resources were identified during the survey, and the Garnet Station was reidentified and updated on California Department of Parks and Recreation 523 series forms. The previously recorded historic archaeological site consists of a foundation and refuse scatter.

The survey consisted of walking parallel transects spaced at three-meter intervals within the APE while closely inspecting the ground surface. Ground surface visibility within the undeveloped segments of the APE varied from 40 percent to 100 percent dependent on vegetation. No new cultural resources were identified during the survey. The previously recorded archaeological resource would not be impacted as part of project implementation because it is located outside of the project footprint.

Therefore, the project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5 and no impact would occur.

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

Less Than Significant Impact. No evidence of human remains was identified as part of the *Archaeological Survey Report*. Nonetheless, if human remains are found, those remains would require treatment, in accordance with applicable laws. State of California Public Resources Health and Safety Code Section 7050.5 through 7055 describe the general provisions for human remains. Specifically, State Health and Safety Code Section 7050.5 requires if any human remains are

accidentally discovered during excavation of a site, the County Coroner shall be notified of the find immediately, and no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. As required by State law, if the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC and shall have the opportunity to offer recommendations for the disposition of the remains. Following compliance with applicable State laws, impacts related to the disturbance of human remains would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.6 Energy

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

Setting

This section is based upon the following document prepared for the project:

- CVAG Roadway Improvements Detailed Report (Michael Baker International, November 18, 2025); refer to Appendix A, Air Quality/Greenhouse Gas/Energy Modeling.

Regulatory Framework

Palm Springs General Plan 2040

The Palm Springs General Plan 2040 (General Plan) contains a Recreation, Open Space, and Conservation Element which provides guidance for the City's natural resources and energy conservation. The following goals and policies are applicable to the proposed project:

Goal RC2: Ensure that parks are safe, well maintained, and provide a pleasant experience for residents and visitors.

Goal RC8: Employ the efficient, sustainable, and environmentally appropriate use and management of energy and mineral resources to ensure their availability for future generations.

Discussion of Impacts

Appendix F of the CEQA Guidelines

Appendix F of the CEQA Guidelines is an advisory document that assists environmental document preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. The analysis in Response 4.6(a) relies upon Appendix F of the CEQA Guidelines, which includes the following criteria to determine whether this threshold of significance is met:

- **Criterion 1**: The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.

- **Criterion 2**: The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- **Criterion 3**: The effects of the project on peak and base period demands for electricity and other forms of energy.
- **Criterion 4**: The degree to which the project complies with existing energy standards.
- **Criterion 5**: The effects of the project on energy resources.
- **Criterion 6**: The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Quantification of the project's energy usage is presented and addresses **Criterion 1**. The discussion on construction-related energy use focuses on **Criteria 2, 4,** and **5**. The discussion on operational energy use is divided into transportation energy demand and building energy demand. The transportation energy demand analysis discusses **Criteria 2, 4,** and **6**, and the building energy demand analysis discusses **Criteria 2, 3, 4,** and **5.**

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

Less Than Significant Impact. Due to the nature of the proposed project (roadway improvements), operation of the proposed project would not generate additional vehicle trips or consume a significant quantity of energy (electricity or natural gas). As such, the following evaluation would only analyze energy consumption associated with construction of the proposed project. The project construction activities would occur in two phases and involve grubbing land clearing, grading, excavation, and paving. Construction activities would progress by completing one section of the roadway at a time while maintaining public access and operational status throughout the other section.

The California Emissions Estimator Model (CalEEMod) version 2022.1 was utilized to calculate the project's construction energy consumption. The estimated construction fuel consumption is based on the proposed project's construction equipment list, timing/phasing, and hours of duration for construction equipment, as well as vendor, hauling, and construction worker trips. Project construction would require temporary energy consumption primarily using fuel for construction equipment, construction worker vehicle trips to and from the project site, and the import and export of earth materials to and from the project site by heavy trucks. Energy consumption during construction, including gasoline and diesel fuel consumption from construction equipment, hauling trips, vendor trips, and worker trips, was estimated using the assumptions and factors from CalEEMod. The project's estimated energy consumption is summarized in Table 4.6-1, *Project and Countywide Energy Consumption*.

Table 4.6-1. Project and Countywide Energy Consumption

Energy Type	Project Annual Energy Consumption[1]	Riverside County Annual Energy Consumption[2]	Percentage Increase Countywide
Construction			
Construction Off-Road Fuel Consumption	173,059 gallons	30,111,952 gallons	0.5747%
Construction On-Road Fuel Consumption	49,056 gallons	862,393,259 gallons	0.0057%

Notes:
1. Project electricity consumptions as modeled in California Emissions Estimator Model Version 2022.1 (CalEEMod) computer model. Project fuel consumption calculated based on CalEEMod results. Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB EMFAC2021.
2. The project construction off-road fuel consumption was compared with Riverside's projected Countywide off-road fuel consumption in 2026; on-road fuel consumption was compared with the projected Countywide on-road fuel consumption in 2026.

Source: Refer to Appendix A, *Air Quality/Greenhouse Gas Emissions/Energy Modeling* for energy assumptions used in this analysis.

As shown in Table 4.6-1, the project's construction off-road fuel consumption from construction equipment would increase the County's consumption by 0.5747 percent; and on-road vehicle fuel consumption during construction would increase the County's consumption by 0.0057 percent, respectively.

Construction-Related Energy Consumption

During construction, the project would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass.

Fossil fuels for construction vehicles and other energy-consuming equipment would be used during demolition, grading, building construction, paving, and architectural coating. As indicated in Table 4.6-1, off-road fuel consumption and on-road fuel consumption from construction would be approximately 173,059 gallons and 49,056 gallons, respectively. Consequently, the project's off-road construction equipment diesel fuel consumption and on-road construction fuel consumption would increase Riverside County's consumption by 0.5747 percent and 0.0057 percent, respectively. As such, project construction would have a minimal effect on the local and regional energy supplies and would not require additional capacity (**Criterion 2**).

Some incidental energy conservation would occur during construction through compliance with State requirements that equipment not in use for more than five minutes be turned off (i.e., Title 13, California Code of Regulations Section 2485). Project construction equipment would also be required to comply with the latest U.S. Environmental Protection Agency (USEPA) and CARB engine emissions standards. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. In addition, because the cost of fuel and transportation is a significant aspect of construction budgets, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction (**Criterion 4**).

Substantial reductions in energy inputs for construction materials can be achieved by selecting building materials composed of recycled materials that require substantially less energy to

produce than nonrecycled materials.[13] The integration of green building materials can help reduce environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of these building industry source material. The project-related incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials (e.g., lumber and gas) would not substantially increase demand for energy compared to overall local and regional demand for construction materials. Further, it is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual project characteristics that would necessitate the use of construction equipment, or building materials, or methods that would be less energy efficient than at comparable construction sites in the region or State. Therefore, fuel energy and construction materials consumed during construction would not represent a significant demand for energy resources (**Criterion 5**) and a less than significant impact would occur in this regard.

Operational Energy Consumption

As discussed above, the proposed project would construct an elevated roadway bridge system and a 1.6-mile multi-use trail. These roadway improvements are not a trip generating land use and would not directly increase the existing vehicular trips on surrounding roadways. The City of Palm Springs will continue to maintain the roadway as needed during and after flood and blowsand events.

These roadway improvements would not include structures that consume significant electricity or natural gas. It should be noted that roadway improvements would potentially consume electricity for lighting purposes during nighttime hours however, the project's total electricity consumption would be nominal compared to the County's total consumption. As such, implementation of the proposed project would not increase fuel consumption associated with vehicle trips or significantly increase energy demands. A less than significant impact would occur in this regard.

Conclusion

The project would adhere to federal, State, and local requirements for energy efficiency. Additionally, the project would not result in a substantial increase in energy demand which would require the need for new or expanded sources of energy supply or new or expanded energy infrastructure (i.e., transmission lines, energy storage facilities, electrical grids, etc.). Therefore, the proposed project would not cause wasteful, inefficient, and unnecessary consumption of energy during operation, or preempt future energy development or future energy conservation. A less than significant impact would occur in this regard.

[13] California Department of Resources Recycling and Recovery, *Green Building*, https://calrecycle.ca.gov/greenbuilding/, accessed November 20, 2025.

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

Less Than Significant Impact. This analysis will focus on project consistency with applicable goals and policies within the City's General Plan related to energy conservation as well as the City's adopted *Palm Springs 2013 Climate Action Plan* (CAP). The General Plan contains various objectives and policies that would encourage energy conservation for existing and future buildings, however, due to the nature of the proposed project (roadway improvements), most of these objectives and policies are not applicable. Nevertheless, the project would comply with all applicable goals and policies identified in the City's General Plan, as listed in Table 4.6-2, *Consistency with the General Plan*.

Table 4.6-2. Consistency with the General Plan

Policies	Project Consistency
Goal RC2: Ensure that parks are safe, well maintained, and provide a pleasant experience for residents and visitors.	
Policy RC2.4. Incorporate efficient water and energy use and conservation principles in the design and retrofit of parks and recreation facilities, including expanding the use of reclaimed water.	Consistent. The proposed project would potentially include landscaping along the length of the trail. The proposed project would incorporate water efficient irrigation, as applicable, in accordance with Title 24 standards.
Goal RC8: Employ the efficient, sustainable, and environmentally appropriate use and management of energy and mineral resources to ensure their availability for future generations.	
Policy RC8.2. Support and encourage the use of alternative energy sources, such as cogeneration, solar, wind, ethanol and natural gas, fuel cell technologies, and other alternative and sustainable fuel sources and generating industries to provide more reliability in the supply of electricity to the City and to promote the development of clean, sustainable, and alternative energy industries in the City. The use of alternative energy sources should also be encouraged in the construction of new buildings and retrofit of existing buildings	Consistent. SCE, the electricity provider for the City, is subject to California's Renewable Portfolio Standard, which would increase procurement from eligible renewable energy resources.

The City also adopted the *Palm Springs 2013 Climate Action Plan* (CAP) in May 2013. The CAP was adopted to address climate change at a local level and aims at reducing the City's overall greenhouse gas emissions. The CAP addresses energy efficiency and contains various measures that would promote energy efficiency, thereby reducing overall greenhouse gas emissions. However, it should be noted that the CAP's measures pertaining to energy efficiency focus on retrofitting residential or commercial buildings, new developments, and the transportation sector (i.e., promotion of electrical vehicles, bicycle infrastructure, etc.). Since the proposed project is a roadway improvement project, these measures are not applicable.

As discussed above, construction-related fuel energy and construction materials consumed during construction would not represent a significant demand for the County's projected energy resources. A nominal amount of electricity would be used for light but would be minimal compared to the County's total electricity consumption. Additionally, per the RPS, the project would utilize electricity that would achieve 60 percent of total procurement by 2030, and 100

percent renewable energy by 2045. As such, the project would comply with State energy plans. Thus, a less than significant impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

4.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS: *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

Southern California's geologic structure is dominated by primarily northwest-trending faults associated with the San Andreas system. The project site is located in a seismically active region where earthquakes originating on local and regional faults can produce strong groundshaking.

The City's General Plan identifies two active faults within the vicinity of the project site: the Banning Faults, located approximately 1.5 miles north of the northern extent of the project site, and the Garnet Hill Faults, located approximately 4.9 miles northwest of the northern extent of the project site. There are also several faults capable of producing strong seismic shaking near the project site: the San Andreas, San Gorgonio Pass, and San Jacinto faults.

Discussion of Impacts

a) (i)Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. Ground rupture is most likely along active faults and typically occurs during earthquakes of magnitude five or higher. Ground rupture only affects the area immediately adjacent to a fault.

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act requires the State Geologist to establish regulatory zones, known as Alquist-Priolo (AP) Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (typically 50 feet).

According to the California Department of Conservation's Earthquake Hazards Zones map, the project site is not located on an active fault, nor is it included in any Alquist-Priolo Earthquake Fault Zones.[14] The nearest earthquake fault is the Banning Fault within the San Andreas fault zone, approximately 1.5 miles to the north. The project is not located on an active fault or fault identified on an Alquist-Priolo Earthquake Fault Zoning Map; and therefore, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. Impacts would be less than significant.

[14] California Department of Conservation, *EQ Zapp: California Hazards Zone Application*, https://www.conservation.ca.gov/cgs/geohazards/eq-zapp, accessed February 20, 2025.

a) (ii)Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less Than Significant Impact. Based on the proximity to a known fault zone, strong ground shaking can be expected at the site during moderate to severe earthquakes within the region. Intensity of ground shaking at a given location depends primarily upon earthquake magnitude, site distance from the source, and site response (soil type) characteristics.

While the potential for strong seismic ground shaking cannot be eliminated, the project would be designed in accordance with applicable Caltrans seismic design requirements pursuant to California Streets and Highways Code Section 137. Bridge structures would be designed and constructed consistent with the Caltrans Seismic Design Criteria and the American Association of State Highway and Transportation Officials (AASHTO) Bridge Design Specifications, including applicable seismic provisions. These standards establish performance-based criteria for seismic loading, structural resilience, and collapse prevention. Compliance with these requirements would ensure that the proposed bridge structures are designed to withstand expected seismic forces within the region. Therefore, the project would not directly or indirectly cause potential substantial adverse effects related to strong seismic ground shaking, and impacts would be less than significant.

a) (iii)Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Soil liquefaction occurs when loose, saturated sandy soil deposits lose internal strength and transform from a solid to a liquefied state due to reduced stresses within the soils mass. This phenomenon is most often induced by strong ground shaking associated with earthquakes. Generally, liquefaction can occur if all of the following conditions apply: liquefaction-susceptible soil, groundwater within a depth of 50 feet or less, and strong seismic shaking.

According to the General Plan, the project site is located in an area with low susceptibility to liquification due to groundwater depths greater than 50 feet. Therefore, the project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. A less than significant impact would occur.

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

Less Than Significant. The site is located in an area that has relatively flat terrain, without significant slopes located on the site. The City's General Plan identifies a hillside and mountainous area north of the project site as susceptible to landslides. Rock falls and landslides are possible in the event of an earthquake. However, due to distance being greater than 0.5-mile the potential for landslides would be less than significant.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Development of the project is anticipated to involve grading and ground disturbance during construction activities. There is the potential for these activities to expose soils and increase the potential for soil erosion from wind or stormwater runoff. Pursuant to the CBC, the project applicant must prepare an Interim Erosion and Sediment Control Plan. The project is required to comply with the National Pollutant Discharge Elimination System (NPDES), and because the project would disturb a soil area of one (1) or more acres, the project is required to obtain and comply with the State Water Resources Control Board (SWRCB) NPDES General Permit waste discharge requirements for discharges of storm water runoff associated with construction activity.[15] The project is also required to include preparation of a Storm Water Pollution Prevention Plan (SWPPP) that recommends appropriate Best Management Practices (BMPs) to control erosion and sediment. Compliance with the requirements of the CBC, as well as NPDES requirements for erosion control, grading, and soil remediation, would ensure that impacts related to soil erosion are reduced to 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?

Less Than Significant. The project would not 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. Refer to Response 4.7 (a.i) and 4.7 (a.iii). Less than significant impacts from the project would occur.

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?

Less Than Significant Impact. Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. The expansion potential of any particular expansive soil is determined by the percentage of clay and the type of clay in the soil. Expansive near-surface soil is subject to high volume changes during seasonal fluctuations in moisture content, which can cause cracking of shallow foundations, floor slabs, concrete flatwork, and pavements. The project site soils consist primarily of alluvium sand and gravel and stream channel gravel and sand, not clay soil. Therefore, the type of clay soil generally associated with soil expansion is not anticipated to be found on the project site. Thus, there is little potential for soil expansion on the site and the project would not create substantial risks to life or property. Site construction techniques would comply with City and State design standards to minimize risks associated with expansive soils. Less than significant impacts to expansive soils would occur.

[15] California State Water Resources Control Board, *National Pollutant Discharge Elimination System (NPDES) General Permit For Stormwater Discharges Associated With Construction And Land Disturbance Activities (General Permit) Order WQ 2022-0057-DWQ NPDES NO. CAS000002*, Adopted September 8, 2022.

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?

No Impact. The project does not entail the use of septic tanks or wastewater disposal systems; and therefore, the project would have no impact related to the ability of soils to support septic tanks or alternative wastewater disposal systems.

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

Less than Significant Impact. As identified on Figure OS-8, *Paleontological Sensitivity*, from the County of Riverside General Plan, paleontological sensitivity in the project area is considered low. However, there is always the possibility that unknown paleontological resources may be unearthed during construction. It is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the nature and significance of the find. Accordingly, the project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

4.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS: *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

This section is based upon the following document prepared for the project:

- CVAG Roadway Improvements Detailed Report (Michael Baker International, November 18, 2025); refer to Appendix A, Air Quality/Greenhouse Gas/Energy Modeling.

Regulatory Framework

State

Executive Order S-3-05

Executive Order S-3-05 set forth a series of target dates by which Statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The Executive Order directed the California Environmental Protection Agency (Cal/EPA) Secretary to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary is required to submit biannual reports to the Governor and California Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with Executive Order S-3-05, the Cal/EPA Secretary created the California Climate Action Team, made up of members from various State agencies and commissions. The Climate Action Team released its first report in March 2006, which proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

Executive Order S-13-08

Executive Order S-13-08 seeks to enhance the State's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of State's first climate adaptation strategy. This will result in consistent guidance from experts on how to address climate change impacts in California.

Assembly Bill 32 (California Global Warming Solutions Act of 2006)

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500-38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on Statewide GHG emissions. AB 32 requires that Statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 specifies that regulations adopted in response to Assembly Bill (AB) 1493 (Pavley Bill) should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then the California Air Resources Board (CARB) should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

Senate Bill 375

Senate Bill (SB) 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities' strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, is required to provide each affected region with GHG reduction targets emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets are to be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding.

Senate Bill 32

Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

CARB Scoping Plan

On December 11, 2008, CARB adopted its *Climate Change Scoping Plan* (Scoping Plan), which functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. The Scoping Plan contains the main strategies California will implement to reduce CO_2e emissions by 174 million metric tons (MMT), or approximately 30 percent, from the State's projected 2020 emissions levels of 596 $MMTCO_2e$ under a business as

usual (BAU) scenario. This is a reduction of 42 $MMTCO_2e$, or almost ten percent, from 2002 to 2004 average emissions, and requires the reductions in the face of population and economic growth through 2020.

The Scoping Plan calculates 2020 BAU emissions as the emissions that would be expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from the past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, industrial, commercial, and residential). CARB used three-year average emissions, by sector, from 2002 to 2004 to forecast emissions to 2020. The measures described in the Scoping Plan are intended to reduce projected 2020 BAU emissions to 1990 levels, as required by AB 32.

AB 32 requires CARB to update the Scoping Plan at least once every five years. CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32. The Scoping Plan update also looks beyond 2020 toward the 2050 goal, established in Executive Order S-3-05, and observes that "a mid-term statewide emission limit will ensure that the State stays on course to meet our long-term goal."

On January 20, 2017, CARB released the proposed Second Update to the Scoping Plan, which identifies the State's post-2020 reduction strategy. The Second Update was finalized in November 2017 and approved on December 14, 2017, and reflects the 2030 target of a 40 percent reduction below 1990 levels, set by Executive Order B-30-15 and codified by SB 32. The 2017 Scoping Plan Update establishes a new Statewide emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030.

On December 15, 2022, CARB released the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan), which identifies the strategies achieving carbon neutrality by 2045 or earlier. The 2022 Scoping Plan contains GHG reductions, technology, and clean energy mandated by statutes. The 2022 Scoping Plan was developed to achieve carbon neutrality by 2045 through a substantial reduction in fossil fuel dependence, while at the same time increasing deployment of efficient non-combustion technologies and distribution of clean energy. The plan would also reduce emissions of short-lived climate pollutants (SLCPs) and would include mechanical CO_2 capture and sequestration actions, as well as emissions and sequestration from natural and working lands and nature-based strategies. Under 2022 Scoping Plan, by 2045, California aims to cut GHG emissions by 85 percent below 1990 levels, reduce smog-forming air pollution by 71 percent, reduce the demand for liquid petroleum by 94 percent compared to current usage, improve health and welfare, and create millions of new jobs. This plan also builds upon current and previous environmental justice efforts to integrate environmental justice directly into the plan, to ensure that all communities can reap the benefits of this transformational plan. Specifically, this plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.

- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands (NWL) to the State's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

California Building Energy Efficiency Standards (Title 24)

The California Energy Efficiency Standards for Residential and Nonresidential Buildings, Title 24, Part 6 of the California Code of Regulations (CCR) and commonly referred to as "Title 24," were established in 1978 in response to a legislative mandate to reduce California's energy consumption. Part 6 of Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest Title 24 (2022 Title 24) standards took effect on January 1, 2023. The California Energy Commission updates the standards every three years. As such, buildings whose permit applications are applied for on or after January 1, 2026, must comply with the 2025 Title 24 (2025 Energy Code). The 2025 Energy Code would expand on the existing 2022 Title 24 standards (i.e., promote the use of heat pumps in new residential development, electrical readiness, updated ventilation standards, etc.).

Regional

2024-2050 Regional Transportation Plan/ Sustainable Communities Strategy

On April 2024, the Regional Council of the Southern California Association of Governments (SCAG) formally adopted the Connect SoCal: 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal 2024). The Connect SoCal 2024 outlines a vision for a more resilient and equitable future, with investment, policies, and strategies for achieving the region's shared goals through 2050. The Connect SoCal 2024 sets forth a forecasted regional development pattern which, when integrated with the transportation network, measures, and policies, will reduce GHG emissions from automobiles and light-duty trucks and achieve the GHG emissions reduction target for the region set by the CARB. In addition, the Connect SoCal 2024 is supported by a combination of transportation and land use strategies that outline how the region can achieve California's GHG-emission-reduction goals and federal Clean

Air Act requirements. These are articulated in a set of Regional Strategic Investments, Regional Planning Policies, and Implementation Strategies. The Regional Planning Policies are a resource for County Transportation Commissions (CTCs) and local jurisdictions, who can refer to specific policies to demonstrate alignment with the Connect SoCal 2024 when seeking resources from state or federal programs. The Implementation Strategies articulate priorities for SCAG efforts in fulfilling or going beyond the Regional Planning Policies.[16]

On May 7, 2025, CARB officially accepted SCAG's determination that Connect SoCal 2024 meets the state's GHG reduction targets. The plan demonstrates strategies to achieve per capita GHG reductions of 8 percent by 2020 and 19 percent by 2035 compared to 2005 levels, through goals such as:

- Build and maintain an integrated multimodal transportation network.
- Develop, connect, and sustain communities that are livable and thriving.
- Create a healthy region for the people of today and tomorrow.
- Support a sustainable, efficient, and productive regional economic environment that provides opportunities for all.

CARB's acceptance confirms that Connect SoCal 2024 is consistent with SB 375 requirements and aligns with California's climate goals.

Local

City of Palm Springs General Plan

The *Palm Spring General Plan 2040* (General Plan) sets forth the City's vision for the physical development of the community and contains goals and policies. The following goals and policies related to GHGs that would be applicable to the proposed project:

GOAL CR1: Establish and maintain a safe, efficient, interconnected circulation system that accommodates vehicular travel, walking, bicycling, public transit, and other forms of transportation

Policy CR1.1 Develop a system of roadways that provides travel choices and reduces traffic congestion.

GOAL CR2: Provide a circulation network that maintains a safe and efficient system for all travel modes and users of all ages and mobilities.

Policy CR2.1 Maintain a network of complete streets throughout the city to provide connectivity for all travel modes.

Policy CR2.8 Improve connectivity and resiliency in and out of the City by constructing all-weather bridge crossings and other infrastructure enhancements along major

[16] Southern California Association of Governments, *Connect SoCal: A Plan for Navigating to a Brighter Future (2024-2050 Regional Transportation Plan/Sustainable Communities Strategy)*, adopted April 4, 2024.

access corridors like Vista Chino, Gene Autry Trail, Indian Canyon Drive, and Palm Canyon Drive.

Palm Springs Climate Action Plan

On October 15, 2019, the Palm Springs Sustainability Commission agreed to develop a roadmap to acknowledge the seriousness of our current climate crisis, describe what the City has already done and plans to do to address climate change, and identify potential additional actions. The goal is to reduce greenhouse gas emissions to 1990 levels by 2020, 80 percent below 1990 by 2050, and achieve carbon neutrality for municipal emissions by 2030. This is consistent with the target identified by the state in AB 32. The City's currently approved CAP developed in 2013 does not provide criteria applicable for the proposed project.

Thresholds of Significance

Amendments to CEQA Guidelines Section 15064.4 were adopted to assist lead agencies in determining the significance of the impacts of GHG emissions and gives lead agencies the discretion to determine whether to assess those emissions quantitatively or qualitatively. This section recommends certain factors to be considered in the determination of significance (i.e., the extent to which a project may increase or reduce GHG emissions compared to the existing environment; whether the project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHGs). The amendments do not establish a threshold of significance; rather, lead agencies are granted discretion to establish significance thresholds for their respective jurisdictions, including looking to thresholds developed by other public agencies or suggested by other experts, such as the California Air Pollution Control Officers Association (CAPCOA), so long as any threshold chosen is supported by substantial evidence (CEQA Guidelines Section 15064.7(c)). The California Natural Resources Agency has also clarified that the CEQA Guidelines amendments focus on the effects of GHG emissions as cumulative impacts, and therefore GHG emissions should be analyzed in the context of CEQA's requirements for cumulative impact analyses (CEQA Guidelines Section 15064(h)(3)).[17,18] A project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area of the project.[19]

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Nor have the South Coast Air Quality Management District (SCAQMD), CARB, or any other State or regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the project. Since there is no applicable adopted or accepted

[17] California Natural Resources Agency, *Final Statement of Reasons for Regulatory Action*, pp. 11-13, 14, 16, December 2009, https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Final_Statement_of_Reasons.pdf, accessed November 18, 2025.

[18] State of California Governor's Office of Planning and Research, *Transmittal of the Governor's Office of Planning and Research's Proposed SB97 CEQA Guidelines Amendments to the Natural Resources Agency*, April 13, 2009, https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C01.pdf, accessed November 18, 2025.

[19] 14 CCR Section 15064(h)(3).

numerical threshold of significance for GHG emissions, the methodology for evaluating the project's impacts related to GHG emissions focuses on its consistency with Statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the project's GHG-related impacts on the environment.

Notwithstanding, for informational purposes, the analysis also calculates the amount of GHG emissions that would be attributable to the project using recommended air quality models, as described below. The primary purpose of quantifying the project's GHG emissions is to satisfy CEQA Guidelines Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. The estimated emissions inventory is also used to determine if there would be a reduction in the project's incremental contribution of GHG emissions as a result of compliance with regulations and requirements adopted to implement plans for the reduction or mitigation of GHG emissions. However, the significance of the project's GHG emissions impacts is not based on the amount of GHG emissions resulting from 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?

Less Than Significant Impact. The proposed roadway improvement project would result in direct source emissions of CO_2, CH_4, and N_2O, and would not result in other GHGs that would facilitate a meaningful analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct project-related GHG emissions include emissions from construction activities. The project construction activities would involve grubbing and land clearing, grading and excavation, linear, the installation of drainage and utilities, and paving. Construction activities will progress by completing one section of the roadway at a time while maintaining public access and operational status throughout the other section.

The proposed project would not include new permanent stationary or mobile sources of emissions, and therefore, by its very nature, would not generate quantifiable GHG emissions from operations. The roadway improvement project does not directly generate vehicle trips, a predominant source of GHG emissions. Construction input data for California Emissions Estimator Model version 2022.1 (CalEEMod) include but are not limited to (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; and (3) areas to be excavated and graded. Construction GHG emissions were quantified by estimating the types and quantity of equipment that would be used on-site during each construction phase, as provided by the model defaults. Table 4.8-1, *Estimated Greenhouse Gas Emissions*, presents the estimated CO_2, N_2O, and CH_4 emissions associated with the proposed project construction activities; refer to Appendix A, *Air Quality/Greenhouse Gas Emissions/Energy Modeling* for the CalEEMod outputs.

Table 4.8-1. Estimated Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	Refrigerants	CO_2e[2]
	Metric Tons/year[1]				
Direct Emissions					
Total Construction (amortized over 30 years)	93.43	0.03	0.003	0.02	94.43
Project Total Emissions	**94.43 $MTCO_2e$ per year**				
Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent 1. Totals may be slightly off due to rounding.					
Source: Refer to Appendix A, *Air Quality/Greenhouse Gas Emissions/Energy Modeling* for assumptions used in this analysis.					

Construction Emissions. Construction GHG emissions are amortized (i.e., total construction emissions divided by the lifetime of the project, assumed to be 30 years).[20] As shown in Table 4.8-1, construction of the proposed project would result in a total of 94.43 $MTCO_2e$ per year when amortized over 30 years.

In conclusion, as shown in Table 4.8-1, the total amount of project-related GHG emissions from direct and indirect sources combined would total 94.43 $MTCO_2e$ per year, and impacts would be less than significant in this regard.

Consistency with Applicable GHG Plans, Policies, or Regulations

The GHG plan consistency analysis for the project is based on the project's consistency with SCAG's Connect SoCal 2024, CARB's 2022 Scoping Plan, and the City's CAP. The Connect SoCal 2024 sets forth a forecasted regional development pattern which, when integrated with the transportation network, measures, and policies, will reduce GHG emissions from automobiles and light-duty trucks and achieve the GHG emissions reduction target for the region set by the CARB. The Connect SoCal 2024 incorporates local land use projections and circulation networks in city and county general plans. The 2022 Scoping Plan describes the approach California will take to reduce GHG emissions by 40 percent below 1990 levels by the year 2030. The CAP outlines GHG reduction measures for various sectors, including transportation, land use, energy, solid waste, water, and wastewater.

SCAG Connect SoCal 2024 Consistency Analysis

As previously stated, the latest Connect SoCal 2024 was adopted on April 4, 2024. The goals established for Connect SoCal 2024 provide a foundation for setting a vision for how the future of the SCAG Region will evolve over the next 25 years. The plan performance assessment process provides an important means for determining how well the program of investments included in Connect SoCal correspond to its foundational goals and to its vision for the future of the SCAG Region. Table 4.8-2, *Connect SoCal 2024 Project Consistency Analysis*, shows the project's consistency with the four categories found within the Connect SoCal 2024. The Connect SoCal 2024 consists of a set of four high-level goals, as presented in Table 4.8-2. Each of the four

[20] In accordance with the SCAQMD guidance, projected GHGs from construction have been quantified and amortized over 30 years, which is the number of years considered to represent the life of the project. The amortized construction emissions are added to the annual average operational emissions.

Connect SoCal goals are supported by three sub-goals which provide more specific objectives within that specific focus area. The plan performance measures are designed to support achievement of these regional goals and sub-goals, with many of the measures supporting multiple goals. As shown therein, the proposed project would be consistent with the GHG emission reduction strategies contained in the Connect SoCal 2024, and impacts would be less than significant in this regard.

Table 4.8-2. Connect SoCal 2024 Project Consistency Analysis

Goals and Sub-Goals	Category	Project Consistency Analysis
Build and maintain an integrated multimodal transportation network.		
• Support investments and programs that are well-maintained and operated, coordinated, and resilient, and result in improved safety and air quality.	Mobility	Consistent. The proposed project is intended to reduce the adverse effects of flooding and blowsand events along Indian Canyon Drive, which currently result in frequent and prolonged roadway closures. These closures disrupt regional mobility, increase congestion, travel times, and emissions, and negatively affect the local economy by limiting the movement of people and goods. To address these issues, the project would upgrade at-grade transportation infrastructure to improve floodwater and sand flow, incorporating under crossings for wildlife connectivity and sand fencing; enhance mobility for motorists and pedestrians by reducing the frequency of closures; and provide a multi-use trail.
• Ensure reliable, accessible, affordable, and quality travel options while striving to enhance equity in transportation resources offered in underserved communities.		
• Plan for people of all ages, abilities, and backgrounds		
Develop, connect, and sustain communities that are livable and thriving.		
• Reinforce vibrant, human-centered communities in urban, suburban, and rural settings to increase mobility options and reduce travel distances.	Communities	Not Applicable. The proposed project is not a housing development. As such, this goal is not applicable to the proposed project. However, the proposed roadway improvement would enhance mobility for motorists and pedestrians by reducing the frequency of closures; and provide a multi-use trail.
• Produce and preserve a diversity of housing types to improve affordability, accessibility, and choices for all.		
• Foster inclusive communities free from barriers that restrict access to opportunity, and actively seek to reduce racial and economic disparities		

Table 4.8-2, continued

Goals and Sub-Goals	Category	Project Consistency Analysis
Create a healthy region for the people of today and tomorrow.		
• Develop communities that are resilient and can mitigate, adapt to, and respond to chronic and acute stressors and disruptions, such as climate change.	Environment	Not Applicable. The proposed project is not a housing development. As such, this goal is not applicable to the proposed project.
• Integrate the region's development pattern and transportation network to improve air quality, reduce greenhouse gas emissions, and enable more sustainable use of energy and water.		Not Applicable. The proposed project is not a housing development. As such, this goal is not applicable to the proposed project. However, the proposed roadway improvement would enhance mobility for motorists and pedestrians by reducing the frequency of closures; and provide a multi-use trail.
• Conserve and restore the region's natural and agricultural resources.		Not Applicable. The proposed project is a roadway improvement project. As such, this goal is not applicable to the proposed project. However, incorporating under crossings for wildlife connectivity and sand fencing.
Support a sustainable, efficient, and productive regional economic environment that provides opportunities for all.		
• Provide physical and digital infrastructure to improve access to education, vocational training, jobs, financial systems, and foster the growth of small business in underserved communities.	Economy	Consistent. The proposed project would enhance regional mobility and reduce congestion by improving multimodal connectivity. Furthermore, by facilitating efficient movement of people and goods, the project strengthens access to employment centers and commercial hubs, supporting economic vitality and regional competitiveness.
• Advance a resilient and efficient goods movement system that supports the economic vitality of the region, attainment of clean air, and quality of life for our communities.		Consistent. As previously stated, the proposed project would help in efficient movement of people and goods, the project strengthens access to employment centers and commercial hubs, supporting economic vitality and regional competitiveness.
• Improve regional multimodal transportation system infrastructure and efficiency to enhance the region's global economic competitiveness.		Consistent. The proposed project would enhance regional mobility and reduce congestion by improving multimodal connectivity. Furthermore, by facilitating efficient movement of people and goods, the project strengthens access to employment centers and commercial hubs, supporting economic vitality and regional competitiveness.

Source: Southern California Association of Governments, https://scag.ca.gov/connect-socal, April 4, 2024.

2022 Scoping Plan Consistency Analysis

The CARB *2022 Scoping Plan* (2022 Scoping Plan) identifies reduction measures necessary to achieve the goal of carbon neutrality by 2045 or earlier. Actions that reduce GHG emissions are identified for each Assembly Bill 32 (AB 32) inventory sector. Provided in Table 4.8-3, *2022 Scoping Plan Project Consistency Analysis*, is an evaluation of applicable reduction

actions/strategies by emissions source category to determine how the project would be consistent with or exceed reduction actions/strategies outlined in the 2022 Scoping Plan.

Table 4.8-3. 2022 Scoping Plan Project Consistency Analysis

Actions and Strategies	Project Consistency Analysis
Smart Growth / Vehicles Miles Traveled (VMT)	
Reduce VMT per capita to 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045	Not Applicable. The proposed project is a roadway improvement project and would not result in additional trip generation or increase roadway capacity over the existing condition. However, the proposed roadway improvement would enhance mobility for motorists and pedestrians by reducing the frequency of closures; and provide a multi-use trail.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030	Not Applicable. The proposed project is a roadway improvement project. As such, this strategy is not applicable to the proposed project.
Construction Equipment	
Achieve 25% of energy demand electrified by 2030 and 75% electrified by 2045	Not Applicable. It should be noted that project construction would be completed prior to 2030. As such, the project would not be required to have 25 percent of construction equipment energy demand electrified. Additionally, the City of Palm Springs has not adopted an ordinance or program requiring electricity-powered construction equipment which would be consistent with the 2022 Scoping Plan. However, if such programs or ordinances are adopted in the future, the project would be required to comply with the applicable goals or policies requiring the use of electric construction equipment in the future.
Non-combustion Methane Emissions	
Divert 75% of organic waste from landfills by 2025	Not Applicable. The proposed project is a roadway improvement project. As such, this strategy is not applicable to the proposed project.
Source: California Air Resources Board, *2022 Scoping Plan*, November 16, 2022.	

Palm Springs Climate Action Plan Consistency Analysis

The City of Palm Springs has developed a CAP to provide a framework for reducing GHG emissions. The proposed project aims to improve the existing Indian Canyon Drive and is designed to improve resilience against frequent flooding and blowsand events that cause prolonged roadway closures. By upgrading existing at-grade infrastructure, the project aims to ensure more reliable regional mobility and reduce the significant economic impact of these disruptions. The proposed project would be consistent with the City's CAP by reducing traffic congestion and vehicle idling, which will lead to a decrease in local greenhouse gas emissions. Furthermore, the project enhances overall community sustainability by providing dedicated undercrossings for wildlife, preserving habitat connectivity. The project would also provide a multi-use trail, promote public health and provide safe alternatives to vehicle travel, and thus reduce the GHG emissions from mobile sources. This initiative directly aligns with the City of Palm Springs' CAP goals by building physical resilience to local climate hazards. By encouraging walking and biking, the project supports the City's objective of promoting non-motorized transport options. The infrastructure improvements ultimately foster a safer, more efficient, and

sustainable transportation corridor for the entire region. As such, the project would align with the City's goals in regard to GHG reduction, and impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

4.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS: *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 lands surrounding the project site are primarily vacant. Land uses in the surrounding vicinity include commercial, open space, a solar farm, and residential development. No chemical or hazardous waste disposal has been documented on the site. There are no known underground tanks or buried materials on the project site.

Discussion of Impacts

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

Less than Significant Impact. During the construction phase, the project would require the transport and use of chemicals and materials associated with project construction. Their use would be temporary and limited by the quantity, duration, and location of construction activities. Additionally, the use, transportation, and disposal of such materials would comply with State requirements and manufacturers recommendations to avoid imposing a significant hazard to the public or the environment. Furthermore, potential hazards to workers would be minimal pursuant to Cal OSHA standards, requiring that a Worker Health and Safety Plan (WHSP) be prepared and implemented prior to construction. The WHSP would identify the nature and extent of contaminants that may be encountered during construction, appropriate health and environmental protection measures, associated equipment, and emergency response procedures. Therefore, no additional hazards would be created.

The operation of the project would not involve the routine use of any hazardous materials. The roadway improvements have the potential to increase the routine transport of hazardous materials by improving the condition of existing transportation assets. Transporters of hazardous waste are required to hold a valid registration issued by the Department of Toxic Substances Control and comply with all State and Federal regulations pertaining to the transportation of hazardous waste.[21] Thus, 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?

Less than Significant. Construction equipment and vehicles would use small amounts of hazardous materials, including diesel fuel, oil, and gasoline. The use of hazardous materials has the potential to result in spills. Spill response and control during construction would be addressed in the project-specific SWPPP, as required by the SWRCB's Construction General Permit CGP. Compliance with the spill control and response measures in the SWPPP would reduce the impact from hazardous spills during construction to less than significant.

Project operation would not involve the routine transport, storage, or use of hazardous materials beyond those commonly associated with roadway use, such as fuels, lubricants, and vehicle fluids

[21] Department of Toxic Substances Control (DTSC), *Managing Hazardous Waste*, https://dtsc.ca.gov/transporters/, accessed March 10, 2026.

from the traveling public and routine maintenance activities. Accidental releases during operation (e.g., traffic collisions involving vehicles transporting hazardous materials) are considered infrequent and would be addressed through applicable Federal, State, and local regulations governing hazardous materials transport and spill response. In addition, roadway operation and maintenance would be subject to standard agency practices and applicable Municipal Separate Storm Sewer System (MS4) permit requirements designed to reduce the potential for pollutant discharges to the environment.

Therefore, potential impacts resulting from the release of hazardous materials into the environment would be less than significant with normal construction BMPs for soil stabilization and dust control measures incorporated and adherence to Federal, State, and local regulations regarding hazardous materials transport and spill response.

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?

No Impact. There are not any schools located within one-quarter mile of the proposed project. The nearest school to the project site is Vista Del Monte Elementary School, located at 2744 N Vía Miraleste, approximately 1 mile southeast of the southern extent of the project site. Therefore, no impacts would occur.

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?

No Impact. According to the Department of Toxic Substances Control (DTSC) Cortese List of Hazardous Waste and Substance Cleanup Sites, the project site is not located on a list of hazardous sites compiled pursuant to Government Code Section 65962.5.[22] Thus, the project would not create a significant hazard to the public or environment and no impact 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?

No Impact. The project site is not within two miles of a public airport. The nearest airport is Palm Springs International Airport, which is located approximately 3.4 miles southeast of the project site. Therefore, the project would not result in a safety hazard or excessive noise for people residing or working in the project area and no impact would occur.

[22] California Environmental Protection Agency (CalEPA), *Cortese List Data Resources*, https://calepa.ca.gov/sitecleanup/corteselist/, accessed February 20, 2025.

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

Less Than Significant Impact. The City's adopted Palm Springs Emergency Operations Plan (EOP) contains information pertaining to emergency and major disasters procedures and responsibilities of the Federal, State, county, and local entities.[23] Construction of the proposed project would result in temporary partial lane closures. Temporary traffic control during construction would be implemented in accordance with applicable City standards and potentially Caltrans standards and requirements, including the California Manual on Uniform Traffic Control Devices and Caltrans work zone traffic control guidelines, to maintain safe and orderly traffic flow and to ensure continued access for emergency response and evacuation. Work zone traffic control would be designed to provide advance warning and accommodation for emergency vehicles at all times. The project does not propose permanent roadway modifications, such as permanent lane reductions, roadway narrowing, or long-term closures, that would impair emergency response or evacuation routes. Therefore, the project would not interfere with implementation of an adopted emergency response or evacuation plan, and impacts 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?

No Impact. According to CALFIRE's Fire Hazard Severity Zones map, lands adjacent to the project's alignment identified as being within a Moderate Fire Hazard Severity Zone as well as areas identified as No Fire Hazard Severity Zone.[24] The proposed project consists of improvements within an existing transportation corridor and does not include new habitable structures, new land uses, or features that would increase wildfire ignition potential or exposure. The project would not alter emergency access or fire response capabilities and would not expose additional people or structures to wildfire hazards. Therefore, the project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires and no impact would occur.

Mitigation Measures: No mitigation measures are required.

[23] City of Palm Springs, *Emergency Operations Plan*, updated September 2019.

[24] California Fire (CalFIRE), *Fire Hazard Severity Zones*, https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones, accessed March 10, 2026.

4.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY: *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?	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
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

The City's General Plan Recreation, Open Space & Conservation Element, identifies three groundwater subbasins—Whitewater River, Mission Creek, and Indio—serve the City and its planning area. The Whitewater River, the largest basin, contains 28 million acre-feet and extends 70 miles from the junction of I-10 and Highway 111 to the Salton Sea. The Whitewater Subbasin is recharged by flows from the San Gorgonio Pass area, normal seasonal rainfalls, and surface water from various creeks. However, inflow is limited. The expansion of agricultural activities in the 1900s and the development of the Coachella Valley has accelerated depletion of groundwater basins in the region. Groundwater demand currently exceeds available recharge, leading to a condition known as "overdraft."

Discussion of Impacts

This section is based upon the following studies prepared for the project:

- *Water Quality Assessment Report* (WQAR), dated October 2025, prepared by Michael Baker International; refer to Appendix C.

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

Less than Significant Impact. During construction and operation, the project's expected pollutants of concern with the potential to impact water quality include suspended solids/sediment, nutrients, heavy metals, pathogens, oil and grease, toxic organic compounds, and trash and debris. These are typical roadway pollutants. The project is required to prepare an Interim Erosion and Sediment Control Plan, comply with the National Pollutant Discharge Elimination System (NPDES), and comply with the State Water Resources Control Board (SWRCB) NPDES General Permit waste discharge requirements for discharges of storm water runoff associated with construction activity. The project is also required to include preparation of a Storm Water Pollution Prevention Plan (SWPPP) that recommends appropriate Best Management Practices (BMPs) to control erosion and sediment. Additionally, the project would be conditioned to implement regulatory requirements in regard to MS4 compliance, preparation of a SWPPP and dewatering requirements as listed in Table 3 (Regulatory Requirements) of the project's Water Quality Assessment Report (Appendix C). Compliance with regulatory state and federal requirements and BMPs would ensure that impacts related to water quality standards or waste discharge requirements 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?

Less than Significant Impact. Implementation of the proposed project would result in minimal water usage related to dust control associated with daily watering of exposed soil and sand during grading using water trucks during construction. Post construction/operational status of

the project would not result in demand for water. Therefore, impacts in regard to substantially decreasing groundwater supplies would be less than significant.

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

Less than Significant Impact. The project would slightly modify local flow distribution as floodwaters are conveyed beneath the elevated roadway bridge system. The concentration of flow from the proposed project will sheet flow and discharge directly to Chino Canyon Road and the Whitewater River. During construction, the exposed soil areas will be stabilized with temporary pollution control materials, and stabilization measures such as sediment controls and erosion controls will be implemented once the proposed project is completed to meet the CGP's project closeout requirements (Appendix C). Therefore, impacts in regard to the project in altering existing drainage patterns resulting in substantial erosion would be less than significant.

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

Less than Significant Impact. The project would slightly modify local flow distribution as floodwaters are conveyed beneath the elevated roadway bridge system; however, this would not result in flooding on- or off-site as the project would be designed to preserve existing flow patterns. Thus, the project would not have a negative impact on the existing floodplain or hydraulic performance of Whitewater River and Chino Canyon Creek. Therefore, impacts in regard to the project altering existing drainage patterns resulting in flooding on, or- off-site would be less than significant.

c) (iii) 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 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?

Less than Significant Impact. Compliance with erosion control, grading, and soil remediation requirements identified in the *Water Quality Assessment Report* (refer to Appendix C), the California Building Code, and the NPDES Construction General Permit would ensure the project does not generate substantial additional sources of polluted runoff. Therefore, the project would not create runoff that exceeds the capacity of existing or planned stormwater drainage systems or substantially degrade water quality, and impacts would be less than significant.

c) (iv) 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 impede or redirect flood flows?

Less than Significant Impact. The proposed elevated roadway bridge system would slightly modify local flow distribution near the bridge abutments as floodwaters are conveyed beneath the structure; however, this localized hydraulic effect would not impede or redirect flood flows in a manner that alters overall flood behavior within the Whitewater River or Chino Canyon Creek. The concentration of flow from the proposed project will sheet flow and discharge directly to Chino Canyon Road and the Whitewater River. The project would not cause overtopping, increase base flood elevations, or redirect floodwaters outside the established floodplain. Therefore, the project would not impede or redirect flood flows, and impacts would be less than significant.

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

Less than Significant Impact. The project site is not located near any large inland bodies of water and is more than 50 miles from the Pacific Ocean, a condition that precludes inundation by tsunami or seiche. As the project is located within the Whitewater River, there is the potential for flood hazards. Compliance with the regulatory requirements listed in Table 3 of the Water Quality Assessment Report (Appendix C), CBC, NPDES requirements and preparation of a SWPPP would minimize the risk of release of pollutants during a flood hazard during construction and for post construction activities. Therefore, project impacts in regard to risk of release of pollutants due to project inundation would be less than significant.

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

No Impact. The *Water Quality Assessment Report* identifies regulatory requirements for project compliance pursuant to the provisions of the Waste Discharge Requirement for Discharges from the MS4 (within the Whitewater River), preparation of a SWPPP with administered BMPs, compliance with Attachment J of the National Pollutant Discharge Elimination System (NPDES) and compliance with City of Palm Springs Municipal Code Chapter 8.70 (Stormwater Management and Discharge Controls). Project compliance with the Water Quality Assessment Report and City Municipal requirements would ensure there would be no impact to implementation of a water quality control plan, thus no impact would occur in this regard.

Mitigation Measures: No mitigation measures are required.

4.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
LAND USE AND PLANNING: *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

The City's General Plan has several land use designations that are immediately adjacent to project's northern and southern extents. Land to the east is designated as Open Space Conservation (OS-C) and Open Space Desert (OS-D) and to the west is designated as Open Space Water (OS-W) and Energy Overlay and Railroad (RR).

OS-C designated areas are mainly designated for gently sloping areas of scenic beauty (such as hillsides) and natural landforms (such as alluvial fans) that should be preserved to maintain the City's unique character. OS-D designated areas are intended to identify areas to be retained to protect natural, scenic, and wildlife resources unique to Palm Springs and to identify areas where minimal development is desired to protect people and property from environmental hazards such as blowsand associated with the undeveloped desert floor areas. OS-W designated areas are reserved for flood control or drainage facilities only. Properties under this designation fall within the 100-year flood zone as established by the adoption of Federal Emergency Management Agency (FEMA) flood maps and are subject to sporadic flooding and other hazards. No habitable structures are permitted within these areas.

Discussion of Impacts

a) Would the project physically divide an established community?

No Impact. The project site is void of existing residential uses and surrounded by open desert. The project is designed to mitigate the adverse impacts of flood and blowsand events that occur along Indian Canyon Drive and the local vicinity. Frequent and prolonged road closures on Indian Canyon Drive due to floods and blowsand strains the region's transportation system, causing congestion, increased travel times, and emissions, which impacts the local economy by constraining people and the movement of goods. Therefore, implementation of the project would improve connectivity in the region. Accordingly, the project would not physically divide an established community. No impact would occur in this regard.

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?

Less Than Significant Impact. Two land use plans are relevant to the proposed project: the City of Palm Springs 2040 General Plan and the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

The City's General Plan identifies the project within the Circulation Element, specifically under Policy CR2.8, which calls for improving connectivity and resiliency by constructing all-weather bridge crossings and other infrastructure enhancements along major access corridors such as Vista Chino, Gene Autry Trail, Indian Canyon Drive, and Palm Canyon Drive. The proposed project directly implements this policy by enhancing the resiliency and reliability of Indian Canyon Drive. Accordingly, the project would be consistent with and in conformance with the City's General Plan.

The project was reviewed by the CVCC for consistency with the CVMSHCP during the JPR process completed for the project. The results of this review are documented in the CVMSHCP Consistency Determination prepared for the project (refer to Appendix B5); as well as in Section 4.4, *Biological Resources*. The JPR has found the project as proposed conditionally consistent with the CVMSHCP pending the opportunity for further review of the roadway designs. Accordingly, coordination with CVCC is required as project design advances. CVAG is currently coordinating with CVCC on a JPR addendum to address design refinements that have resulted from budget constraints. The project is required to comply with the applicable avoidance, minimization, and mitigation measures, as well as the following land use adjacency guidelines, to ensure consistency with the CVMSHCP.

CVMSHCP Land Use Adjacency Guidelines

Drainage: Neither of the roadway or bridge designs will result in an adverse impact to water quantity or quality compared to existing conditions. This guideline is included as mitigation measure BIO-4 (Protection of Conservation Area), although CVCC recommends that specific actions be identified to ensure that any runoff discharged during construction does not adversely impact the surrounding Conservation Area.

Toxics: The use of chemical fertilizers and other bioproducts is not anticipated as part of the project. Mitigation measure BIO-5 (Best Management Practices) requires the prevention of any releases of petroleum products and other harmful chemicals to the surrounding Whitewater Floodplain Conservation Area and specifies the implementation of best management practices to avoid the release of any toxic chemicals. Mitigation measure BIO-6 (Fueling Restrictions) requires that no vehicle/equipment fueling will take place within the Whitewater Floodplain Conservation Area

Lighting: During construction, any night lighting will be downcast and shielded pursuant to mitigation measure BIO-15 (Night Lighting) for any lighting that is utilized, CVCC recommends a lighting temperature of 3,000 Kelvin or less and fixtures with motion detection and automatic

shutoff functionality, as appropriate. Additional best practice recommendations from the Wildlife Agencies include an illuminance threshold not to exceed 15 lux (or 5 lux above baseline) as measured from 50 feet beyond the project boundary.

Noise: The vehicular capacity of the roadway remains unchanged from current conditions, so the Project is not anticipated to generate any more noise than that generated by current conditions. Construction noise is not anticipated to exceed 75 dBA hourly.

Invasives: The project does not include any landscaping. Mitigation measure BIO-2 (Construction Equipment Inspection) requires equipment be cleaned prior to use in the Whitewater Floodplain Conservation Area to minimize the potential introduction of invasive species.

Barriers: Barriers will be constructed within the roadway to separate the multimodal path from the vehicular travel lanes, thus limiting, in part, the ability for trespass into the Whitewater Floodplain Conservation Area. As described above, these barriers have been designed to accommodate sand transport and wildlife movement.

Grading/Land Development: The project has been designed to minimize to the extent possible the need to construct any manufactured slopes or extend the project footprint beyond the existing right-of-way.

Compliance with the avoidance and minimization measures, identified as the CVMSHCP Land use Adjacency Guidelines, will ensure the project would not conflict with the CVMSHCP. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

4.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
MINERAL RESOURCES: *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

As noted in the City's General Plan, the predominant mineral resources in the City are sand and gravel, collectively known as aggregate. These mineral resources are key components of construction materials including asphalt, concrete, road base, stucco, and plaster. The Palm Springs 2007 General Plan Figure 5-3 classifies most of the City's developed area as an MRZ-3 Zone, indicating that the significance of mineral deposits cannot be determined from the available data. The project alignment is designated as MRZ-2, indicating areas where adequate information indicates that significant mineral deposits are present or there is a high likelihood to be present.

Discussion of Impacts

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?

Less Than Significant Impact. An active mining facility for sand and gravel aggregate exists just east of the project site adjacent to the railroad tracks; however, this site would be unaffected by the project as it exists outside of the project boundary and would continue to operate as an active mining facility with or without implementation of the project. The project is not expected to result in a considerable extraction and/or loss of known mineral resources that are considered important to the Coachella Valley Region or residents of California as it is a road improvement project. Therefore, it is anticipated that a less than significant impact related to the loss of availability of known mineral resources would occur.

Mitigation Measures: None required.

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?

Less Than Significant Impact. As mentioned above, an active mining facility lies east of the proposed project. According to Figure 5-3, *Managed Production of Resources*, from the City's General Plan, the lands surrounding the project's alignment are identified as MRZ-2, indicating an area where significant mineral deposits are present or a high likelihood for their presence exists. However, no portion of the project site is allocated for mineral land uses. Therefore, the project would not result in the loss of availability of a locally important mineral resource recovery site, and impacts would be less than significant.

Mitigation Measures: None required.

4.13 Noise

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
NOISE: *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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

This section is based upon the following documents prepared for the project:

- *Noise Data (*Michael Baker International, November 12, 2025); refer to Appendix D, *Noise*.

Noise Definition

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air and is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear de-emphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) has been developed. On this scale, the human range of hearing extends from approximately 3 dBA to around 140 dBA.

Noise is generally defined as unwanted or excessive sound, which can vary in intensity by over one million times within the range of human hearing; therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3 dBA and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of object between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt,

have an attenuation rate of 3 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6 dBA and about 7.5 dBA per doubling of distance.

There are a number of metrics used to characterize community noise exposure, which fluctuate constantly over time. One such metric, the equivalent sound level (L_{eq}), represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. Noise exposure over a longer period of time is often evaluated based on the Day-Night Sound Level (L_{dn}). This is a measure of 24-hour noise levels that incorporates a 10-dBA penalty for sounds occurring between 10:00 p.m. and 7:00 a.m. The penalty is intended to reflect the increased human sensitivity to noises occurring during nighttime hours, particularly at times when people are sleeping and there are lower ambient noise conditions. Typical L_{dn} noise levels for light and medium density residential areas range from 55 dBA to 65 dBA.

Groundborne Vibration

Sources of ground-borne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. Typically, ground-borne vibration, generated by man-made activities, attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source. Both construction and operation of development projects can generate ground-borne vibration.

Table 4.13-1, *Human Reaction and Damage to Buildings from Continuous Vibration Levels*, displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in Table 4.13-1 should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be

produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Table 4.13-1. Human Reaction and Damage to Buildings from Continuous Vibration Levels

Peak Particle Velocity (inch/second)	Human Reaction	Effect on Buildings
0.006-0.019	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings[1]
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Notes:
1. Historic and some old buildings have a threshold of inch-per-second 0.25 PPV.

Source: California Department of Transportation, *Transportation and Construction Vibration Guidance Manual, Tables 5 and 12*, https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf., April 2020.

Existing Conditions

Stationary Sources

The project area is located within a suburbanized area. The primary sources of stationary noise in the project vicinity are from sub-urban related activities (i.e., mechanical equipment, residential areas, parking areas, and pedestrians). The noise associated with these sources may represent a single-event noise occurrence, short-term, or long-term/continuous noise.

Mobile Sources

The majority of the existing noise in the project area is generated from vehicles traveling along Indian Canyon Drive and Sunrise Parkway. Mobile source noise from Interstate 10 (I-10) is also present near the northern portion of the project site. Intermediately, train noise is generated from the Amtrak as it passes along the rail line.

Noise Measurements

In order to quantify existing ambient noise levels in the vicinity of the project site, three noise measurements were taken on November 12, 2025; refer to Addendum E, *Noise*. The noise measurement sites were representative of typical existing noise exposure around the project site. Ten-minute measurements were taken, between 10:30 a.m. and 12:00 p.m.; refer to Table

4.13-2, *Noise Measurements*. Short-term (L_{eq}) measurements are considered representative of the noise levels throughout the day.

Table 4.13-2. Noise Measurements

Site No.	Location	Associated Land Use	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Time
1	Northwest corner of the Miralon residential community	Residential	53.5	35.3	71.0	10:58 a.m.
2	Northeast corner of Desert Highland Park	Open Space	52.7	34.3	72.0	11:20 a.m.
3	Approximately 200 feet west of the Indian Canyon Drive and 20th Avenue intersection; in front of Motel 6 North Palm Springs	Commercial	63.1	56.1	80.8	11:43 a.m.
Notes: dBA = A-weighted decibels, L_{eq} = Equivalent Sound Level; L_{min} = Minimum Sound Level; L_{max} = Maximum Sound Level, Peak = Highest Instantaneous Sound Level						
Source: Michael Baker International, November 12, 2025; refer to Appendix D, *Noise Data*.						

Meteorological conditions were sunny, warm temperatures, with light wind speeds (0 to 5 miles per hour). Noise monitoring equipment used for the ambient noise survey consisted of a Brüel & Kjær Hand-held Analyzer Type 2250 equipped with a Type 4189 pre-polarized microphone. The monitoring equipment complies with applicable requirements of the American National Standards Institute (ANSI) for sound level meters. The results of the field measurements are included in Appendix D, *Noise Data*.

Setting

Regulatory Framework

Governor's Office of Land Use and Climate Innovation Noise Element Guidelines

The Governor's Office of Land Use and Climate Innovation (LCI) Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The LCI Noise Element Guidelines contain a land use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the Community Noise Equivalent Level (CNEL). Table 4.13-3, *Land Use Compatibility for Community Noise Environments*, presents guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

Table 4.13-3. Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 – 70	70 – 75	75 – 85
Residential – Multiple Family	50 – 65	60 – 70	70 – 75	70 – 85
Transient Lodging – Motel, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 – 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 – 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 75	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 – 80	80 – 85
Office Buildings, Business Commercial, Professional	50 – 70	67.5 – 77.5	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 – 80	75 – 85	NA

Notes: NA = Not Applicable; L_{dn} = Day/Night Average; CNEL = community noise equivalent level; dBA = A-weighted decibels
Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable - New Construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable – New construction or development should generally not be undertaken.

Source: Governor's Office of Land Use and Climate Innovation, *General Plan Guidelines*, July 2017.

Caltrans Transportation and Construction Vibration Guidance Manual

The *Transportation and Construction Vibration Guidance Manual* prepared by the California Department of Transportation (Caltrans) identifies various vibration damage criteria for different building classes. As the nearest structures to project construction are residences, the architectural damage criterion for continuous vibrations at newer residential structures of 0.5 inch-per-second PPV is utilized.[25]

[25] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, Table 19, September 2013.

Palm Springs General Plan 2040

The Palm Springs General Plan 2040 (General Plan) outlines a set of noise control policies, programs, and implementation measures that provide guidance for solving noise-related issues and problems within the City. The following goals and policies are applicable to the proposed project:

Goal NS1: Protect residential areas and other sensitive land uses from impacts generated by exposure to excessive noise.

Policy NS1.1: Continue to enforce acceptable noise standards consistent with health and quality of life goals established by the City and employ noise abatement measures, including the noise ordinance, applicable building codes, and subdivision and zoning regulations.

Policy NS1.3: Utilize maximum anticipated, or "worst case," noise conditions as the basis for land use decisions and design controls as a means of preventing future incompatibilities.

Policy NS1.4: Evaluate the compatibility of proposed land uses with the existing noise environment when preparing, revising, or reviewing development proposals.

Policy NS1.5: Protect noise-sensitive land uses such as schools, hospitals, and convalescent homes from unacceptable noise levels from both existing and future noise sources.

Goal NS3: Minimize, to the greatest extent possible, the impact of non-transportation-related stationary and temporary noise on residential areas and other sensitive land uses**.**

Policy NS3.10: Require that construction activities that impact adjacent residential units comply with the hours of operation and noise levels identified in the City Noise Ordinance.

Policy NS3.11: Require that construction activities incorporate feasible and practical techniques which minimize the noise impacts on adjacent uses, such as the use of mufflers and intake silencers no less effective than originally equipped.

City of Palm Springs Municipal Code

11.74.042, Construction

It shall be unlawful for any person within the city to operate construction tools or equipment in the performance of any outside construction or repair work on buildings, structures, or projects except in accordance with Section 8.04.220, of this code.

8.04.220, Limitation of hours of construction.

(a) No person shall be engaged or employed nor shall any person cause any other person to be engaged or employed in any work of construction, erection, alteration, repair, addition to, or improvement of any realty, building or structure, except during the hours specified as follows, if the noise or other sound produced by such work is of such intensity or quality that it disturbs the peace and quiet of any other person of normal sensitivity. For new construction, the permitted hours of construction specified below shall be conspicuously posted on site (Table 4.13-4, *Permitted Hours of Construction*).

Table 4.13-4. Permitted Hours of Construction

Weekdays	Saturdays	Sunday & Holidays[1]
7 a.m. to 7 p.m.	8 a.m. to 5 p.m.	Not permitted
Notes: Holidays include Thanksgiving Day, Christmas Day, New Years Day, July 4th, and Memorial Day.		
Source: City of Palm Springs, *Section 8.04.220, Limitation of hours of construction*., adopted September 25, 2025.		

(b) Any person doing or causing work prohibited by subsection (a) of this section, after being informed orally or in writing that such work has caused noise or sounds which disturb any other person's peace and quiet, shall immediately cease such work and shall thereafter perform such work only within the times permitted in subsection (a) of this section.

EXCEPTIONS:

…

(3) Work being conducted in the public right-of-way under the authority of the engineering department shall be allowed on a daily basis between seven a.m. and three-thirty p.m. except weekends and holidays unless otherwise approved by the city engineer.

Discussion of Impacts

a) Would the project generate 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?

Less Than Significant Impact.

Construction

Typical activities associated with construction are a highly noticeable temporary noise source. Noise from construction activities is generated by two primary sources: (1) the transport of workers and equipment/materials to construction sites and (2) the noise related to active construction equipment. These noise sources can be a nuisance to local residents and businesses or, in some cases, unbearable to sensitive receptors (i.e., residences, hospitals, senior centers, schools, day care facilities, etc.).

Construction noise levels in the project vicinity would fluctuate depending on the type, number, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete construction phases, with each phase requiring different equipment with varying noise characteristics. These phases alter the characteristics of the noise environment generated on the proposed project site and in the surrounding community for the duration of the construction process. Project construction activities would involve grubbing, land clearing, grading, excavation, and paving. Construction activities would progress by completing one section of the roadway at a time while maintaining public access and operational status throughout the other section.

Per Municipal Code Section 11.74.042, *Construction*, construction activities are recognized as a part of urban life and would be exempt from provisions of the noise ordinance (exterior noise standards) provided that they occur within the allowed hours of construction. As such, the City does not have an established quantitative construction noise standard. Nevertheless, construction noise associated with the proposed project is compared to the construction noise standards adopted by the Federal Transit Administration (FTA). According to the FTA's *Transit Noise and Vibration Impact Assessment Manual*, a significant impact would occur if construction noise exceeded 80 dBA at residential uses.[26]

The closest sensitive receptors to the proposed project site are the single-family residential dwellings located approximately 120 feet to the southeast when measured from the project site property line. However, construction activities would occur throughout the project site, and it should also be noted that construction noise levels would intermittently occur for a few days when construction equipment is operating closest to the nearest sensitive uses. The remainder of the time, the construction noise levels would be much lower because the equipment would be working in an area farther away from the existing sensitive uses. The General Noise Assessment methodology prescribed in the FTA *Transit Noise and Vibration Impact Assessment Manual*, recommends evaluating construction noise from the center of the site, stating under the variable distance in its construction noise calculation to "assume that all equipment operates at the center of the project."

Construction noise levels are estimated using the distance from the center of the project site to the property line of the existing sensitive receptors, which is approximately 4,250 feet from the closest sensitive receptor to the southeast. However, to present the worst-case scenario, construction-related noise was also shown at 120 feet, the distance between the project site's southern boundary to the property line of the receptors to the southeast.

Noise levels from construction equipment and activities were modeled using the Federal Highway Administration's Roadway Construction Noise Model (RCNM). Project construction equipment is based on California Emissions Estimator Model (CalEEMod) results conducted for

[26] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf, accessed November 11, 2025.

the proposed project which estimated the types and quantity of equipment that would be used on-site during each construction phase; refer to Appendix A, *Air Quality/Greenhouse Gas Emissions/Energy Modeling.* To present a conservative impact analysis, the estimated noise levels were calculated for a scenario in which all heavy construction equipment were assumed to operate simultaneously. It should be noted that RCNM models equipment noise with an acoustic usage factor which accounts for the percentage of time during construction an equipment would operate at full power.[27]

At the site boundary, this analysis assumes that only one piece of equipment of each listed type per phase would be involved in the construction activity for a limited portion of the 8-hour period because in this area, the operating equipment cannot "stack" or crowd the vicinity and still operate normally. At the center of the project site, this analysis conservatively assumes all construction equipment listed in CalEEMod for each phase. The estimated construction noise levels at the nearest noise-sensitive receptors are presented in Table 4.13-5, *Construction Noise Levels at the Nearest Residential Receptors.*

Table 4.13-5. Construction Noise Levels at the Nearest Residential Receptors

Phase	Estimated Exterior Construction Noise Level at 4,200 feet (Center of the Site to Residential Uses to the Southeast) (dBA L_{eq})[1,4]	Estimated Exterior Construction Noise Level at 120 feet (Southern Limits of the Site to Residential Uses to the Southeast) (dBA L_{eq})[2,4]	FTA's Construction Noise Thresholds (dBA L_{eq})	Exceedance of Threshold?
Grubbing and Land Clearing	46.9	74.1	80	No
Grading and Excavation	54.8	79.7		No
Construction	53.9	79.5		No
Paving	49.2	74.8		No
Overlapping Phases[3]				
Grubbing and Land Clearing and Grading and Excavation	55.5	--	80	No
Drainage, Utilities, and Paving	55.2	--		No

Notes:
1. These noise levels conservatively assume the simultaneous operation of all heavy construction equipment at the same precise location (center of the site pursuant to FTA's methodology). Refer Appendix D for modeled heavy construction equipment at 4,200 feet.
2. These noise levels are based on the simultaneous use of only one piece of equipment of each type from CalEEMod outputs. This methodology was used to estimate the projected construction noise levels at the boundary of the project site. All of the construction equipment in CalEEMod would not be located along the boundary line but would be dispersed along the length of the project site. Refer to Appendix D for modeled heavy construction equipment at 120 feet.
3. As shown in CalEEMod, *Section 5.1, Construction Schedule*, construction of the proposed project would have phases that would overlap; refer to Appendix A. Construction noise from overlapping phases was calculated by adding the construction noise levels from potentially overlapping phases. Construction noise from overlapping phases conservatively assumes the simultaneous use of all heavy construction equipment from overlapping phases (i.e., all construction equipment for 4,200 feet and one of each construction equipment type for 120 feet). The following equation was used:
   $L_{total} = 10 \times \log_{10}(\Sigma(10^{Li/10}))$
   Where L_{total} = combined noise level; Li = individual sound level; Σ = sum of all individual sound power contribution
4. CalEEMod outputs include the use of signal boards. However, signal boards would not emit noise. As such, the RCNM output does not include signal boards.

[27] Federal Highway Administration, *FHWA Roadway Construction Noise Model User's Guide*, https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf, accessed November 11, 2025.

Source: Federal Highway Administration, *Roadway Construction Noise Model (RCNM)*, 2006 (see Appendix D, *Noise Data*).

As shown in Table 4.13-5, construction-generated noise levels would range from 46.9 dBA L_{eq} to 54.8 dBA L_{eq} at the nearest sensitive receptor when measured from the center of the site. At a distance of 120 feet, construction-generated noise levels would range from 74.1 dBA L_{eq} to 79.7 dBA L_{eq} at the nearest sensitive receptor. It should be noted that the nearest sensitive receptor (single family residential dwellings to the southeast) has a six-foot tall masonry wall which would shield the receptors from construction activities. As such, this feature would attenuate construction-related noise by approximately 5 dBA.[28] Additionally, the modeling of construction noise levels in Table 4.13-5 assumes that construction equipment would operate simultaneously and represent a worse-case scenario. Construction would occur in a linear manner and certain types of construction equipment would only be used during certain periods of construction (i.e., excavators would be used during the removal of concrete, tractors would be used to remove soil, etc.) and would be powered down when not in use. Additionally, construction would move further away from sensitive receptors as portions of the improvements near the southern boundary are finished.

Construction of the proposed project would have overlapping phases. As such, the following evaluation assumes the simultaneous use of all heavy construction equipment from overlapping phases. However, overlapping construction noise was not modeled at a distance of 120 feet. As discussed above, only one piece of equipment of each listed type per phase would be involved in the construction activity for a limited portion of the 8-hour period. As such, construction equipment cannot "stack" or crowd the vicinity and still operate normally. As shown in Table 4.13-5, construction noise generated from overlapping phases at 4,200 feet would range from 55.2 to 55.5 dBA. As discussed above, the nearest sensitive receptor has an existing six-foot tall masonry wall which would attenuate construction-related noise by approximately 5 dBA As such, construction-related noise would not exceed the FTA's construction noise threshold of 80 dBA.

Pursuant to the City of Palm Spring's Municipal Code Section 8.04.220(a), *Limitation of hours of construction*, construction would be prohibited between the hours 7 p.m. to 7 a.m. on weekdays and 5 p.m. to 8 a.m. on Saturdays. Construction would be prohibited on Sunday and designated holidays. However, since the proposed project is a roadway improvement project, construction activities would comply with the modified hours of construction as outlined in Municipal Code Section 8.04.220(b)(3). Pursuant to Municipal Code Section 8.04.220(b)(3), construction activities conducted in public right-of-way under the authority of the City's engineering department would only be permitted between the hours of 7 a.m. through 3:30 p.m. on weekdays. The proposed project would not require nighttime construction activities and would comply with the modified hours of construction as outlined in Municipal Code Section 8.04.220(b)(3). Since construction activities do not exceed the FTA's construction noise significance threshold and would occur within the permitted hours of construction, construction-related noise impacts would be less than significant.

[28] Federal Highway Administration, *FHWA Roadway Construction Noise Model User's Guide, Appendix A*, https://www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf, accessed November 11, 2025.

Construction Trips

Construction activities would also cause increased noise along access routes along Indian Canyon Drive due to movement of equipment and workers, as well as haul trips. Truck trips associated with construction would mostly travel along Indian Canyon Drive which would then connect to the I-10. According to Caltrans, a doubling of traffic (100 percent increase) on a roadway would result in a perceptible increase in traffic noise levels (3 dBA).[29] As such, a significant impact would occur if construction-related trips double existing traffic volumes.

According to the CalEEMod results, it is anticipated that project construction would generate a total maximum of 318 one-way trips per day, comprising of 180 one-way worker trips per day, four one-way vendor trips per day, and 134 one-way hauling trips per day; refer to Appendix A. Based on 2017 data, Indian Canyon Drive south of the I-10 Freeway has traffic volumes of approximately 15,467 average daily trips (ADT).[30] Additionally, Indian Canyon Drive north of Racquet Club Road has traffic volumes of approximately 15,988 ADT. As such, project-related construction trips (maximum of 284 ADT) would not result in a doubling of the existing traffic volumes along Indian Canyon Drive, and therefore, would not generate a perceptible increase (3 dBA) in traffic noise. Additionally, mobile traffic noise from construction trips would be temporary and would cease upon project completion. Impacts in this regard would be less than significant.

Operational

The proposed project would construct a 1.6-mile multi-use trail and an elevated roadway bridge system along a portion of Whitewater River. Due to the nature of the proposed project (linear improvement and bridge construction), the project would not require regular maintenance during operation, install new stationary noise sources, or generate additional traffic. As such, the proposed project would not generate a substantial temporary or permanent increase in ambient noise levels of operational noise and a less than significant impact would occur in this regard.

Mitigation Measures: None required.

b) Would the project generate excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact.

Construction

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with

[29] California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol,* September 2013.

[30] Coachella Valley Association of Governments, *2017 Traffic Census Report,* https://www.palmspringsca.gov/home/showpublisheddocument/53074/636341735421330000, accessed November 13, 2025.

distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The California Department of Transportation (Caltrans) *Transportation and Construction Vibration Manual* identify various vibration damage criteria for different building classes.[31] The closest structure to the project site would be the single-family residential homes currently being constructed by Miralon located approximately 120 feet away to the southeast.[32] As a conservative analysis, the following vibratory evaluation would assume that construction of single-family residential homes was completed prior to the commencement of project-related construction activities. Since the closest structures to the project site are new residential dwellings, the following evaluation would utilize the Caltrans architectural damage criterion for continuous vibration at newer residential buildings of 0.50 inch/sec PPV.

Construction of the elevated roadway bridge system would require the use of pile driving. However, it should be noted that the use of pile driving would only be required for the proposed elevated bridge system located on the northern portion of the project site. Pile driving activities would be located approximately 7,000 feet away from the single-family residential dwellings to the southeast of the project site. However, the closest structure to pile driving activities are the existing commercial structures surrounding the Garnet Avenue and Indian Canyon Drive intersection, located approximately 4,500 feet away. Based on the Caltrans architectural damage criterion for continuous vibration at modern industrial/commercial buildings, a significant impact would occur if vibrations exceeded 0.50 inch/sec PPV.

Table 4.13-6, *Vibration from Construction Equipment* presents the vibration levels produced by construction equipment associated with the proposed project.

Table 4.13-6. Vibration from Construction Equipment

Construction Equipment	Peak Particle Velocity (inch/second)[1]		
	Approximate peak particle velocity at 25 feet	Approximate peak particle velocity at 120 feet	Approximate peak particle velocity at 4,500 feet
Large Bulldozer	0.0890	0.0085	-
Loaded Trucks	0.0760	0.0072	-
Jackhammer	0.0350	0.0033	-
Pile Driving	0.6440	-	0.0003

[31] California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, April 2020.
[32] Miralon, Residences, https://discovermiralon.com/residences/, accessed November 10, 2025.

Notes: ADT = Average Daily Trips
1. Calculated using the following formula:
$PPV_{equip} = PPV_{ref} \times (25/D)^{1.1}$
where: PPV_{equip} = the peak particle velocity in in/sec of the equipment adjusted for the distance
PPV_{ref} = the reference vibration level in in/sec from Table 7-4 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*
D = the distance from the equipment to the receiver

Source: California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, April 2020.

Vibration levels during the operation of construction equipment would be approximately 0.0033 inch/second PPV to 0.0085 inch/second PPV at 120 feet; refer to Table 4.13-6. It should be noted that vibration velocity decreases with increasing distance. Additionally, the construction of the proposed project would not be concentrated at a single point but occur over a linear distance. As such, construction activities would not be concentrated at one location for a period of time. Table 4.13-6 presents the scenario in which construction activities are happening near the structure, but this would only occur for a short period of time. Thus, groundborne vibration associated with construction activities would not be capable of exceeding the 0.5 inch/second PPV significance threshold for vibration to newer residential dwellings. A less than significant impact would occur in this regard.

As shown in Table 4.13-6, vibration levels from pile driving activities would be approximately 0.0003 inch/second PPV which is well below the Caltrans significance threshold for modern industrial/commercial structures. A less than significant impact would occur in regard to construction impacts.

Operational

The project would construct a 1.6-mile multi-use trail and an elevated roadway bridge system along a portion of Whitewater River. These improvements would not generate groundborne vibration during its operation that could be felt by surrounding users. The project operation would not involve railroads or substantial heavy truck operations and therefore would not result in vibration impacts at surrounding uses. Thus, no impact would occur in regard to operational impacts.

Mitigation Measures: None required.

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

No Impact. The nearest public use airport to the project site is the Palm Springs International Airport which lies approximately 2.3 miles southwest of the project site. According to the County of Riverside Airport Land Use Commission, the project site is not located within the Palm Springs International Airport noise contours.[9][33] The project site is not in the vicinity of a private airstrip. Additionally, the proposed project is a roadway improvement project and would not have long-

[33] County of Riverside Airport Land Use Commission, *Riverside County Airport Land Use Compatibility Plan Policy Document, Map PS-3, Noise Compatibility Contour*s, adopted March 2005.

term sensitive receptors residing or working in the project's vicinity. Therefore, no impact related to airport land use compatibility would occur.

Mitigation Measures: None required.

4.14 Population and Housing

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
POPULATION AND HOUSING: *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?	☐	☐	☐	☒

Discussion of Impacts

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)?

Less Than Significant Impact. The project does not include the development of any new housing or business and therefore would not directly induce substantial unplanned population growth. The pattern and rate of population and housing growth would be expected to remain consistent with that which is anticipated by existing plans for the area within the City of Palm Springs and County of Riverside General Plans. Further, temporary jobs during construction are likely to be filled by people already living in the project area and surrounding communities.

The project would not result in the extension of a roadway (including Indian Canyon Drive) or other infrastructure. The primary purpose of the project is to address safety concerns regarding the conveyance of floodwaters and blowsand. The project would entail improvements to existing infrastructure. The project does not propose an extension of infrastructure and would not result in substantial unplanned population growth. Accordingly, the project would not 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). A less than significant impact would occur in this regard.

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

No Impact. There are no housing units located within the project site and no housing units are required to be removed to construct the bridge or associated multi-use trail. Similarly, no housing

units would be converted to other types of housing or uses that could displace any people as a result of the project. No impact will occur.

Mitigation Measures: None required.

4.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
PUBLIC SERVICES:				
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:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Setting

Fire Protection:

Fire protection and emergency medical services are provided by the City of Palm Springs. The nearest fire station to the project site is City of Palm Springs Fire Station #3, located at 590 East Racquet Club Road which is approximately 1.2 miles southeast of the project's alignment.

Police Protection:

Police protection services are provided by the Palm Springs Police Department. The Palm Springs Police Department is located at 200 South Civic Drive, approximately 3.8 miles southwest of the project's alignment.

Schools:

The nearest school to the project's alignment is Katherine Finchy Elementary School located approximately 2.3 miles southwest of the project's alignment. The school is under the Palm Springs Unified School District (PSUSD). Currently, the district has sixteen elementary schools, five middle schools, four comprehensive high schools, two continuation high schools, alternative education programs, headstart/state preschools, full-day headstart programs and childcare

programs.[34] These schools are located in the cities of Desert Hot Springs, Palm Springs, Cathedral, Rancho Mirage, and the community Thousand Palms.

Parks:

As noted in the City's General Plan, the City owns and maintains 156 acres of developed parkland, 160 acres of City-owned golf courses open to the public, as well as miles of developed greenbelts along major thoroughfares throughout the City.

Other public facilities:

The Palm Springs Public Library is located at 4721 East Palm Canyon Drive, approximately 6.1 miles southeast of the project's alignment.

Discussion of Impacts

a) (i) 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 fire protection?

Less Than Significant Impact. The project does not propose any residential uses or businesses that would result in substantial population growth that would necessitate the need for new or physically altered fire protection facilities; refer to Section 4.14, *Population and Housing*. Further, project development would be in accordance with all State and local fire standards to assure adequate fire safety and emergency access. As such, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection. Impacts would be less than significant in this regard.

a) (ii) 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 police protection?

Less Than Significant Impact. As discussed in Section 4.14, *Population and Housing*, the project does not propose any residential or business uses; and therefore would not result in substantial population growth that would necessitate the need for new or physically altered police protection facilities. Further, the project would be required to comply with all Police Department regulations and procedures, and project plans would be reviewed by the Police Department to assure adequate emergency access is provided. As such, the project would not result in

[34] Palm Springs Unified School District, *About PSUSD*, https://www.psusd.us/domain/52, accessed October 20, 2025.

substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection. Impacts would be less than significant in this regard.

a) ***(iii) 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 schools?***

No Impact. As discussed in Section 4.14, *Population and Housing*, the project does not propose any residential or business uses that would result in substantial population growth that would necessitate the need for new or physically altered school facilities. Accordingly, the project would not 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 schools. No impact would occur.

a) ***(iv) 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 parks?***

No Impact. The project does not propose any residential uses that would result in substantial population growth; refer to Section 4.14, *Population and Housing*. Thus, the project would not 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 parks. No impact would occur in this regard.

a) ***(v) 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 other public facilities?***

No Impact. As discussed in Section 4.14, *Population and Housing*, the project does not propose any residential uses that would result in substantial population growth that would necessitate the need for new or physically altered library facilities. Accordingly, the project would not 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 libraries. No impact would occur.

Mitigation Measures: None required.

4.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
RECREATION:				
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

Per the City's General Plan, the City owns and maintains approximately 156 acres of developed parkland, approximately 160 acres of City-owned, public golf courses, as well as miles of developed greenbelts along major thoroughfares throughout the City.

Discussion of Impacts

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?

Less Than Significant Impact. By nature of the project, the roadway improvement project would not result in an increased use of existing neighborhood and regional parks or other recreational facilities because it would not introduce new recreational amenities, expand park facilities, or induce population growth or visitor serving uses. As a result, the project would not cause or result in substantial physical deterioration of recreational facilities.

The project would construct a 1.6-mile multi-use trail (from Sunrise Parkway to the Amtrak's Palm Springs Station) connecting to CV Link (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection. Implementation of the proposed project would not have an adverse physical effect on the environment as the multi-use trail would be located within the existing street right-of-way and would enhance recreational opportunities in the vicinity. Impacts would be less than significant in this regard.

Mitigation Measures: No mitigation measures are required.

4.17 Transportation

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
TRANSPORTATION: *Would the project:*				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) 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

Within the project site, Indian Canyon Drive is a four-lane roadway. Regionally it travels north-south from Twentynine Palms Highway in the north to Palm Canyon Drive. Within the project area, approximately 2,300 feet south of Palm Springs Station Road, Indian Canyon Road transitions into a two-lane roadway. Indian Canyon Drive provides access to Interstate 10 and crosses the Whitewater Wash. The City's General Plan Circulation Element identifies the section of Indian Canyon Drive within the project area as a four-lane divided Major Thoroughfare. The posted speed limit within the project vicinity is 55 miles per hour (mph).

Discussion of Impacts

This section is based upon the following study prepared for the project:

- *Western Coachella Valley Flood and Blowsand Road Improvement Project – Indian Canyon Drive VMT Screening Analysis*, December 2025, prepared by Michael Baker International; refer to Appendix E.
- *Western Coachella Valley Flood and Blowsand Road Improvement Project – Indian Canyon Drive Traffic Study*, April 2026, prepared by Michael Baker International; refer to Appendix F.

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

Less than Significant Impact. The City of Palm Springs General Plan Circulation Element was developed with the intent to identify policies and actions that the City will take to improve the

operation of the existing transportation, as well as document existing and future transportation facilities in the City. The City's General Plan Circulation Element specifically calls out the proposed project in the following policy:

Policy CR2.8 Improve connectivity and resilience in and out of the City by constructing all-weather bridge crossings and other infrastructure enhancements along major access corridors like Vista Chino, Gene Autry Trail, Indian Canyon Drive, and Palm Canyon Drive.

Accordingly, the project would be implementing Policy CR2.8 and thus would not conflict with the City's General Plan.

Transit

The SunLine Transit Agency (STA) provides transit service in the project area including fixed-route bus service and Dial-a-Ride service. Dial-a-Ride service is provided for locations within three quarters of a mile of an STA local route, meaning service is provided in the project area. Service offered through the Study Area is provided by Route 4 seven (7) days a week. Route 4 spans between the Palm Springs and Palm Desert. The project would not interfere with the bus routes within the project site vicinity.

Bike and Pedestrian

The project includes the development of a 1.6-mile multi-use trail (from Sunrise Parkway to the Amtrak's Palm Springs Station) ultimately connecting to CV Link (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection. This multi-use trail is a proposed bicycle facility shown on Figure 4-4, Bikeways and Recreational Trails of the City's General Plan Circulation Element. The project would comply with the City's design and development standards; therefore, the project would not interfere with existing or planned bicycle facilities or sidewalks in the City.

The project would not conflict with a program plan, ordinance or policy addressing the circulation system and therefore no mitigation measures are required. Impacts would be less than significant.

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

Less than Significant Impact. CEQA Guidelines Section 15064.3(b) identifies criteria to analyze transportation impacts for land use projects (subdivision 15064.3(b)(1)) and transportation projects (subdivision 15064.3(b)(2)). A Vehicle Miles Traveled Screening Analysis was prepared for the proposed project; refer to Appendix E. The City of Palm Springs Traffic Impact Analysis Guidelines (July 2020) *(City Guidelines)* and the Riverside County Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled (December 2020) (*County Guidelines*) were utilized for this analysis. The Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA,* December 2018 *(Technical Advisory)* was used as a secondary resource.

Per County Guidelines and OPR Technical Advisory, transportation projects that increase motor vehicle capacity can lead to additional travel on the roadway network, therefore potentially resulting in increased VMT. VMT assessments for transportation projects require an analysis to determine if the transportation project induces substantial additional VMT. While the City Guidelines focus on VMT screening analysis relative to potential land use development projects, the County Guidelines provide screening criteria to be considered on a project-by-project basis to determine whether a VMT transportation impact analysis should be performed.

The proposed project meets the following screening criteria for transportation projects: Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts); Rehabilitation and maintenance projects that do not add motor vehicle capacity; Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way; and Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve nonmotorized travel. As the project meets County Guidelines screening criteria, it is not likely to lead to substantial or measurable increase in vehicle travel, and thus the project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). 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)?

Less than Significant Impact. Indian Canyon Road's existing alignment does not include sharp curves or dangerous intersections. The proposed project would follow the existing alignment of the roadway and does not propose the addition of any features that would increase hazards. Further, the proposed project does not support any incompatible uses. Accordingly, the project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). A less than significant impact would occur.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. As discussed in Section 4.9, *Hazards and Hazardous Materials*, the project site design shall be reviewed for compliance with project-specific emergency access as a routine aspect of the City's design review process. In addition, the project does not propose any changes to adjacent roadways that could potentially impair emergency response or evacuation (lane reductions, narrowing, permanent road closures, etc.). The project would comply with all local, regional, State, and Federal guidelines related to emergency access.

Construction of the proposed project has the potential to result in partial lane closures. Temporary traffic control during construction would be implemented in accordance with applicable Caltrans standards and requirements, including the California Manual on Uniform Traffic Control Devices and Caltrans work zone traffic control guidelines, to maintain safe and orderly traffic flow and to ensure continued access for emergency response and evacuation.

Thus, implementation of the project would not result in inadequate emergency access and impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
TRIBAL CULTURAL RESOURCES:				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Setting

Under CEQA, a project may have a significant effect on the environment if the project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of an historical resource that convey its historic significance and qualify it for inclusion in the California Register or in a local register or survey that meets the requirements of Public Resource Code Section 5020.1(l) and 5024.1(g). Public Resource Code Section 5024 also requires state agencies to identify and protect state-owned resources that meet National Register of Historic Place (National Register) listing criteria. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocation, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

CEQA and the CEQA Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC section 21083.2(i) CCR Section 15064.5[d and f]).

Discussion of Impacts

Pursuant to Assembly Bill 52 (AB 52) and Section 106 of the National Historic Preservation Act, CVAG and Caltrans provided consultation letters to several Native American Tribal Governments. A summary of the consultation efforts is provided below.

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

No Impact. There are no known tribal cultural resources within the project site. Further, as detailed in Section 4.5, *Cultural Resources*, Response 4.5(a), no historic resources listed or eligible for listing in a State or local register of historical resources are located on the project site. Therefore, no impacts related to historic tribal cultural resources defined in Public Resources Code Section 5020.1(k) would occur.

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

Less Than Significant Impact With Mitigation. As part of the *Archaeological Survey Report*, a Sacred Lands File (SLF) search request was submitted to the Native American Heritage Commission (NAHC) on December 1, 2023. The NAHC responded on December 4, 2024, that there are no known sacred lands within the project area. The NAHC recommended that representatives from local Native American tribal organizations be contacted for further information regarding the project area.

On October 23, 2025, CVAG and Caltrans provided consultation invitation letters via electronic mail to the three (3) Native American Tribal Governments listed below, requesting information related to tribal cultural resources or heritage sites within the area of potential effect:

- Agua Caliente Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Twenty-Nine Palms Band of Mission Indians

The Agua Caliente Band of Cahuilla Indians (ACBCI) provided responses to CVAG and Caltrans on November 12, 2025, requesting consultation pursuant to AB 52 and Section 106. On November 17, 2025, a copy of the *Archaeological Survey Report* was provided to ACBCI. On November 24, 2025, a teleconference meeting was held with ACBCI, Caltrans, and CVAG. During this consultation, ACBCI indicated that the project site is located within their tribal Traditional Use Area. ACBCI recommended various measures which are provided below as mitigation measures TCR-1: Native American Cultural Monitoring; TCR-2: Inadvertent Discoveries; and TCR-3: Reburial Protocol. One recommendation regarding the treatment of human remains is not listed as mitigation as it is a standard state requirement of construction projects (California Health and Safety Code Section 7050.5). Project consultation with ACBCI was concluded in April 2026.

On November 24, 2025, CVAG and Caltrans provided a second consultation invitation letter via electronic mail to the Soboba Band of Luiseno Indians and Twenty-Nine Palms Band of Mission Indians.

On December 23, 2035, CVAG and Caltrans provided a third consultation invitation letter via electronic mail to the Soboba Band of Luiseno Indians and Twenty-Nine Palms Band of Mission Indians. On December 29, 2025 the Soboba Band of Luiseno Indians responded to the consultation initiation and deferred to the ACBCI.

The results of the *Archaeological Survey Report* did not indicate that the project site supports known tribal cultural resources. However, as a result of consultation, cultural monitoring would be required during ground-disturbing activities to minimize impacts to potential unknown tribal cultural resources in compliance with MM TCR-1. Implementation of MM TCR-1 would ensure that impacts relative to tribal cultural resources are less than significant. In the event there is an inadvertent discovery made during construction, TCR-2 and TCR-3 are intended to ensure that impacts relative to tribal cultural resources are less than significant.

Mitigation Measures:

TCR-1: **Native American Cultural Monitoring.** Prior to ground disturbance, CVAG shall enter into written monitoring agreement with the Agua Caliente Band of Cahuilla Indians - Tribal Historic Preservation Office to identify the appropriate number of Native American Cultural Monitor(s) to be present on-site during initial earthwork activities. The Native American Cultural Monitor(s) shall be onsite during initial ground disturbing activities and excavation of soils in each portion of the project site including clearing, grubbing, grading, and trenching. The Native American Cultural Monitor(s) shall attend the pre-construction meeting with the Contractor to provide Cultural Sensitivity Training for construction personnel. The Native American Cultural Monitor(s) have the authority to temporarily divert, redirect or halt the ground disturbance activities to allow identification, evaluation, and potential recovery of cultural resources. In the event a cultural resource is located, the Native American Cultural Monitor shall notify the Construction Inspector with two (2 hours).

TCR-2: **Inadvertent Discoveries.** If during ground disturbance activities, unanticipated cultural resources are discovered, the following procedures shall be followed: All ground disturbance activities within 50 feet of the discovered cultural resource shall be halted and a meeting shall be convened within 24-hours between CVAG, City of Palm Springs, and the Native American Tribal Representative to discuss the significance of the find. At the meeting with the aforementioned parties, a decision is to be made, with the concurrence of the consulting Tribe, as to the appropriate treatment (documentation, recovery, avoidance etc.) for the cultural resource. A Secretary of the Interior (SOI) Qualified Archaeologist shall be retained if deemed necessary by the parties involved. Resource evaluations shall be limited to nondestructive analysis. Further ground disturbance shall not resume within the area of the discovery until the appropriate treatment has been accomplished.

TCR-3: **Reburial Protocol.** As part of the monitoring agreement identified within TCR-1: Native American Cultural Monitoring, CVAG shall come to an agreement with the Agua Caliente Band of Cahuilla Indians indicating an area on-site which will be used, if needed, for reburial of any artifacts that have been identified during the duration of the project and cannot be avoided. The location has to be kept confidential and in an area that will not be disturbed in the future.

4.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS: *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?	☐	☐	☒	☐
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

Wastewater

Wastewater services are provided by the Desert Water Agency (DWA) and the City of Palm Springs. Palm Spring contracts with the Veolia Water North American for wastewater services. Wastewater is collected and processed at the Palm Springs' Wastewater Treatment Plant, located at 4375 E Mesquite Avenue, approximately 6.7 miles southeast from the project. The City treats the wastewater and sends approximately 75% of the treated wastewater to DWA for further filtration and disinfection. Once treated to all state and federal recycled water standards, DWA delivers the recycled water for irrigation of the City's municipal golf course and parks. The remaining 25% of treated sewage flows into lagoons called percolation ponds where it seeps into the ground to recharge groundwater.

Drinking Water

The DWA provides potable (drinking) water to Palm Springs, Desert Hot Springs, and part of Cathedral City, encompassing a 325-square mile service area. About 95% of the drinking water comes from groundwater subbasins, the remaining 5% comes from surface water from mountain streams. The majority of groundwater is collected from the Whitewater River subbasin.

Flood Management

The City of Palm Spring is dry for most of the year, however, unexpected flash floods due to rain fall and severe storms affects the City's infrastructure. The City has taken preventative measures by building concrete levees, storm drainage, and detention basins. These flood control structures are located in special flood hazard areas. Palm Springs enforces the National Pollutant Discharge Elimination System (NPDES) onto new development projects including the proposed project to ensure the establishment of mitigation plans and programs addressing the development, adoption, and enforcement of stormwater management and non-stormwater runoff reduction.

Solid Waste

The Palm Springs Disposal Services (PSDS) collects and disposes of solid waste in the City. The waste is transported to the Burrtec Recover and Transfer Sation located at 70100 Edom Hill Road at Edom Hill, approximately 6.0 miles east of the project. The Station is permitted to receive 3,500 tons of waste per day. From there solid waste is taken to the Lamb Canyon landfill in Beaumont, which has a permitted capacity of 5,000 tons per day, a remaining capacity of 14,540,000 tons[35] and a projected closure date in 2029. Additional sites with ability to receive solid waste include the Badlands Landfill in Moreno Valley and El Sobrante Landfill in Corona. The County of Riverside operates Lamb Canyon and Badlands landfills, and El Sobrante Landfill is privately owned.

Electric

Southern California Edison (SCE) provides electricity to the City. High-voltage transmission lines deliver power to the substation, where power is then stepped down and distributed through lower-voltage lines, and finally delivered to homes and businesses through a final transformer, which brings voltages down to usable levels.

Natural Gas

The Southern California Gas Company provides natural gas to the City. Natural gas is found in association with petroleum crude oil deposits and is transported through the country through high-pressure transmission lines.

Telecommunications Facilities

As identified in the City's General Plan Circulation Element, there are currently adequate telecommunication facilities to serve the needs of the City. Data transmission, connectivity to the

[35] CalRecycle, *SWIS Facility Detail, Lamb Canyon Disposal,* https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2246?siteID=2368, accessed October 18, 2025.

internet, and other wired and wireless data transmission systems are provided by a variety of carriers and provider including Spectrum, Frontier, Viasat, and T-Mobile Home Internet.

Discussion of Impacts

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?

No Impact. The project does not require new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, and no significant effect would occur.

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?

Less than Significant Impact. The roadway project would not generate water demand during post-construction activities and would only generate minimal demand for water during construction in the form of onsite water trucks used for watering down non-paved exposed surface roads utilized by construction vehicles and mechanized equipment. Therefore, project impacts in regard to having sufficient water supplies available would be less than significant.

c) 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?

Less than Significant Impact. Solid waste disposal and recycling services for the City are provided by Palm Spring Disposal Services, the City's franchise trash hauler.[36] Implementation of the project would generate a temporary, marginal increase in solid waste during construction as the result of demolition activities. Solid waste would be collected and transported to the Burrtec Recover and Transfer Sation located at 70100 Edom Hill Road at Edom Hill, approximately 6.0 miles east of the project. The Station is permitted to receive 3,500 tons of waste per day. From there solid waste is taken to the Lamb Canyon landfill in Beaumont, which has a permitted capacity of 5,000 tons per day. Additional sites with ability to receive solid waste are the Badlands Sanitary Landfill, El Sobrante Sanitary Landfill and Lamb Canyon Sanitary Landfill. CalRecycle data indicates the Badlands Disposal site has 4,900,000 cubic yards of remaining capacity,[37] and the El Sobrante Landfill has a remaining capacity of 3,271,203 cubic yards. The project would not generate solid waste post-construction. Therefore, project impacts in regard to generating solid waste in excess of capacity of local infrastructure would be less than significant.

[36] Palm Springs Disposal Services, https://www.palmspringsdisposal.com/residential/index.htm, accessed October 16, 2025.
[37] CalRecycle, *SWIS Facility Detail, Badlands,* https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2245?siteID=2367, accessed October 18, 2025.

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

Less than Significant Impact. Considering the availability of landfill capacity as described above and that waste will only be generated during the construction phase, the project's solid waste disposal needs can be adequately met without a significant impact on the capacity of the nearest landfills: Badlands Sanitary Landfill, El Sobrante Sanitary Landfill and Lamb Canyon Sanitary Landfill. Therefore, it is not expected that the project would impact the City's compliance with State-mandated (AB 939) waste diversion requirements, which requires each jurisdiction in California to divert at least 50 percent of its waste stream away from landfills either through waste reduction, recycling or other means. As the City currently complies with the provisions of AB 341 and AB 939, project impacts in regard to compliance with federal, state and local solid waste regulations would be less than significant.

Mitigation Measures: No mitigation measures are required.

4.20 Wildfire

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
WILDFIRE: *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

The project area is generally flat and gently sloping to the east with an elevation ranging from approximately 620 feet at the southern boundary to 660 feet at the northern boundary. The project area is not in a State Responsibility Area or lands classified as very high fire hazard severity zone.

Discussion of Impacts

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?

Less Than Significant Impact. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project site is not located in or near a state responsibility area. Lands adjacent to the project's alignment are identified as being

within a Moderate Fire Hazard Severity Zone as well as areas identified as No Fire Hazard Severity Zone.[38]

Construction of the project would result in temporary partial lane closures. Temporary traffic control during construction would be implemented in accordance with applicable City and/or Caltrans standards and requirements, including the California Manual on Uniform Traffic Control Devices and Caltrans work zone traffic control guidelines, to maintain safe and orderly traffic flow and to ensure continued access for emergency response and evacuation. Work zone traffic control would be designed to provide advance warning, clearly marked detours where necessary, and accommodation for emergency vehicles at all times. Further, as a standard requirement from the City's engineering department and Traffic Management Center, the construction contractor would implement an approved Traffic Control Plan in order to provide information regarding detours, lane closures, and rerouting strategies to minimize congestion and safety impacts during the construction process. The Traffic Control Plan would include best management practices to the satisfaction of the City. Therefore with implementation of the required Traffic Control Plan the project would not substantially impair or physically interfere with the designated primary community evacuation route during construction of the project and impacts would be less than significant.

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, 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?

No Impact. As stated in Response 4.20(a) above, the project area is not in a state responsibility areas or located in a very high fire hazard severity zone or adjacent to wildlands subject to wildfires. Therefore, the proposed project would not exacerbate wildfire risks or expose project occupants to pollutants from wildfires. There would be no impact.

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?

No Impact. Refer to Response 4.20(a) above. No impact would occur in this regard.

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?

No Impact. Refer to Response 4.20(a) above. No impact would occur in this regard.

[38] California Fire (CalFIRE), *Fire Hazard Severity Zones*, https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones, accessed March 10, 2026.

Mitigation Measures: No mitigation measures are required.

4.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact with Mitigation	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE:				
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?	☐	☒	☐	☐

Discussion

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?

Less Than Significant Impact With Mitigation. As concluded in Section 4.4, *Biological Resources*, to reduce or avoid potential impacts to special status wildlife, sensitive natural communities, wildlife movement, and native wildlife nursery sites, the project would implement mitigation measures BIO-1 through BIO-16. In compliance with BIO-1 through BIO-16, the project would adhere to the following: delineate environmentally sensitive areas (BIO-1); reduce introduction of exotic species through routine equipment inspection and cleaning (BIO-2); protect fluvial sand transport areas (BIO-3); ensure runoff does not enter conservation areas (BIO-4); implement Best Management Practices to prevent the release of toxins in to Conservation Areas (BIO-5); fueling

restrictions (BIO-6); compensatory mitigation requirements for sand-affiliated habitat (BIO-7); Coachella Valley Milk-vetch seed collection for future restoration purposes (BIO-8); worker environmental awareness education program, to reduce impacts to listed species (BIO-9); biological monitoring for listed species (BIO-10); no sand removal activities will take place from November 1 to March 30 to reduce impacts to the Coachella Valley fringe-toed lizard (BIO-11); preconstruction burrowing owl survey (BIO-12); LeVonte's thrasher survey during the nesting season (BIO-13); preconstruction nesting bird surveys during the bird breeding season (BIO-14); the shielding of nighttime lighting (BIO-15); and compensatory mitigation requirements for aquatic resources (BIO-16). With implementation of these mitigation measures, biological impacts would be reduced to a less than significant level.

As indicated in Section 4.5, *Cultural Resources* and Section 4.18, *Tribal Cultural Resources*, no archaeological or tribal cultural resources are known to occur on-site. However, as a result of consultation, cultural monitoring would be required during ground-disturbing activities to minimize impacts to potential unknown tribal cultural resources in compliance with mitigation measure TCR-1 (Native American Cultural Monitoring). In the event there is an inadvertent discovery made during construction, mitigation measure TCR-2 (Inadvertent Discoveries) would and TCR-3 (Reburial Protocol) are required and intended to reduce or avoid impacts relative to tribal cultural resources. With the implementation of mitigation measures TCR-1 through TCR-3 potential impacts would be less than significant.

As analyzed, the project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California 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)?

Less Than Significant Impact with Mitigation. A significant impact may occur if a proposed project, in conjunction with related projects, would result in impacts that are less than significant when viewed separately, but would be significant when viewed together. As concluded in Section 4.1 through Section 4.20, the proposed project would not result in a significant environmental impact with implementation of the project mitigation measures. Implementation of mitigation measures at the project-level would reduce the potential for the incremental effects of the proposed project to be considerable when viewed in connection with the effects of past projects, current projects, or probable future projects. Impacts would be less than significant with mitigation incorporated in this regard.

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

Less Than Significant Impact with Mitigation. Previous sections of this Initial Study reviewed the proposed project's potential impacts related to aesthetics, air quality, noise, hazards and hazardous materials, transportation, and other environmental resource topics. As concluded in these previous discussions, the project would not have environmental effect which would cause substantial adverse effects on human beings, either directly or indirectly, following conformance with the existing regulatory framework and implementation of project mitigation measures. Impacts would be less than significant with mitigation incorporated in this regard.

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Appendix A

Air Quality/Greenhouse Gas Emissions/Energy Modeling

CVAG Roadway Improvements Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	CVAG Roadway Improvements
Construction Start Date	7/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.3
Precipitation (days)	11
Location	33.8986059637009, -116.54610925548974
County	Riverside-Salton Sea
City	Palm Springs
Air District	South Coast AQMD
Air Basin	Salton Sea
TAZ	5694
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.33

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
Road Construction	1.6	Mile	10.0	0.00	—	—	—	—
Bridge/Overpass Construction	0.25	Mile	1.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-B	Water Active Demolition Sites
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

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.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13	11	89	118	0.21	3.8	4.4	8.1	3.5	0.77	4.2	—	24,842	24,842	1.0	0.86	11	24,950
Mit.	13	11	89	118	0.21	3.8	4.4	8.1	3.5	0.77	4.2	—	24,842	24,842	1.0	0.86	11	24,950
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13	11	89	113	0.21	3.8	4.2	8.0	3.5	0.77	4.2	—	24,566	24,566	0.96	0.86	0.32	24,667
Mit.	13	11	89	113	0.21	3.8	4.2	8.0	3.5	0.77	4.2	—	24,566	24,566	0.96	0.86	0.32	24,667
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	4.0	3.4	28	34	0.07	1.2	1.7	2.7	1.1	0.32	1.4	—	8,694	8,694	0.30	0.36	2.0	8,810
Mit.	4.0	3.4	28	34	0.07	1.2	1.7	2.7	1.1	0.32	1.4	—	8,694	8,694	0.30	0.36	2.0	8,810
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.73	0.61	5.2	6.2	0.01	0.22	0.31	0.50	0.20	0.06	0.25	—	1,439	1,439	0.05	0.06	0.34	1,459
Mit.	0.73	0.61	5.2	6.2	0.01	0.22	0.31	0.50	0.20	0.06	0.25	—	1,439	1,439	0.05	0.06	0.34	1,459
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	13	11	89	118	0.21	3.8	4.4	8.1	3.5	0.68	4.2	—	24,842	24,842	1.0	0.26	6.1	24,950
2027	8.0	6.7	59	67	0.18	2.2	4.1	6.4	2.0	0.77	2.8	—	21,038	21,038	0.69	0.86	11	21,324
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	13	11	89	113	0.21	3.8	4.2	8.0	3.5	0.74	4.2	—	24,566	24,566	0.96	0.86	0.32	24,667
2027	7.9	6.6	59	65	0.18	2.2	4.1	6.4	2.0	0.77	2.8	—	20,904	20,904	0.69	0.86	0.30	21,179
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.0	3.4	28	34	0.07	1.2	1.5	2.7	1.1	0.25	1.4	—	8,241	8,241	0.30	0.17	1.2	8,299
2027	3.3	2.8	24	27	0.07	0.91	1.7	2.6	0.84	0.32	1.2	—	8,694	8,694	0.29	0.36	2.0	8,810
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.73	0.61	5.2	6.2	0.01	0.22	0.28	0.50	0.20	0.05	0.25	—	1,364	1,364	0.05	0.03	0.21	1,374
2027	0.60	0.50	4.5	5.0	0.01	0.17	0.31	0.48	0.15	0.06	0.21	—	1,439	1,439	0.05	0.06	0.34	1,459

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	13	11	89	118	0.21	3.8	4.4	8.1	3.5	0.68	4.2	—	24,842	24,842	1.0	0.26	6.1	24,950
2027	8.0	6.7	59	67	0.18	2.2	4.1	6.4	2.0	0.77	2.8	—	21,038	21,038	0.69	0.86	11	21,324
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	13	11	89	113	0.21	3.8	4.2	8.0	3.5	0.74	4.2	—	24,566	24,566	0.96	0.86	0.32	24,667
2027	7.9	6.6	59	65	0.18	2.2	4.1	6.4	2.0	0.77	2.8	—	20,904	20,904	0.69	0.86	0.30	21,179
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.0	3.4	28	34	0.07	1.2	1.5	2.7	1.1	0.25	1.4	—	8,241	8,241	0.30	0.17	1.2	8,299
2027	3.3	2.8	24	27	0.07	0.91	1.7	2.6	0.84	0.32	1.2	—	8,694	8,694	0.29	0.36	2.0	8,810
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.73	0.61	5.2	6.2	0.01	0.22	0.28	0.50	0.20	0.05	0.25	—	1,364	1,364	0.05	0.03	0.21	1,374
2027	0.60	0.50	4.5	5.0	0.01	0.17	0.31	0.48	0.15	0.06	0.21	—	1,439	1,439	0.05	0.06	0.34	1,459

3. Construction Emissions Details

3.1. Linear, Grubbing & Land Clearing (2026) - Unmitigated

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

Location	TOG	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-Roa Equipment	0.99	0.83	7.3	8.0	0.01	0.40	—	0.40	0.37	—	0.37	—	1,122	1,122	0.05	0.01	—	1,126
Dust From Material Movement	—	—	—	—	—	—	0.28	0.28	—	0.03	0.03	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.16	0.16	—	0.02	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.87	0.96	< 0.005	0.05	—	0.05	0.04	—	0.04	—	135	135	0.01	< 0.005	—	136
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	22	22	< 0.005	< 0.005	—	22
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.8	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	291	291	0.01	0.01	0.93	295
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	0.00
Hauling	0.01	< 0.005	0.21	0.05	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	189	189	< 0.005	0.03	0.39	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32	32	< 0.005	< 0.005	0.05	32
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	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23	23	< 0.005	< 0.005	0.02	24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.3	5.3	< 0.005	< 0.005	0.01	5.3
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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.8	3.8	< 0.005	< 0.005	< 0.005	4.0

3.2. Linear, Grubbing & Land Clearing (2026) - Mitigated

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

Location	TOG	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-Roa Equipment	0.99	0.83	7.3	8.0	0.01	0.40	—	0.40	0.37	—	0.37	—	1,122	1,122	0.05	0.01	—	1,126
Dust From Material Movement	—	—	—	—	—	—	0.28	0.28	—	0.03	0.03	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.16	0.16	—	0.02	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.87	0.96	< 0.005	0.05	—	0.05	0.04	—	0.04	—	135	135	0.01	< 0.005	—	136
Dust From Material Movement	—	—	—	—	—	—	0.03	0.03	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	22	22	< 0.005	< 0.005	—	22
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.8	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	291	291	0.01	0.01	0.93	295
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	0.00
Hauling	0.01	< 0.005	0.21	0.05	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	189	189	< 0.005	0.03	0.39	199
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32	32	< 0.005	< 0.005	0.05	32
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	0.00
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23	23	< 0.005	< 0.005	0.02	24
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.3	5.3	< 0.005	< 0.005	0.01	5.3
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	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.8	3.8	< 0.005	< 0.005	< 0.005	4.0

3.3. Linear, Grading & Excavation (2026) - Unmitigated

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

Location	TOG	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-Roa Equipment	11	8.9	76	87	0.18	3.3	—	3.3	3.1	—	3.1	—	19,970	19,970	0.81	0.16	—	20,039
Dust From Material Movement	—	—	—	—	—	—	2.5	2.5	—	0.27	0.27	—	—	—	—	—	—	—
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	11	8.9	76	87	0.18	3.3	—	3.3	3.1	—	3.1	—	19,970	19,970	0.81	0.16	—	20,039
Dust From Material Movement	—	—	—	—	—	—	2.5	2.5	—	0.27	0.27	—	—	—	—	—	—	—
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.6	2.2	18	21	0.04	0.80	—	0.80	0.74	—	0.74	—	4,815	4,815	0.20	0.04	—	4,831
Dust From Material Movement	—	—	—	—	—	—	0.60	0.60	—	0.06	0.06	—	—	—	—	—	—	—
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.39	3.3	3.8	0.01	0.15	—	0.15	0.13	—	0.13	—	797	797	0.03	0.01	—	800

Dust From Material Movement	—	—	—	—	—	—	0.11	0.11	—	0.01	0.01	—	—	—	—	—	—	—
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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.45	0.41	0.43	8.0	0.00	0.00	1.2	1.2	0.00	0.28	0.28	—	1,308	1,308	0.05	0.04	4.2	1,327
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62	62	< 0.005	0.01	0.16	65
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.34	0.47	4.5	0.00	0.00	1.2	1.2	0.00	0.28	0.28	—	1,114	1,114	0.02	0.04	0.11	1,128
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62	62	< 0.005	0.01	< 0.005	65
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.4	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	287	287	< 0.005	0.01	0.44	291
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15	15	< 0.005	< 0.005	0.02	16
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48	48	< 0.005	< 0.005	0.07	48
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.5	2.5	< 0.005	< 0.005	< 0.005	2.6
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	0.00

3.4. Linear, Grading & Excavation (2026) - Mitigated

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

Location	TOG	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	11	8.9	76	87	0.18	3.3	—	3.3	3.1	—	3.1	—	19,970	19,970	0.81	0.16	—	20,039
Dust From Material Movement	—	—	—	—	—	—	2.5	2.5	—	0.27	0.27	—	—	—	—	—	—	—
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	11	8.9	76	87	0.18	3.3	—	3.3	3.1	—	3.1	—	19,970	19,970	0.81	0.16	—	20,039
Dust From Material Movement	—	—	—	—	—	—	2.5	2.5	—	0.27	0.27	—	—	—	—	—	—	—
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.6	2.2	18	21	0.04	0.80	—	0.80	0.74	—	0.74	—	4,815	4,815	0.20	0.04	—	4,831
Dust From Material Movement	—	—	—	—	—	—	0.60	0.60	—	0.06	0.06	—	—	—	—	—	—	—

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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.39	3.3	3.8	0.01	0.15	—	0.15	0.13	—	0.13	—	797	797	0.03	0.01	—	800
Dust From Material Movement	—	—	—	—	—	—	0.11	0.11	—	0.01	0.01	—	—	—	—	—	—	—
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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.45	0.41	0.43	8.0	0.00	0.00	1.2	1.2	0.00	0.28	0.28	—	1,308	1,308	0.05	0.04	4.2	1,327
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62	62	< 0.005	0.01	0.16	65
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.34	0.47	4.5	0.00	0.00	1.2	1.2	0.00	0.28	0.28	—	1,114	1,114	0.02	0.04	0.11	1,128
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	62	62	< 0.005	0.01	< 0.005	65
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.10	1.4	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	287	287	< 0.005	0.01	0.44	291
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15	15	< 0.005	< 0.005	0.02	16
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.25	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48	48	< 0.005	< 0.005	0.07	48

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.5	2.5	< 0.005	< 0.005	< 0.005	2.6
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	0.00

3.5. Linear, Drainage, Utilities, & Sub-Grade (2026) - Unmitigated

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

Location	TOG	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	7.8	6.5	57	61	0.15	2.3	—	2.3	2.1	—	2.1	—	15,741	15,741	0.64	0.13	—	15,795
Dust From Material Movement	—	—	—	—	—	—	2.1	2.1	—	0.22	0.22	—	—	—	—	—	—	—
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.93	0.78	6.9	7.3	0.02	0.27	—	0.27	0.25	—	0.25	—	1,879	1,879	0.08	0.02	—	1,886
Dust From Material Movement	—	—	—	—	—	—	0.25	0.25	—	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.3	1.3	< 0.005	0.05	—	0.05	0.05	—	0.05	—	311	311	0.01	< 0.005	—	312
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	< 0.005	< 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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.24	0.34	3.3	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	804	804	0.01	0.03	0.08	814
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	0.00
Hauling	0.13	0.09	5.3	1.2	0.03	0.09	1.2	1.3	0.09	0.31	0.40	—	4,491	4,491	0.04	0.70	0.24	4,702
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.04	0.49	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	103	103	< 0.005	< 0.005	0.16	104
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	0.00
Hauling	0.02	0.01	0.63	0.14	< 0.005	0.01	0.14	0.16	0.01	0.04	0.05	—	536	536	0.01	0.08	0.48	561
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17	17	< 0.005	< 0.005	0.03	17
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	0.00
Hauling	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	89	89	< 0.005	0.01	0.08	93

3.6. Linear, Drainage, Utilities, & Sub-Grade (2026) - Mitigated

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

Location	TOG	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	7.8	6.5	57	61	0.15	2.3	—	2.3	2.1	—	2.1	—	15,741	15,741	0.64	0.13	—	15,795
Dust From Material Movement	—	—	—	—	—	—	2.1	2.1	—	0.22	0.22	—	—	—	—	—	—	—
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.93	0.78	6.9	7.3	0.02	0.27	—	0.27	0.25	—	0.25	—	1,879	1,879	0.08	0.02	—	1,886
Dust From Material Movement	—	—	—	—	—	—	0.25	0.25	—	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.3	1.3	< 0.005	0.05	—	0.05	0.05	—	0.05	—	311	311	0.01	< 0.005	—	312

Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	< 0.005	< 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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.24	0.34	3.3	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	804	804	0.01	0.03	0.08	814
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	0.00
Hauling	0.13	0.09	5.3	1.2	0.03	0.09	1.2	1.3	0.09	0.31	0.40	—	4,491	4,491	0.04	0.70	0.24	4,702
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.04	0.49	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	103	103	< 0.005	< 0.005	0.16	104
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	0.00
Hauling	0.02	0.01	0.63	0.14	< 0.005	0.01	0.14	0.16	0.01	0.04	0.05	—	536	536	0.01	0.08	0.48	561
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17	17	< 0.005	< 0.005	0.03	17
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	0.00
Hauling	< 0.005	< 0.005	0.11	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	89	89	< 0.005	0.01	0.08	93

3.7. Linear, Drainage, Utilities, & Sub-Grade (2027) - Unmitigated

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

Location	TOG	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	7.5	6.3	54	61	0.15	2.1	—	2.1	1.9	—	1.9	—	15,739	15,739	0.64	0.13	—	15,793
Dust From Material Movement	—	—	—	—	—	—	2.1	2.1	—	0.22	0.22	—	—	—	—	—	—	—
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.5	6.3	54	61	0.15	2.1	—	2.1	1.9	—	1.9	—	15,739	15,739	0.64	0.13	—	15,793
Dust From Material Movement	—	—	—	—	—	—	2.1	2.1	—	0.22	0.22	—	—	—	—	—	—	—
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.1	2.6	22	25	0.06	0.88	—	0.88	0.81	—	0.81	—	6,530	6,530	0.26	0.05	—	6,552
Dust From Material Movement	—	—	—	—	—	—	0.86	0.86	—	0.09	0.09	—	—	—	—	—	—	—
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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	0.48	4.1	4.6	0.01	0.16	—	0.16	0.15	—	0.15	—	1,081	1,081	0.04	0.01	—	1,085
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.02	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.28	0.28	5.4	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	926	926	0.01	0.03	2.7	938
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	0.00
Hauling	0.14	0.09	4.8	1.2	0.03	0.09	1.2	1.3	0.09	0.34	0.43	—	4,372	4,372	0.04	0.70	8.7	4,592
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.23	0.31	3.0	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	789	789	0.01	0.03	0.07	798
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	0.00
Hauling	0.13	0.09	5.2	1.2	0.03	0.09	1.2	1.3	0.09	0.34	0.43	—	4,376	4,376	0.04	0.70	0.22	4,588
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.12	1.6	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	350	350	< 0.005	0.01	0.49	354
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	0.00
Hauling	0.06	0.04	2.1	0.48	0.01	0.04	0.50	0.54	0.04	0.14	0.18	—	1,815	1,815	0.02	0.29	1.6	1,904
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	58	58	< 0.005	< 0.005	0.08	59
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	0.00
Hauling	0.01	0.01	0.39	0.09	< 0.005	0.01	0.09	0.10	0.01	0.03	0.03	—	300	300	< 0.005	0.05	0.26	315

3.8. Linear, Drainage, Utilities, & Sub-Grade (2027) - Mitigated

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

Location	TOG	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	7.5	6.3	54	61	0.15	2.1	—	2.1	1.9	—	1.9	—	15,739	15,739	0.64	0.13	—	15,793
Dust From Material Movement	—	—	—	—	—	—	2.1	2.1	—	0.22	0.22	—	—	—	—	—	—	—
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.5	6.3	54	61	0.15	2.1	—	2.1	1.9	—	1.9	—	15,739	15,739	0.64	0.13	—	15,793
Dust From Material Movement	—	—	—	—	—	—	2.1	2.1	—	0.22	0.22	—	—	—	—	—	—	—
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.1	2.6	22	25	0.06	0.88	—	0.88	0.81	—	0.81	—	6,530	6,530	0.26	0.05	—	6,552

Dust From Material Movement	—	—	—	—	—	—	0.86	0.86	—	0.09	0.09	—	—	—	—	—	—	—
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	0.48	4.1	4.6	0.01	0.16	—	0.16	0.15	—	0.15	—	1,081	1,081	0.04	0.01	—	1,085
Dust From Material Movement	—	—	—	—	—	—	0.16	0.16	—	0.02	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.28	0.28	5.4	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	926	926	0.01	0.03	2.7	938
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	0.00
Hauling	0.14	0.09	4.8	1.2	0.03	0.09	1.2	1.3	0.09	0.34	0.43	—	4,372	4,372	0.04	0.70	8.7	4,592
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.23	0.31	3.0	0.00	0.00	0.85	0.85	0.00	0.20	0.20	—	789	789	0.01	0.03	0.07	798
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	0.00
Hauling	0.13	0.09	5.2	1.2	0.03	0.09	1.2	1.3	0.09	0.34	0.43	—	4,376	4,376	0.04	0.70	0.22	4,588
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.12	1.6	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	350	350	< 0.005	0.01	0.49	354
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	0.00

Hauling	0.06	0.04	2.1	0.48	0.01	0.04	0.50	0.54	0.04	0.14	0.18	—	1,815	1,815	0.02	0.29	1.6	1,904
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.29	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	58	58	< 0.005	< 0.005	0.08	59
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	0.00
Hauling	0.01	0.01	0.39	0.09	< 0.005	0.01	0.09	0.10	0.01	0.03	0.03	—	300	300	< 0.005	0.05	0.26	315

3.9. Linear, Paving (2026) - Unmitigated

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

Location	TOG	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	1.7	1.4	13	20	0.03	0.53	—	0.53	0.49	—	0.49	—	2,955	2,955	0.12	0.02	—	2,965
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.7	1.4	13	20	0.03	0.53	—	0.53	0.49	—	0.49	—	2,955	2,955	0.12	0.02	—	2,965
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.6	2.4	< 0.005	0.06	—	0.06	0.06	—	0.06	—	356	356	0.01	< 0.005	—	357

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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.29	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59	59	< 0.005	< 0.005	—	59
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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.18	3.3	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	545	545	0.02	0.02	1.7	553
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	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.19	1.9	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	464	464	0.01	0.02	0.05	470
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	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60	60	< 0.005	< 0.005	0.09	61
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	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.9	9.9	< 0.005	< 0.005	0.02	10
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	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	0.00

3.10. Linear, Paving (2026) - Mitigated

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

Location	TOG	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	1.7	1.4	13	20	0.03	0.53	—	0.53	0.49	—	0.49	—	2,955	2,955	0.12	0.02	—	2,965
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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.7	1.4	13	20	0.03	0.53	—	0.53	0.49	—	0.49	—	2,955	2,955	0.12	0.02	—	2,965
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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.6	2.4	< 0.005	0.06	—	0.06	0.06	—	0.06	—	356	356	0.01	< 0.005	—	357
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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.29	0.43	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59	59	< 0.005	< 0.005	—	59

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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.17	0.18	3.3	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	545	545	0.02	0.02	1.7	553
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	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.14	0.19	1.9	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	464	464	0.01	0.02	0.05	470
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	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60	60	< 0.005	< 0.005	0.09	61
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	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.9	9.9	< 0.005	< 0.005	0.02	10
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	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	0.00

4. Operations Emissions Details

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)

Vegetati	TOG	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	TOG	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	TOG	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	TOG	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

Land Use	TOG	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	TOG	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
Linear, Grubbing & Land Clearing	Linear, Grubbing & Land Clearing	7/1/2026	8/31/2026	5.0	44	—
Linear, Grading & Excavation	Linear, Grading & Excavation	7/1/2026	10/31/2026	5.0	88	—
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	11/1/2026	7/31/2027	5.0	195	—
Linear, Paving	Linear, Paving	9/1/2026	10/31/2026	5.0	44	—

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
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	2.0	8.0	87	0.43
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	3.0	8.0	36	0.38

Linear, Grading & Excavation	Excavators	Diesel	Average	7.0	8.0	36	0.38
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	3.0	8.0	87	0.43
Linear, Grading & Excavation	Graders	Diesel	Average	3.0	8.0	148	0.41
Linear, Grading & Excavation	Rollers	Diesel	Average	5.0	8.0	36	0.38
Linear, Grading & Excavation	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	4.0	8.0	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Average	6.0	8.0	423	0.48
Linear, Grading & Excavation	Cranes	Diesel	Average	1.00	8.0	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Average	6.0	8.0	423	0.48
Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Average	2.0	8.0	96	0.40
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	3.0	8.0	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	2.0	8.0	8.0	0.43
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	2.0	8.0	11	0.74
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	2.0	8.0	37	0.48

Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	2.0	8.0	14	0.74
Linear, Paving	Rollers	Diesel	Average	4.0	8.0	36	0.38
Linear, Paving	Paving Equipment	Diesel	Average	2.0	8.0	89	0.36
Linear, Paving	Pavers	Diesel	Average	2.0	8.0	81	0.42
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Linear, Paving	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Grubbing & Land Clearing	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82
Linear, Grubbing & Land Clearing	Crawler Tractors	Diesel	Average	2.0	8.0	87	0.43
Linear, Grubbing & Land Clearing	Excavators	Diesel	Average	3.0	8.0	36	0.38
Linear, Grading & Excavation	Excavators	Diesel	Average	7.0	8.0	36	0.38
Linear, Grading & Excavation	Crawler Tractors	Diesel	Average	3.0	8.0	87	0.43
Linear, Grading & Excavation	Graders	Diesel	Average	3.0	8.0	148	0.41
Linear, Grading & Excavation	Rollers	Diesel	Average	5.0	8.0	36	0.38
Linear, Grading & Excavation	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Linear, Grading & Excavation	Rubber Tired Loaders	Diesel	Average	4.0	8.0	150	0.36
Linear, Grading & Excavation	Scrapers	Diesel	Average	6.0	8.0	423	0.48

Linear, Grading & Excavation	Cranes	Diesel	Average	1.00	8.0	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Scrapers	Diesel	Average	6.0	8.0	423	0.48
Linear, Drainage, Utilities, & Sub-Grade	Rough Terrain Forklifts	Diesel	Average	2.0	8.0	96	0.40
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Linear, Drainage, Utilities, & Sub-Grade	Graders	Diesel	Average	3.0	8.0	148	0.41
Linear, Drainage, Utilities, & Sub-Grade	Plate Compactors	Diesel	Average	2.0	8.0	8.0	0.43
Linear, Drainage, Utilities, & Sub-Grade	Pumps	Diesel	Average	2.0	8.0	11	0.74
Linear, Drainage, Utilities, & Sub-Grade	Air Compressors	Diesel	Average	2.0	8.0	37	0.48
Linear, Drainage, Utilities, & Sub-Grade	Generator Sets	Diesel	Average	2.0	8.0	14	0.74
Linear, Paving	Rollers	Diesel	Average	4.0	8.0	36	0.38
Linear, Paving	Paving Equipment	Diesel	Average	2.0	8.0	89	0.36
Linear, Paving	Pavers	Diesel	Average	2.0	8.0	81	0.42
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Linear, Paving	Signal Boards	Electric	Average	3.0	8.0	6.0	0.82

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	Worker	20	19	LDA,LDT1,LDT2

Linear, Grubbing & Land Clearing	Vendor	0.00	10	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	2.8	20	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	Worker	90	19	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	2.0	10	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20	HHDT
Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Worker	65	19	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	67	20	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	Worker	38	19	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10	HHDT,MHDT
Linear, Paving	Hauling	0.00	20	HHDT
Linear, Paving	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Grubbing & Land Clearing	Worker	20	19	LDA,LDT1,LDT2
Linear, Grubbing & Land Clearing	Vendor	0.00	10	HHDT,MHDT
Linear, Grubbing & Land Clearing	Hauling	2.8	20	HHDT
Linear, Grubbing & Land Clearing	Onsite truck	—	—	HHDT
Linear, Grading & Excavation	Worker	90	19	LDA,LDT1,LDT2
Linear, Grading & Excavation	Vendor	2.0	10	HHDT,MHDT
Linear, Grading & Excavation	Hauling	0.00	20	HHDT

Linear, Grading & Excavation	Onsite truck	—	—	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Worker	65	19	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	0.00	10	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	67	20	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	—	—	HHDT
Linear, Paving	Worker	38	19	LDA,LDT1,LDT2
Linear, Paving	Vendor	0.00	10	HHDT,MHDT
Linear, Paving	Hauling	0.00	20	HHDT
Linear, Paving	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

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Linear, Grubbing & Land Clearing	—	—	16	500	0.00
Linear, Grading & Excavation	—	—	11	0.00	0.00
Linear, Drainage, Utilities, & Sub-Grade	105,000	—	16	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	352	532	0.03	< 0.005
2027	88	532	0.03	< 0.005

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

5.18.1.2. Mitigated

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

5.18.1.2. Mitigated

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)

5.18.2.2. Mitigated

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	25	annual days of extreme heat
Extreme Precipitation	0.20	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	3.1	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	1	0	0	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	0	0	0	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	1	1	1	2
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	1	1	1	2
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
AQ-PM	4.1
AQ-DPM	14
Drinking Water	26
Lead Risk Housing	40
Pesticides	14
Toxic Releases	4.0
Traffic	60
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	27
Impaired Water Bodies	0.00
Solid Waste	55
Sensitive Population	—
Asthma	51

Cardio-vascular	59
Low Birth Weights	14
Socioeconomic Factor Indicators	—
Education	74
Housing	60
Linguistic	49
Poverty	95
Unemployment	55

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	25.81804183
Employed	23.88040549
Median HI	16.89978186
Education	—
Bachelor's or higher	26.08751444
High school enrollment	2.489413576
Preschool enrollment	1.873476197
Transportation	—
Auto Access	42.71782369
Active commuting	10.08597459
Social	—
2-parent households	35.96817657
Voting	48.09444373
Neighborhood	—
Alcohol availability	80.90594123

Park access	8.340818683
Retail density	1.745155909
Supermarket access	5.864237136
Tree canopy	1.308866932
Housing	—
Homeownership	80.90594123
Housing habitability	65.12254587
Low-inc homeowner severe housing cost burden	43.62889773
Low-inc renter severe housing cost burden	64.41678429
Uncrowded housing	45.28422944
Health Outcomes	—
Insured adults	2.55357372
Arthritis	0.0
Asthma ER Admissions	54.0
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	24.6
Cognitively Disabled	43.0
Physically Disabled	5.4
Heart Attack ER Admissions	51.2
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	91.1

Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	67.0
Elderly	5.7
English Speaking	42.6
Foreign-born	50.4
Outdoor Workers	10.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	84.9
Traffic Density	32.5
Traffic Access	23.0
Other Indices	—
Hardship	74.8
Other Decision Support	—
2016 Voting	47.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	33
Healthy Places Index Score for Project Location (b)	8.0
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

8.1. Justifications

Screen	Justification
Construction: Construction Phases	Based on the construction questionnaire
Construction: Dust From Material Movement	Based on the questionnaire
Construction: Demolition	Based on the construction questionnaire

CVAG Indian Canyon Drive Project

Energy Calculations

Construtions On-Road (Mobile) Fuel Consumption

WORKER TRIPS						
Phase	**Phase Length (# days)**	**# Worker Trips**	**Worker Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)**	**Total Fuel Consumption (gallon)**
Linear, Grubbing & Land Clearing	44	40	18.5	32,560	**24.90284233**	1,307.48
Linear, Grading & Excavation	88	180	18.5	293,040		11,767.33
Linear, Drainage, Utilities & Sub-Grade	195	130	18.5	468,975		18,832.19
Linear, Paving	44	76	18.5	61,864		2,484.21
					Worker Trips Total	*34,391.21*
VENDOR TRIPS						
Phase	**Phase Length (# days)**	**# Vendor Trips**	**Vendor Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)**	**Total Fuel Consumption (gallon)**
Linear, Grubbing & Land Clearing	44	0	10.2	0	**8.343886151**	0.00
Linear, Grading & Excavation	88	4	10.2	3,590		430.30
Linear, Drainage, Utilities & Sub-Grade	195	0	10.2	0		0.00
Linear, Paving	44	0	10.2	0		0.00
					Vendor Trips Total	*430.30*
HAULING TRIPS						
Phase	**Phase Length (# days)**	**# Hauling Trips**	**Hauling Trip Length**	**Total VMT**	**Fuel Consumption Factor (Miles/Gallon/Day)[1]**	**Total Fuel Consumption (gallon)**
Linear, Grubbing & Land Clearing	44	6	4.5	1,188	**8.343886151**	142.38
Linear, Grading & Excavation	88	0	4.5	0		0.00
Linear, Drainage, Utilities & Sub-Grade	195	134	4.5	117,585		14,092.35
Linear, Paving	44	0	4.5	0		0.00
					Hauling Trips Total	*14,234.73*
					Total Construction On-Road (Mobile) Fuel Consumption (gallon)	**49,056.25**
					Countywide On-Road (Mobile) Fuel Consumption (2026) (gallon)[1]	***862,393,259***
					Percentage Increase Countywide	***0.0057%***

Notes:

1. Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB's EMFAC2021.

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

CVAG Indian Canyon Drive Project

Energy Calculations
Construction Off-Road (Equipment)
Fuel Consumption

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Fuel Consumption Rate (gallon/hour)[1]	Duration (total hours/day)	# days	Total Fuel Consumption (gallon)
Linear, Grubbing & Land Clearing	Crawler Tractors	2.00	8.00	87.00	0.43	1.50	16	44	1,053.47
Linear, Grubbing & Land Clearing	Excavators	3.00	8.00	36.00	0.38	0.55	24	44	577.84
Linear, Grading & Excavation	Excavators	7.00	8.00	36.00	0.38	0.55	56	88	2,696.60
Linear, Grading & Excavation	Crawler Tractors	3.00	8.00	87.00	0.38	1.32	24	88	2,792.91
Linear, Grading & Excavation	Graders	3.00	8.00	148.00	0.43	2.55	24	88	5,376.31
Linear, Grading & Excavation	Rollers	5.00	8.00	36.00	0.41	0.59	40	88	2,078.21
Linear, Grading & Excavation	Tractors/Loaders/Backhoes	4.00	8.00	84.00	0.38	1.28	32	88	3,595.47
Linear, Grading & Excavation	Rubber Tired Loaders	4.00	8.00	150.00	0.37	2.22	32	88	6,251.52
Linear, Grading & Excavation	Scrapers	6.00	8.00	423.00	0.36	6.09	48	88	25,729.23
Linear, Grading & Excavation	Cranes	1.00	8.00	367.00	0.48	7.05	8	88	4,960.67
Linear, Drainage, Utilities & Sub-Grade	Scrapers	6.00	8.00	423.00	0.48	8.12	48	195	76,018.18
Linear, Drainage, Utilities & Sub-Grade	Rough Terrain Forklifts	2.00	8.00	96.00	0.40	1.54	16	195	4,792.32
Linear, Drainage, Utilities & Sub-Grade	Tractors/Loaders/Backhoes	3.00	8.00	84.00	0.82	2.76	24	195	12,894.34
Linear, Drainage, Utilities & Sub-Grade	Graders	4.00	8.00	148.00	0.37	2.19	32	195	13,668.10
Linear, Drainage, Utilities & Sub-Grade	Plate Compactors	3.00	8.00	8.00	0.41	0.13	24	195	614.02
Linear, Drainage, Utilities & Sub-Grade	Pumps	2.00	8.00	11.00	0.43	0.19	16	195	590.30
Linear, Drainage, Utilities & Sub-Grade	Air Compressors	2.00	8.00	37.00	0.74	1.10	16	195	3,417.02
Linear, Drainage, Utilities & Sub-Grade	Generator Sets	2.00	8.00	14.00	0.48	0.27	16	195	838.66
Linear, Paving	Rollers	4.00	8.00	36.00	0.74	1.07	32	44	1,500.36
Linear, Paving	Paving Equipment	2.00	8.00	89.00	0.36	1.28	16	44	902.25
Linear, Paving	Pavers	2.00	8.00	81.00	0.42	1.36	16	44	958.00
Linear, Paving	Tractors/Loaders/Backhoes	4.00	8.00	84.00	0.37	1.24	32	44	1,750.43
								Total Construction Off-Road Fuel Consumption (gallon)	***173,056.19***
								Countywide Off-Road Fuel Consumption (2026) (gallon)[2]	***30,111,952.00***
								Percentage Increase Countywide	***0.5747%***

Notes:

1. Fuel Consumption Rate = Horsepower x Load Factor x Fuel Consumption Factor

   Where:

   Fuel Consumption Factor for a diesel engine is 0.04 gallons per horsepower per hour (gal/hp/hr) and a gasoline engine is 0.06 gal/hp/hr.

2. Countywide operational fuel consumption, off-road construction equipment diesel fuel consumption, and on-road fuel consumption are from CARB's OFFROAD2021 (v1.0.5) Emissions Inventory.

Source: Refer to CalEEMod outputs for assumptions used in this analysis.

Appendix B1

Natural Environment Study

Western Coachella Valley Flooding and Blowsand Project–Phase One, Indian Canyon Drive NES



Natural Environment Study

Including focused studies for special-status species and delineation of federal and state jurisdictional aquatic resources.

1.6 miles of Indian Canyon Drive south of Interstate 10 from Palm Springs Station Road to Sunrise Parkway in the northern portion of the City of Palm Springs, Riverside County

District 8-Riverside County

Federal Project No.: LTCAPL 6164 (030)

April 2026

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

Including focused studies for special-status species and delineation of federal and state jurisdictional aquatic resources.

1.6 miles of Indian Canyon Drive south of Interstate 10 from Palm Springs Station Road to Sunrise Parkway in the northern portion of the City of Palm Springs, Riverside County

District 8-Riverside County

Federal Project No.: LTCAPL 6164 (030)

April 2026

STATE OF CALIFORNIA

Department of Transportation

Coachella Valley Association of Governments

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For individuals with sensory disabilities, this document can be provided in alternate formats. To obtain a copy in an alternate format, please contact Coachella Valley Association of Governments (CVAG), Director of Transportation, 74-199 El Paseo, Suite 100, Palm Desert, CA 92660; (760) 346-1127; cvag@cvag.org..

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Acronyms List

BLM	Bureau of Land Management
BSA	Biological Study Area
Caltrans	California Department of Transportation
CAL-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CWA	Clean Water Act
FESA	Federal Endangered Species Act (referred to as ESA in USFWS/NOAA Fisheries literature)
FPN	Federal Project Number
I-	Interstate
IPaC	Information for Planning and Consultation
JPR	Joint Project Review
LOD	Limits of Disturbance
MBTA	Migratory Bird Treaty Act
MCV	*California Manual of Vegetation*
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NOAA Fisheries	NOAA's National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
USACE	US Army Corps of Engineers
USC	United States Code
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
WDR	Waste Discharge Requirements

Summary

The proposed Western Coachella Valley Flood and Blowsand Road Improvement Project–Phase One, Indian Canyon Drive, in the City of Palm Springs, aims to address safety and traffic concerns due to frequent flooding and blowsand events that impact Indian Canyon Drive. By constructing road improvements and a new bridge over the Whitewater River, the project will alleviate road closures, reduce traffic congestion, and improve connectivity as per the City's 2040 General Plan. The project aligns with the Federal Emergency Management Agency's identification of the area as a flood zone and includes enhancements to major access corridors for better resiliency.

The proposed project is within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), and portions of the project are within the CVMSHCP Whitewater Floodplain Conservation Area. The project would impact the following habitat types: 1.46 acres of ephemeral desert sand fields, 8.09 acres of disturbed cheesebush-sweetbush scrub (*Ambrosia salsola-Bebbia juncea* shrubland alliance), 0.01 acres of ornamental landscaping, 6.55 acres of disturbed land, and 18.39 acres of existing developed areas.

No special-status plant or animal species were detected within the biological study area (BSA); however, Coachella fringe-toed lizard is presumed present. Approximately 9.55 acres of Coachella Valley milk-vetch (federally endangered) and Coachella Valley fringe-toed lizard (federally threatened) habitat would be impacted by the proposed project. These species are covered species under the CVMSHCP.

Permits are required for impacts to 4.05 acres of non-wetland waters of the US, 4.05 acres of non-wetland waters of the state, and 5.17 acres of jurisdictional vegetated and non-vegetated streambed. It is assumed that a Clean Water Act (CWA) Section 404 Individual Permit will be required from the US Army Corps of Engineers (USACE) for impacts to non-wetland waters of the US, a CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board for impacts to non-wetland waters of the state, and a California Fish and Game Code Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife for impacts to vegetated and non-vegetated streambed.

Six non-native plant species classified as invasive by the California Invasive Plant Council (CAL-IPC 2006) were observed within the BSA: stinknet (*Oncosiphon pilulifer*), Tournefort's mustard (*Brassica tournefortii*), shortpod mustard (*Hirschfeldia incana*), prickly Russian thistle (*Salsola tragus*), redstem stork's bill (*Erodium cicutarium*), and common Mediterranean grass (*Schismus barbatus*).

The project's beneficial impacts include restoration of sand-affiliated ecological processes under the proposed bridge, allowing for a more natural blowsand ecosystem with fewer impacts to Indian Canyon Drive. Additionally, the proposed bridge will restore natural wildlife movement opportunities under the bridge rather than across Indian Canyon Drive.

Compensatory mitigation for impacts on sand-affiliated natural communities and associated species (i.e., Coachella Valley milk-vetch and Coachella Valley fringe-toed lizard) will be implemented through purchase of habitat in an established conservation bank. In addition, impacts on jurisdictional aquatic resources would be mitigated at a minimum 1:1 ratio through on-site restoration, off-site property acquisition, or purchase of mitigation bank credits. Table S-1 lists the biological resources that could be affected by the proposed project as well as associated avoidance, minimization, and mitigation measures.

TABLE S-1. SUMMARY OF BIOLOGICAL RESOURCES POTENTIALLY AFFECTED BY THE PROJECT AND ASSOCIATED AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

Biological Resource	Avoidance/Minimization Measure	Compensatory Mitigation
Sand-affiliated Natural Communities	**BIO-1** through **BIO-6**	**BIO-7** (Purchase and conserve habitat in an established conservation bank at 2:1 for direct impacts and 1:1 for indirect impacts)
Coachella Valley Milk-vetch	**BIO-1** through **BIO-6**, **BIO-8** through **BIO-10**	**BIO-7** (Purchase and conserve habitat in an established conservation bank at 2:1 for direct impacts and 1:1 for indirect impacts)
Coachella Valley Fringe-toed Lizard	**BIO-1** through **BIO-6** and **BIO-9** through **BIO-11**	**BIO-7** (Purchase and conserve habitat in an established conservation bank at 2:1 for direct impacts and 1:1 for indirect impacts)
Burrowing Owl	**BIO-1** through **BIO-6, BIO-9 and 10,** and **BIO-12**	N/A
Le Conte's Thrasher	**BIO-1** through **BIO-6** and **BIO-13**	N/A
Nesting Birds	**BIO-1** through **BIO-6** and **BIO-9** and **BIO-14**	N/A
Special-status Bats	**BIO-1** through **BIO-6** and **BIO-9** and **BIO-15**	N/A
Aquatic Resources	**BIO-1** through **BIO-6** and **BIO-9** and **BIO-10**	**BIO-16** (Compensatory mitigation for impacts on aquatic resources)

Chapter 1: Introduction

The Coachella Valley Association of Governments (CVAG), in cooperation with the California Department of Transportation (Caltrans), proposes the Western Coachella Valley Flood and Blowsand Road Improvement Project–Phase One–Indian Canyon Drive project, intended to elevate a portion of Indian Canyon Drive between Palm Springs Station Road and Sunrise Parkway in the City of Palm Springs, Riverside County, California. The proposed project occurs within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and is within the CVMSHCP Whitewater Floodplain Conservation Area. The project is intended to address safety, traffic flow, and reliability concerns related to frequent floodwater and blowsand events.

1.1 Project History

Project Purpose and Need

The purpose of the project is to address safety concerns related to floodwater and blowsand events that frequently lead to prolonged road closures. Indian Canyon Drive crosses the Whitewater River and Chino Creek, which have both been identified by the Federal Emergency Management Agency as 100-year flood zones. Additionally, the proposed project is within a designated blowsand area in the City's General Plan. Frequent and prolonged road closures occur along the project alignment. These events strain the region's transportation system, causing increased traffic congestion, increased travel times and emissions, and decreased reliability, which impacts the public and local economy.

The proposed project is designed to mitigate the adverse impacts of road closures due to flooding and blowsand events by constructing road improvements and a new bridge at the existing Whitewater River low water crossing.

The project is consistent with the City's 2040 General Plan's Circulation Element, which identifies this project in Policy CR2.8: "Improve connectivity and resiliency in and out of the City by constructing all-weather bridge crossings and other infrastructure enhancements along major access corridors like Vista Chino, Gene Autry Trail, Indian Canyon Drive, and Palm Canyon Drive" as established under Goal CR2: "Provide a circulation network that maintains a safe and efficient system for all travel modes and users of all ages and mobilities" (City of Palm Springs 2025).

1.2 Project Description

The proposed project is south of Interstate 10 (I-10) and includes a 1.6-mile portion of Indian Canyon Drive from Palm Springs Station Road south to Sunrise Parkway in the City of Palm Springs, Riverside County (Appendix A, Figure 1, Regional Vicinity). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm

Springs US Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Appendix A, Figure 2, Site Vicinity). Surrounding land uses include commercial development and I-10 to the north; overhead power lines (along Indian Canyon Drive), Granite Solar Farm, and open space to the east; residential development to the south; and wind turbine facilities, Coachella Valley Water District's Groundwater Replenishment Facility, and open space to the west.

Indian Canyon Drive is a primary north-south transportation corridor and provides local and regional access via an interchange with I-10. It is identified as a National Highway System connector (City of Palm Springs 2025). Indian Canyon Drive crosses the Whitewater River and Chino Creek, an area that is susceptible to flash flooding during storm events and blowsand during high winds. The proposed project will construct road improvements, including a new multi-use trail along the west side of Indian Canyon Drive and east side of Palm Springs Station Road, and a bridge over a portion of the Whitewater River (Appendix B). The bridge is intended to mitigate the adverse impacts of road closures due to the frequent flood and blowsand events. The project limits of disturbance (LOD) are shown in Appendix A, Figure 3, Proposed Project and Biological Study Area.

The proposed bridge foundation will be drilled piles with an approximate depth of 70-100 feet (to be determined following the geotechnical investigation) and 8-9 feet in diameter. The bridge will be supported by 11 piers with 2 columns per pier, for a total of 22 drilled piles. All drilled soil will be hauled away.

Project development is expected to begin in March 2027, will occur over 24 months, and will include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Construction staging would occur along the project alignment and at the southeast corner of the intersection of Indian Canyon Drive and Garnet Avenue.

The northern portion of the project overlaps with areas currently under construction as part of Federal Project Number (FPN) BRLO 5282(017) and STPLN 5282(016). These projects are replacing the Union Pacific Railroad overcrossing; shifting Palm Springs Station Road 50 feet west; relocating the intersection of Palm Springs Station Road and Indian Canyon Drive 60 feet south; relocating overhead utilities on the east side of Indian Canyon Drive; relocating and improving the Granite Construction Company's driveway; constructing a fill slope between Indian Canyon Drive and Palm Springs Station Road; and adding grouted rock slope protection along Indian Canyon Drive south of the Palm Springs Station Road intersection (1,000 feet of grouted rock slope on the west side of Indian Canyon Drive and 600 feet on the east side).

Chapter 2 – Study Methods

2.1 Regulatory Requirements

Federal

National Environmental Policy Act (42 United States Code [USC] § 4321 et seq.)

The National Environmental Policy Act (NEPA) requires all federal agencies to consider environmental factors through a systematic interdisciplinary approach before committing to a course of action. The NEPA process is an overall framework for the environmental evaluation of federal actions.

Federal Endangered Species Act of 1973 (16 USC § 1531 et seq.)

The federal Endangered Species Act (FESA) provides for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the act requires federal agencies, in consultation with and with the assistance of the Secretary of the Interior or of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NOAA Fisheries) share responsibilities for administering the FESA.

Migratory Bird Treaty Act (16 USC §§ 703-712)

The Migratory Bird Treaty Act (MBTA) is a treaty with Canada, Mexico, and Japan that makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California Fish and Game Code (CFGC) Sections 3503 and 3503.5 (protection of birds' nests) and 3513 (taking Migratory Bird Treaty Act birds) also prohibit the destruction of any nest, egg, or nestling.

Bald and Golden Eagle Protection Act (16 USC §§ 668-668(d); 50 CFR Part 22)

The Bald and Golden Eagle Protection Act, enacted in 1940 and amended several times since, aims to protect bald and golden eagles by prohibiting the taking of these birds, including their parts, nests, or eggs, without a permit issued by the Secretary of the Interior. The term "taking" encompasses actions such as pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing the eagles. The act is administered by the USFWS, which issues permits for activities that might affect these protected birds.

Fish and Wildlife Coordination Act of 1934, as Amended (16 USC §§ 661-666)

This act applies to any federal project where the waters of any stream or other body of water are impounded, diverted, deepened, or otherwise modified. Project proponents must consult with the USFWS and California Department of Fish and

Wildlife (CDFW). Reports and recommendations prepared by these agencies document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to wildlife resources. The term "wildlife" includes both animals and plants. Provisions of the act are implemented through the NEPA process and Section 404 permit process.

Clean Water Act (33 USC § 1251 et seq.)

The Clean Water Act (CWA) provides guidance for restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Section 404 places the US Army Corps of Engineers (USACE) in charge of regulating the discharge of dredged or fill material into essentially all water bodies, including wetlands. Federal agencies are required to avoid impacting wetlands whenever there is a practicable alternative. Section 404 established a permit program, administered by the USACE, that regulates these discharges.

Section 401 mandates that an applicant for a federal license or permit allowing activities that result in discharges to waters of the U.S. must obtain state certification. This certification ensures that the discharge complies with other provisions of the CWA. In California, the State Water Resources Control Board (SWRCB) and Regional Water Quality Boards (RWQCB) administer the certification program. The guidelines stipulate that the discharge of dredged or fill material into the aquatic system is permitted only if no practicable alternative with less adverse impacts is available.

Executive Order 11990 – Protection of Wetlands

Executive Order 11990 directs federal agencies to avoid impacting wetlands when there is a practicable alternative and mandates a Wetlands Only Practicable Alternative Finding if impacts are unavoidable. DOT Order 5660.1A and the Federal Highway Administration's technical guidance ensure compliance, requiring early public involvement in projects affecting wetlands.

Executive Order 13112 – Invasive Species

In 1999, President Clinton signed Executive Order 13112, requiring federal agencies to prevent the spread of invasive species. Defined as non-native species causing harm to the economy, environment, or human health, invasive species must be considered under NEPA analysis, using the Invasive Species Council of California's list. Agencies are mandated to take measures to minimize the risk of harm before authorizing or funding actions that may introduce invasive species.

State

California Environmental Quality Act of 1970

The California Environmental Quality Act (CEQA), as amended, requires public agencies to regulate activities which may affect the quality of the environment so that major consideration is given to preventing damage to the environment. The Governor’s Office of Planning and Research publishes “The Guidelines for the Implementation of the California Environmental Quality Act,” which are binding regulations for public agencies’ implementation of the act.

Porter-Cologne Water Quality Control Act (California Water Code § 13000 et seq.)

The Porter-Cologne Act (Water Code, Division 7) is the basic water quality control law for California. The act is implemented by the SWRCB and the nine RWQCBs. The RWQCBs implement the permit provisions (Section 402) and certain planning provisions (sections 205, 208, and 303) of the federal CWA. This means that the state issues one discharge permit for purposes of both state and federal law. Under state law, the permit is called a waste discharge requirement (WDR). Under federal law, the permit is called a National Pollutant Discharge Elimination System (NPDES) permit. This law requires that anyone who is discharging waste or proposing to discharge waste which could affect the quality of the state's water must file a "report of waste discharge" with that RWQCB. This regulatory law is becoming more prominent on projects involving impacts to isolated waters of the state (non 404/401 waters), often requiring WDR permits for impacts to waters of the state.

California Fish and Game Code Sections 1600 et seq. (Streambed Alteration)

These sections of the CFGC require notification to the CDFW prior to any project that would divert, obstruct, or change the natural flow or bed, channel or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, the CDFW is required to propose reasonable project changes to protect the resource. These modifications are formalized in a "streambed alteration agreement," which becomes part of the plans, specifications, and bid documents for the project.

California Endangered Species Act (CFGC §§ 2050-2085)

The California Endangered Species Act (CESA) states that all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a substantial decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved. The CESA mandates that state agencies should not approve projects that would jeopardize the continued existence of these threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. The CDFW is responsible for administering CESA.

California Fully Protected Species (CFGC §§ 3511, 4700, 5050, 5515)

"Fully protected" species are designated by the CDFW as those species that cannot be taken or possessed at any time, except for specific scientific research or recovery efforts. CFGC Section 3511 covers birds (e.g., golden eagle), Section 4700 includes mammals (e.g., bighorn sheep), Section 5050 addresses reptiles and amphibians, and Section 5515 pertains to fish. These protections aim to prevent extinction and ensure the conservation of these vulnerable species.

California Native Plant Protection Act (CFGC §§ 1900-1913)

California's Native Plant Protection Act requires all state agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the act prohibit the taking of listed plants from the wild and require notifying the CDFW at least 10 days in advance of any change in land use. This allows the CDFW to salvage listed plant species that would otherwise be destroyed. Caltrans is required to conduct botanical inventories and consult with the CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Desert Native Plants Act (Food and Agricultural Code § 80001 et seq.)

The California Desert Native Plants Act was passed in 1981 to protect non-listed California desert native plants from unlawful harvesting on both public and privately owned lands. Harvest, transport, sale, or possession of specific native desert plants is prohibited unless a person has a valid permit, or wood receipt, and the required tags and seals.

Local

Coachella Valley Multiple Species Habitat Conservation Plan

The CVMSHCP is a collaborative effort involving local governments, state and federal agencies, and other stakeholders. It aims to balance environmental protection with economic development by conserving natural resources and habitats for 27 species across 240,000 acres. It simplifies compliance with state and federal endangered species laws, ensuring the survival of these species while supporting infrastructure development, recreation, tourism, and job creation.

The proposed project is a Covered Activity under the CVMSHCP (Table 7-3, CVAG Regional Road Projects, and Table 7-5, Covered Activities-City of Palm Springs' Facilities in Conservation Areas of the CVMSHCP). The entire project occurs within the CVMSHCP Whitewater Floodplain Conservation Area (Appendix A, Figure 3).

The project would be subject to compliance with the conservation objectives in Section 4.3.6 of the CVMSHCP; the avoidance, minimization, and mitigation measures described in Section 4.4 of the CVMSHCP; and the Land Use Adjacency Guidelines in Section 4.5 of the CVMSHCP. In addition, the applicant will comply with Section 6.6.1, Obligations of the Local Permittees, of the CVMSHCP, specifically the terms and conditions listed for projects within conservation areas.

2.2 Studies Required

2.2.1 Biological Study Area

The Biological Study Area (BSA) is located along Indian Canyon Drive between Palm Springs Station Road and Sunrise Parkway in the City of Palm Springs. The BSA also includes areas around the Amtrak station and a construction

staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue. As depicted in Appendix A, Figure 3, the following buffers were incorporated and define the BSA: 500-foot buffer for burrowing owl surveys, and a 100-foot buffer for special-status plant surveys and the aquatic resources delineation.

2.2.2 Literature and Database Review

The region defined in this Natural Environment Study (NES) includes the USGS 7.5-minute Desert Hot Springs and Palm Springs quadrangle maps and seven surrounding quadrangles (San Jacinto Peak, White Water, Catclaw Flat, Morongo Valley, Yucca Valley South, Seven Palms Valley, and Cathedral City). Special-status species are defined as those plant and animal species that are candidate, proposed, or state or federally listed as endangered or threatened species; species that have been designated as fully protected or as species of special concern in California by the CDFW; species that have been given a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, or 4; and species that are given take coverage under the CVMSHCP. Species that do not meet any of these requirements are not analyzed in this report.

The proposed project required several studies, including a comprehensive literature review and database search and both general and focused field surveys. The general field survey included a habitat assessment to determine suitability of the BSA to support special-status plant and wildlife species. The literature search and general habitat assessment determined the need to conduct focused burrowing owl surveys, focused special-status plant surveys, and an aquatic resources delineation. These survey efforts are summarized herein and available in Appendix C, Appendix D, and Appendix E, respectively (Michael Baker International 2025a, 2025b, 2025c). Representative photographs from the various field studies are included in Appendix F.

A thorough literature review and records search was conducted to identify the special-status plants, wildlife, and natural communities that have the potential to occur within the BSA and the region. Resources reviewed included the California Natural Diversity Database (CNDDB) RareFind 5 (CNDDB 2025a) and the California Native Plant Society’s (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2025). In addition, the USFWS’s Information for Planning and Consultation Project Planning Tool (IPaC; USFWS 2025) was consulted for an official species list and for information regarding the BSA’s relation to designated critical habitat. The CNDDB and IPaC species lists are included in Appendix G. In addition, the CVMSHCP Conservation Area maps and list of covered species were reviewed (CVCC 2025).

The current conservation status of species was verified through lists and resources provided by the CNDDB, specifically the Special Animals List (CNDDB 2025b) and Special Vascular Plants, Bryophytes, and Lichens List (CNDDB 2025c). Standard field guides and online sources were reviewed for specific

habitat requirements, range maps, and known locations of special-status species. All sources are included below in Section 6, References.

The proposed project is located outside of NOAA Fisheries jurisdiction; therefore, a species list is not required.

2.2.3 Field Reviews

Field reviews conducted include a general biological resources assessment, focused burrowing owl surveys, focused special-status plant species surveys, and an aquatic resources delineation. The survey methods used for each field survey follow in Section 2.2.4 and are summarized in Section 2.3.

2.2.4 Survey Methods

General Biological Resources Assessment

Biologists systematically surveyed the BSA on April 21, 2023, and April 14 and April 30, 2025, to document baseline biological conditions and evaluate the potential for special-status species, including those covered under the CVMSHCP. Qualified biologists recorded species locations and mapped vegetation communities and land covers per CVMSHCP descriptions and California Manual of Vegetation (MCV; Sawyer et al. 2009). Data collected provided a comprehensive understanding of biological resources and habitats, indicating the need for focused biological surveys.

Burrowing Owl Focused Surveys

A habitat assessment and focused burrowing owl survey was conducted in 2023 following the guidelines in the *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game [CDFG] 2012). Surveys were performed on April 21, May 19, June 13, and July 7, 2023, between morning civil twilight and 1000 hours to provide the highest detection probability.

During the surveys, biologists walked meandering transects (spaced approximately 20 to 60 feet apart) across the survey area in search of natural and modified habitats for burrowing owl nesting and foraging. Locations with suitable habitat, burrows, or species detections in the survey area were recorded with a GPS and on field maps. Some areas at the far northern and far southern ends of the survey area on both sides of Indian Canyon Drive were fenced and could only be surveyed from the exterior with binoculars.

Methods to detect the presence of burrowing owl included direct observation, aural detection, and signs of presence including pellets, whitewash, feathers, or prey remains. All suitable burrows/nest sites were thoroughly examined for signs of presence and all burrows, if encountered, were examined for shape, scat, pellets, feathers, tracks, and prey remains. Binoculars were used to scan areas that were inaccessible due to lack of right-of-entry to observe and identify distant birds; identify any suitable, occupied, and remnant burrows consisting of natural and non-natural substrates; and identify any activity around potential suitable habitat for burrowing owl. Detailed survey methodology can be found in the

Burrowing Owl Survey Report prepared for the proposed project (Michael Baker International 2025a; Appendix C).

Special-Status Plant Species Surveys

Focused surveys for special-status plant species were conducted between Palm Springs Station Road and Sunrise Parkway on April 21 and May 19, 2023, and between Garnet Avenue and Palm Springs Station Road on April 30, May 23, and June 12, 2025. The surveys were conducted to document the presence and location(s) of individual special-status plants or populations (if present). The special-status plant surveys were conducted consistent with guidelines provided by CNPS (2001), USFWS (2000), and CDFW (2018). The study area was assessed systematically on foot by walking transects that varied between approximately 10 and 50 feet apart, depending on plant density and visibility, to allow for 100 percent coverage necessary to inventory plant species. A site visit to a known reference population of Coachella Valley milk-vetch located within approximately 3.6 miles of the study area was conducted on April 21, 2023. The surveys were floristic in nature, meaning that species encountered were identified to the taxonomic level necessary to determine rarity and listing status. Detailed survey methodology can be found in the Focused Special-Status Plant Survey Report prepared for the proposed project (Michael Baker International 2025b; Appendix D).

Aquatic Resources Delineation

A jurisdictional delineation was conducted between Palm Springs Station Road and Sunrise Parkway on May 24, 2023, by qualified wetland delineators and regulatory specialists in areas that were identified during the literature review through aerial imagery as being potentially jurisdictional within the proposed project footprint. On April 14, 2025, an assessment of the additional study area between Garnet Avenue and Palm Springs Station Road. Detailed survey methodology can be found in the Aquatic Resources Delineation Report prepared for the proposed project (Michael Baker International 2024c; Appendix E).

2.3 Personnel and Survey Dates

Table 1 lists the survey dates, survey type, and personnel, including their qualifications, for all field surveys conducted for the project.

TABLE 1. FIELD SURVEY DATES AND PERSONNEL

Date	Survey Type	Personnel[1]
April 14, 2023	General biological habitat assessment; burrowing owl habitat assessment and focused survey #1	Anna Jullie, John Parent, Marisa Flores, Tom Millington (survey canceled-road closure)
April 21, 2023	General biological habitat assessment; burrowing owl focused survey #1	Anna Jullie, Ryan Phaneuf, Tom Millington, Trina Ming

Date	Survey Type	Personnel[1]
May 19, 2023	Burrowing owl focused survey #2	Ryan Phaneuf, Trina Ming, Margaret Bornyasz, Samantha Martinez
June 9, 2023	Burrowing owl focused survey #3	Tom Millington (survey canceled-high winds)
June 13, 2023	Burrowing owl focused survey #3	Tom Millington, Samantha Martinez
July 7, 2023	Burrowing owl focused survey #4	Krista Perine, Marisa Flores, Samantha Martinez
April 21, 2023	Special-status plant survey #1	Trina Ming, Ryan Phaneuf
May 19, 2023	Special-status plant survey #2	Trina Ming, Ryan Phaneuf
May 24, 2023	Aquatic Resources Delineation	April Nakagawa, Geoffrey Chan, Ryan Henry
April 14, 2025	Burrowing owl habitat assessment, aquatic resources habitat assessment (additional study area)	John Parent
April 16, 2025	Special-status plant survey #1 (additional study area)	Trina Ming, Ryan Phaneuf (survey canceled-road closure)
April 30, 2025	Special-status plant survey #1, vegetation mapping (additional study area)	Trina Ming, Ryan Phaneuf
May 23, 2025	Special-status plant survey #2 (additional study area)	Trina Ming, Ryan Phaneuf
June 12, 2025	Special-status plant survey #3 (additional study area)	Trina Ming, Ryan Phaneuf

[1]Staff Qualifications

Anna Jullie, Biologist. M.S., 2022, Conservation, University of California, Irvine; B.S., 2020, Environmental Biology, Michigan State University. Five years of experience conducting biological surveys and preparing biological documents. Contribution: burrowing owl surveys.

April Nakagawa, Biologist/Regulatory Specialist. M.S., Environmental Studies, California State University, Fullerton; B.S., Anthropology, California State University, Fullerton. Eight years of experience conducting biological surveys, regulatory compliance, and writing biological documents. Contribution: aquatic resources delineation.

John Parent, Biologist/Regulatory Specialist. B.S., Biology, California State University, Fullerton. Thirteen years of experience conducting biological surveys, regulatory compliance, and writing biological documents. Contribution: general reconnaissance, focused burrowing owl habitat assessment.

Date	Survey Type	Personnel[1]
Geoffrey Chan, Biologist/Regulatory Specialist. B.S., 2014, Environmental Studies, University of Maryland, College Park Campus. Eight years of experience conducting biological surveys, regulatory compliance, and writing biological documents. Contribution: aquatic resources delineation. Krista Perine, Biologist/Environmental Planner. M.A., 2018, Education, University of Redlands. B.S., 2016, Environmental Science, Point Loma Nazarene University. Two years of experience conducting biological surveys, regulatory compliance, and writing biological documents. Contribution: burrowing owl surveys. Margaret Bornyasz, Senior Biologist. M.S., Soil and Water Science, University of California, Riverside. B.S., Biology, California State University, San Diego. Twenty-six years of experience conducting biological surveys, regulatory compliance, and writing environmental documents. Contribution: burrowing owl surveys. Marisa Flores, Senior Biologist. B.S., 2003, Ecology and Evolution, University of California, Davis. Twenty years of experience conducting biological surveys, regulatory compliance, and writing environmental documents. Contribution: burrowing owl surveys. Ryan Henry, Department Manager of Natural Resources. B.S., 1998, Applied Ecology, University of California, Irvine. Twenty-six years of experience conducting biological services, technical reviews, regulatory compliance, and writing biological documents. Contribution: aquatic resources delineation. Ryan Phaneuf, Restoration Ecologist/Biologist. B.S., Environmental Science, Biola University. Eight years of experience conducting biological surveys, ecosystem restoration planning and implementation, compliance monitoring, and GIS services. Contribution: Special-status plant species surveys, burrowing owl surveys, vegetation mapping, GIS. Samantha Martinez, Biologist. B.S., Biology, California State University, San Marcos. Two years of experience conducting biological surveys, regulatory compliance monitoring, and writing biological documents. Contribution: general reconnaissance, focused burrowing owl habitat assessment. Tom Millington, Senior Biologist. B.A., Environmental Studies, University of California, Santa Barbara. Eleven years of experience conducting biological surveys, regulatory compliance monitoring, and writing biological documents. Contribution: general reconnaissance, focused burrowing owl habitat assessment. Trina Ming, Restoration Ecologist/Biologist. M.S., Environmental Science, California State University, Fullerton; B.A., Environmental Sciences, University of California, Irvine. Seven years of experience conducting biological surveys, habitat restoration, and writing environmental documents. Contribution: Special-status plant species surveys, vegetation mapping, burrowing owl surveys.		

2.4 Agency Coordination and Professional Contacts

On September 25, 2023, a project kickoff meeting was conducted with the Bureau of Land Management (BLM) to provide an overview of the proposed project and review the anticipated schedule. The team also reviewed the completed BLM Standard Form 299, Application for Transportation, Utility Systems, Telecommunications, and Facilities on Federal Lands and Property. The BLM identified the next steps in the approval process: (1) adjudication of BLM acreage, (2) submission of a cost recovery request to CVAG, and (3) NEPA compliance. The BLM recommended identifying design features and mitigation measures to offset environmental impacts, such as selecting bridge culverts that

are least impactful. The NEPA document should include discussions of environmental justice and regional economic benefits. The BLM discussed the use of the Mineral and Land Records System database and BLM's project tracking system, and advised on engagement with the District Engineer.

A Joint Project Review (JPR) application was submitted by CVAG on November 10, 2023, for a previous project design. At that time, the Coachella Valley Conservation Commission (CVCC) requested additional studies to support the project. Since that initial submittal, the project has been redesigned and a new JPR application will be submitted for the current proposed project.

On April 22, 2025, during initial review of the 30% Geometric Approved Drawings, the CVCC emphasized the importance of ensuring wildlife connectivity and fluvial sand transport under the road. Detailed undercrossing designs and hydrology/sedimentation analyses were requested to be able to provide more substantive comments. Recommendations included minimizing armoring at channel inlets and outlets, utilizing fewer, wider box culverts, ensuring wildlife crossings with a minimum diameter of 36 inches and maintaining soft bottoms, and minimizing the slope of drainage ditches approaching the roadway. The CVCC noted that ground disturbances beyond 128-foot right-of-way will accrue against CVMSHCP permits and that CVCC-owned parcels require prior permission from the CDFW and USFWS for any ground disturbance (email communication from Peter Satin [CVCC] to Francis Matic [Michael Baker], April 22, 2025).

On April 24, 2025, CVAG and Michael Baker introduced the proposed project to the CVCC, USFWS, and CDFW (the latter two referred to herein as the Wildlife Agencies), initiating a pre-application review of the proposed project prior to submittal of the JPR application. During the meeting, Michael Baker project engineers described the proposed project and results to date for the technical studies as it pertains to potential effects on CVMSHCP species. The CVCC and the Wildlife Agencies identified the design considerations for sizing of the bridge that must be considered for wildlife movement and secure measures that would support preservation of aeolian sand and fluvial sand movement within the Whitewater Floodplain. In addition, the CVCC identified the need to ensure that operation and maintenance of the new road would not result in the current condition (i.e., frequent road closures and inherent safety risks). The CVCC identified Section 4.2.2.2.4 of the CVMSHCP as containing a description of the process for conservation of fluvial sand transport.

The CVCC and the Wildlife Agencies identified the need to evaluate the urban wildlands interface considerations, including identifying lighting spillover that may occur along the road or pedestrian walkway and construction noise impacts. The Wildlife Agencies also emphasized evaluating covered species conservation goals and objectives in CVMSHCP Chapter 9 to specifically address project benefits for the Palm Springs pocket mouse (*Perognathus longimembris bangsi*, SSC, CVMSHCP covered), and Coachella Valley fringe-toed lizard (*Uma inornata*, federal threatened, state endangered), aiming to mitigate current

fragmentation issues identified within the Whitewater Floodplain Conservation Area. A formal JPR application will be submitted for CVCC and the Wildlife Agency approval prior to the circulation of the draft CEQA document.

2.5 Limitations That May Influence Results

Standard USFWS, CDFW, CNPS, and USACE survey protocols were used for all biological field surveys. Limitations during 2023 burrowing owl surveys and 2025 special-status plant surveys included winds that exceeded protocol requirements and the closure of Indian Canyon Drive due to high winds and blowsands that posed a safety risk to field staff. These closures caused a few surveys to be postponed, but did not otherwise affect the survey results. All surveys were still conducted within appropriate time periods consistent with protocols. Additionally, one portion of the survey area was inaccessible due to existing fencing; however, this area constituted a small percentage of the study area and was easily visible from the other side of the fence using binoculars. These access limitations did not affect the results presented in this NES.

Chapter 3 – Results: Environmental Setting

3.1 Description of the Existing Physical and Biological Conditions

3.1.1 Physical Conditions

The BSA consists of the Indian Canyon Drive right-of-way from Palm Springs Station Road south to Sunrise Parkway, an area surrounding the Amtrak station, and a construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue. Indian Canyon Drive bisects the Whitewater River and Chino Creek. The BSA is generally flat and gently sloping to the east with an elevation ranging from approximately 620 feet at the southern boundary to 660 feet at the northern boundary.

The project site is within the Garnet Hill sub-watershed and Whitewater River watershed, which are part of the larger Salton Sea watershed (Michael Baker International 2025c). The Whitewater River and Chino Creek are tributaries to the Salton Sea, a closed desert basin that terminates approximately 18 miles southeast.

Three soil map units occur within the BSA (Appendix A, Figure 4, USDA Soils Map): Carsitas gravelly sand, 0 to 9 percent slopes (CdC); Carsitas cobbly sand, 2 to 9 percent slopes, (ChC); Carsitas fine sand, 0 to 5 percent slopes (CkB); and gravel pits and dumps (GP), none of which are listed as hydric soils (Michael Baker International 2025c).

3.1.2 Biological Conditions

3.1.2.1 Vegetation Communities and Land Cover Types

A total of 43 plant species, 33 native (77 percent) and 10 non-native (23 percent), within seven vegetation communities and land cover types were identified in the BSA. Vegetation communities and land cover types are listed in Table 2, shown in Appendix A, Figure 5, and described below. A complete list of plant species observed within the BSA is included in Appendix D.

TABLE 2. Vegetation Communities and Land Cover Types

Vegetation Communities and Land Covers	BSA (Acres)	LOD (Acres)
Natural Vegetation Communities		
Disturbed Cheesebush-Sweetbush Scrub (*Ambrosia salsola – Bebbia juncea shrubland alliance)*	168.45	8.09
Ephemeral Desert Sand Fields	47.83	1.46
Tamarisk Thickets (*Tamarix spp. Shrubland Semi-Natural Alliance*)	1.81	0.00
Disturbed Creosote Bush Scrub (*Larrea tridentata- Shrubland Alliance*)	5.29	0.00
Subtotal Natural Vegetation Communities	*223.37*	*9.55*
Land Covers		
Developed	47.20	18.39

Vegetation Communities and Land Covers	BSA (Acres)	LOD (Acres)
Disturbed	21.71	6.55
Ornamental	0.75	0.01
Subtotal Land Covers	*69.66*	*24.95*
TOTAL	**293.03**	**34.50**

Disturbed Cheesebush - Sweetbush Scrub

Disturbed Cheesebush – Sweetbush Scrub (*Ambrosia salsola – Bebbia juncea shrubland alliance*) is located to the east and west of much of the BSA along Indian Canyon Drive. Cheesebush (*Ambrosia salsola*) dominates this vegetation community. In addition, common Mediterranean grass (*Schismus barbatus*), Fremont pincushion (*Chaenactis fremontii*), fanleaf crinklemat (*Tiquilia plicata*), and a mixed shrub cover of sweetbush (*Bebbia juncea*), Emory's indigo bush (*Psorothamnus emoryi*), and white bursage (*Ambrosia dumosa*) occur at lower densities. This vegetation community was defined utilizing the MCV.

Ephemeral Desert Sand Fields

Ephemeral Desert Sand Fields land cover type is located in the northern section of the BSA. Ephemeral Desert San Fields are primarily unvegetated due to surface flows, high winds, and anthropogenic activities (e.g., frequent disturbance from vehicle traffic and illegal dumping) that frequently shift the sands. Vegetation that is present primarily consists of sparsely growing or ruderal plant species including desert twinbugs (*Dicoria canescens*) and Saharan mustard (*Brassica tournefortii*), and infrequent patches of scalebroom (*Lepidospartum squamatum*). This vegetation community was defined utilizing the CVMSHCP as it did not meet any membership rules outlined in the MCV.

Tamarisk Thickets

Tamarisk Thickets (*Tamarix spp.* Shrubland Semi-Natural Alliance) occurs as a monotypic stand of tamarisk (*Tamarix aphylla*) along the southern right-of-way of the Union Pacific Railroad. This vegetation community was planted along linear infrastructure routes throughout the Coachella Valley as a windbreak but is considered a highly invasive community. This vegetation community was defined utilizing the MCV.

Disturbed Creosote Bush Scrub

The Disturbed Creosote Bush Scrub (*Larrea tridentata* shrubland scrub) is located north of the Union Pacific Railroad on both sides of Indian Canyon Drive. This area is sparsely vegetated primarily with creosote bush (*Larrea tridentata*), with cheesebush, Saharan mustard, and Mediterranean schismus present sporadically, and occurs in an area that has been disturbed by off-road vehicles. This vegetation community was defined utilizing the MCV.

Developed

Developed areas consist of areas that have been constructed upon or physically altered to a degree that natural soil substrates and native vegetation are no longer supported. Developed portions of the study area include Indian Canyon Drive, Palm Springs Station Road, and Sunrise Parkway, the Amtrak station, and commercial development.

Disturbed

Disturbed areas are associated with the construction work occurring along Palm Springs Station Road, dirt parking lots, and the quarry east of Indian Canyon Drive on the north end of the BSA.

Ornamental

Ornamental plantings, characterized by a diverse array of decorative flora, including California fan palm (*Washingtonia filifera*), blue palo verde (*Parkinsonia florida*), spoon yucca (*Dasylirion wheeleri*), and other native and non-native species, are present at the Amtrak station. The purpose of these plantings is to add aesthetic value and contribute to the overall landscaping design of the area.

3.1.2.2 Wildlife

A total of 11 wildlife species were recorded in the BSA during the habitat assessment. Birds were the most commonly detected wildlife group, and all of the wildlife species are common to the region and adapted to habitats disturbed by humans. No state or federally listed or otherwise special-status wildlife species were detected within the BSA during project surveys. A complete list of identified wildlife species observed within the BSA is provided in Appendix H.

3.1.2.3 Aquatic Resources

Two ephemeral drainages cross the BSA, Whitewater River and Chino Creek. The Whitewater River flows from San Gorgonio Mountain in the San Bernardino Mountains southeast through the BSA, then through the Coachella Valley cities before terminating at the Salton Sea. Chino Creek flows east from the San Jacinto Mountains through the BSA, until its confluence with the Whitewater River downstream of the BSA. An aquatic resources delineation was conducted on May 24, 2023 (Michael Baker International 2025c; Appendix E). The results of the aquatic resources delineation determined that the study area supports 5.03 acres of non-wetland waters of the U.S./waters of the State under the jurisdiction of the USACE/RWQCB, respectively, and 6.48 acres of unvegetated streambed under CDFW jurisdiction. Additional information is provided in Section 4.4.

TABLE 3. Summary of Aquatic Resources

Aquatic Resources			Location		Total Area USACE/ RWQCB (acres)	Total Area CDFW (acres)	Total Length (Linear Feet)
ID	Name	Cowardin Class [1]	Latitude	Longitude			
Non-Wetland Waters of the U.S./State							
WW-1	Whitewater River 1	R4SBC	33.891221	116.545781	1.52	2.97	101.07
WW-2	Whitewater River 2				2.68	2.68	203.79
WW-3	Whitewater River 3				0.05	0.05	49.19
				Whitewater River Subtotal	***4.25***	***5.70***	***354.05***
CC-1	Chino Creek 1	R4SBC	33.872998	116.545765	0.31	0.31	142.36
CC-2	Chino Creek 2				0.38	0.38	202.19
CC-3	Chino Creek 3				0.067	0.07	80.20
CC-4	Chino Creek 4				0.02	0.02	76.17
				Chino Creek Subtotal	***0.78***	***0.78***	***500.92***
				Total	**5.03**	**6.48**	**854.97**

Notes:
[1] Cowardin Classification Code (USFWS 1992): R4SBC = riparian, intermittent, seasonally flooded

3.1.2.4 Invasive Species

Six plant species non-native to California that are classified as invasive by the California Invasive Plant Council (CAL-IPC 2006) were observed within the BSA. These species are:

- *Oncosiphon pilulifer*—stinknet
- *Brassica tournefortii*—Tournefort's mustard
- *Hirschfeldia incana*—shortpod mustard
- *Salsola tragus*—prickly Russian thistle
- *Erodium cicutarium*—redstem stork's bill
- *Schismus barbatus*—common Mediterranean grass

Refer to Appendix D for a list of plants identified in the BSA, including non-native and invasive plants.

3.1.3 Habitat Connectivity

The BSA provides local wildlife movement opportunities due to the open and relatively unfragmented land between I-10 and Sunrise Parkway. The BSA does

not occur within a wildlife linkage or biological corridor as designated by the CVMSHCP. However, the road alignment occurs approximately 1.5 miles east of the Whitewater River Biological Corridor and 1.0 mile west of the Mission Creek Biological Corridor. As a result, the project vicinity provides important natural habitat between the two corridors.

Additionally, the presence of aquatic resources associated with the Whitewater River and water within the infiltration ponds to the west attract local and transient wildlife. The BSA could also present potential stopover areas along the Pacific Flyway.

Due to the open space areas of the Whitewater River and Chino Creek, a variety of wildlife are expected to utilize these areas as an east-west travel route. Although Indian Canyon Drive is a four-lane arterial road, it is situated at-grade with the surrounding land and not considered a complete barrier to wildlife movement. There are no obstacles such as fencing or a tall center median that prevent animals from crossing the road.

The BSA provides habitat connectivity for those species dependent upon the sandy and shrub habitats within the Whitewater River, such as the Coachella Valley fringe-toed lizard and Palm Springs pocket mouse.

3.1.4 Regional Species and Habitats and Natural Communities of Concern

Sensitive Natural Communities

Four sensitive natural communities were identified in the CNDDB as regionally occurring: southern riparian forest, Mojave riparian forest, mesquite bosque, and desert fan palm oasis woodland. In addition, the CVMSHCP mapped ephemeral desert sand fields and stabilized shielded desert sand fields within the BSA, which are considered sensitive because they contribute to important fluvial and sand transport ecological processes and provide habitat for special-status plant and wildlife species.

Special-Status Plant Species

A total of 86 special-status plant species were compiled from the CNDDB, CNPS, USFWS, and CVMSHCP during the literature review and analyzed for their potential to occur within the BSA. These species are presented in Appendix I along with a description of their habitat requirements, conservation status, and potential to occur in the BSA. Determinations of the likelihood of occurrence are based on the presence of suitable habitat, habitat quality and quantity, geographic range, elevation range, and species life history traits, including disturbance tolerance. Four of these species are federally listed species: Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*, federal endangered, CRPR 1B.2, CVMSHCP covered), triple-ribbed milk-vetch (*Astragalus tricarinatus*, federal endangered, CRPR 1B.2, CVMSHCP covered), slender-horned spineflower (*Dodecahema leptoceras*, federal endangered, state endangered, CRPR 1B.1), and Parish's daisy (*Erigeron parishii*, federal threatened, CRPR 1B.1).

Special-Status Animal Species

A total of 41 special-status animal species were compiled from the CNDDB, USFWS, and CVMSHCP during the literature review and analyzed for their potential to occur within the BSA. These species are presented in Appendix I along with a description of their habitat requirements, conservation status, and potential to occur in the BSA. Determinations of the likelihood of occurrence are based on the presence of suitable habitat, habitat quality and quantity, geographic range, elevation range, and species life history traits, including disturbance tolerance. Eight of these species are federally listed: California red-legged frog (*Rana draytonii*, federal threatened, CDFW Species of Special Concern [SSC]), southern mountain yellow-legged frog (*Rana muscosa*, federal endangered, state endangered), coastal California gnatcatcher (*Polioptila californica californica*, federal threatened, SSC), least Bell's vireo (*Vireo bellii pusillus*, federal endangered, state endangered, CVMSHCP covered), Casey's June beetle (*Dinacoma caseyi*, federal endangered), Peninsular bighorn sheep (*Ovis canadensis nelsoni* pop. 2, federal endangered, state threatened, CVMSHCP covered), desert tortoise (*Gopherus agassizii*, federal threatened, state threatened), and Coachella Valley fringe-toed lizard (*Uma inornata*, federal threatened, state endangered).

Non-federally listed species with potential to occur within the BSA include Crotch's bumble bee (*Bombus crotchii*, state candidate endangered), California glossy snake (*Arizona elegans occidentalis*, SSC), coast horned lizard (*Phrynosoma blainvillii*, SSC), flat-tailed horned lizard (*Phrynosoma mcallii*, SSC, CVMSHCP covered), golden eagle (*Aquila chrysaetos*, Bald and Golden Eagle Protection Act, state fully protected), burrowing owl (*Athene cunicularia*, state candidate endangered, CVMSHCP covered), LeConte's thrasher (*Toxostoma lecontei*, SSC, CVMSHCP covered), loggerhead shrike (*Lanius ludovicianus*, SSC), pallid bat (*Antrozous pallidus*, SSC), Townsend's big-eared bat (*Corynorhinus townsendii*, SSC), western yellow bat (*Lasiurus xanthinus*, SSC), pocketed free-tailed bat (*Nyctinomops femorosaccus*, SSC), Palm Springs pocket mouse (*Perognathus longimembris bangsi*, SSC, CVMSHCP covered), and Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*, SSC, CVMSHCP covered). These species are discussed in further detail in Section 4.3.2.

The remaining 19 non-federally listed animal species are not expected to occur within the BSA due to the lack of suitable habitat or location of the BSA outside of the species' range; therefore, these species are not addressed further (Appendix I).

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

4.1 Habitats and Natural Communities of Special Concern

Habitats are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring on site. Wetlands and waters of the U.S./waters of the state are also considered sensitive by both federal and state agencies but are discussed in Section 4.4 and in the Aquatic Resources Delineation Report (Michael Baker International 2025c; Appendix E).

4.1.1 Discussion of Sand-Affiliated Natural Communities

Survey Results

The BSA supports disturbed cheesebush-sweetbush scrub, disturbed creosote bush scrub, and ephemeral desert sand fields. Since the BSA does not support southern riparian forest, Mojave riparian forest, mesquite bosque, or desert fan palm oasis woodland, these sensitive natural communities recorded in the CNDDB from the region are not discussed further. Additionally, disturbed cheesebush-sweetbush scrub and disturbed creosote bush scrub are not sensitive natural communities (CDFW 2025) and are therefore not discussed further.

The CVMSHCP mapped ephemeral desert sand fields and stabilized shielded desert sand fields along Indian Canyon Drive within the Whitewater River floodplain (Appendix A, Figure 6, CVMSHCP Natural Communities). Ephemeral desert sand fields and stabilized shielded desert sand fields are considered sensitive because they contribute to important fluvial and sand transport ecological processes and provide habitat for special-status plant and wildlife species. The CVMSHCP has prescribed conservation measures within the Whitewater Floodplain Conservation Area to preserve these sand fields for special-status species.

Project Impacts

The proposed project would result in both permanent and temporary impacts to sensitive sand-affiliated natural communities. Permanent impacts include road improvements along Indian Canyon Drive and Palm Springs Station Road, development of a proposed multi-use trail along the west side of Indian Canyon Drive and the east side of Palm Springs Station Road, and placement of 22 bridge support columns (0.03 acres) within the Whitewater River. Temporary construction impacts would occur along the alignment of Indian Canyon Drive and Palm Springs Station Road. Of the total 34.50 acres of impact area in the LOD, 1.46 acres of ephemeral desert sand fields and stabilized shielded desert sand fields would be impacted.

Avoidance and Minimization Efforts

The construction area is limited to the Indian Canyon Drive and Palm Springs Station Road rights-of-way, minimizing the amount of sand-affiliated natural communities that would be impacted during construction. Conservation measures established for the Whitewater Floodplain Conservation Area (CVCC 2007) require that essential

ecological processes (i.e., aeolian and fluvial sand source and sand transport) be maintained within the conservation area and that the introduction of invasive species be avoided to prevent the subsequent or continued stabilization of sand. The purpose of the project is to elevate a portion of Indian Canyon Drive via a bridge over the Whitewater River, which will allow these essential ecological processes to occur naturally (i.e., flow under the bridge) and minimize the amount of future sand removal maintenance along Indian Canyon Drive.

Avoidance and minimization measures include the following:

Measure BIO-1: Environmentally Sensitive Areas. All areas outside of the project footprint will be delineated as Environmentally Sensitive Areas with protective fencing.

Measure BIO-2: Construction Equipment Inspection. All equipment will be inspected and cleaned prior to use in the project area to minimize exotic species introductions.

Measure BIO-3: Protection of Fluvial Sand Transport. To maintain fluvial sand transport capacity within flood prone areas, project activities shall be constructed and operated to ensure that flood flows and associated sediment continue to move through the Project site in their pre-project direction of flow without permanent impoundment, diversion, or disruption of sediment continuity. The bridge structure, roadway elevations, retaining walls, and scour protection features shall function collectively to convey 100-year storm flows through and across North Indian Canyon Drive while allowing temporary scour and deposition processes to occur and naturally re-equilibrate following storm events. The following pre-, during, and post-construction activities shall be implemented:

- Pre-construction. No permanent grade control, channel lining, or armoring shall be installed beneath the bridge structure, and no project component shall artificially retain fluvial sediment within the active channel or floodplain beyond the duration of a storm event. Construction sequencing and access plans shall avoid creating temporary berms, sediment traps, or transverse obstructions within the fluvial sand transport corridor. Equipment and material stockpiling, spoil storage, or long-term staging shall not occur in the active channel.

- During construction. Temporary materials, stockpiles, or fill placed within the floodplain or channel for construction purposes shall be removed prior to the onset of the rainy season. Excavated material, including drilled pile spoils, shall be exported offsite and shall not be placed within the active channel or floodplain.

- Post-construction. Temporarily disturbed areas within the fluvial sand transport corridor shall be restored to surrounding grades and surface conditions upon completion of construction to allow free passage of floodwaters and sediment. Project operations and maintenance activities shall be conducted in a manner that preserves fluvial sand transport capacity over the life of the facility. Following major storm events, the Project owner shall inspect the bridge crossing, roadway approaches, and adjacent floodplain areas to confirm that sediment movement is occurring in the expected direction of flow and that no project-related features are

causing persistent sediment impoundment. Temporary scour around piers and abutments, as well as localized deposition upstream or downstream of the bridge, shall be allowed to naturally refill and equilibrate unless such conditions pose a risk to structural integrity or public safety. If maintenance is required, corrective actions shall be limited to targeted redistribution of sediment to re-establish flow paths and sediment continuity consistent with the approved hydraulic design assumptions. Routine roadway sand removal conducted for public safety following wind or flood events shall be performed using methods that do not create berms, mounds, or obstructions within the fluvial sand transport corridor. Removed sediment shall be placed in locations within the right-of-way that allow continued downstream movement during subsequent storm events and shall not be permanently stockpiled within the floodplain. Maintenance activities shall avoid concentrating flows, increasing velocities beyond modeled conditions, or altering channel gradients in a manner that could induce long-term erosion or deposition.

Measure BIO-4: Protection of Conservation Area. The project will implement the following best management practices to ensure that the quantity and quality of any runoff during construction discharged to the adjacent Whitewater Floodplain Conservation Area is not altered in an adverse way when compared with existing conditions.

- Prior to the issuance of grading permits, the contractor shall prepare a Construction Stormwater Pollution Prevention Plan with project-specific erosion and sediment controls such as fiber rolls, straw waddles, and/or hay bales free of nonnative plant materials. Fiber rolls or erosion control mesh shall be made of loose-weave mesh that is not fused at the intersections of the weave, such as jute, or coconut (coir) fiber, or other products without welded weaves. Non-welded weaves reduce entanglement risks to wildlife by allowing animals to push through the weave, which expands when spread.

- BMPs shall be monitored daily and repaired if necessary to ensure maximum erosion and sediment control. All fiber rolls, straw waddles, and/or hay bales utilized within and adjacent to the project site shall be free of nonnative plant materials.

- BMPs shall be implemented immediately before work resumes and inspected daily for proper functioning.

- All construction equipment shall arrive onsite clean and free of soil, seeds, plant fragments, or organic debris to avoid the introduction of exotic plant species into the Conservation Area, consistent with adjacency management principles.

- Remove trash, loose materials, and construction debris daily to prevent wind or water transport into the Conservation Area.

Measure BIO-5: Best Management Practices. The contractor will implement best management practices to ensure any toxic or any other chemical that may adversely affect wildlife and plant species, their habitat, or water quality does not discharge to the adjacent Whitewater Floodplain Conservation Area. Best management practices to address toxic and other chemical releases shall include:

- Equipment maintenance and refueling will only occur in designated areas and on an impervious surface, such as a concrete pad or membrane. All fueling areas and mobile fueling trucks must have spill kits, absorbent pads, and containment devices readily available.

- Equipment will be inspected for leaks daily and corrective actions to address leaks shall be implemented immediately.

- Fuel storage tanks and parked or inoperative equipment will have secondary containment that is sufficiently sized to capture and/or contain all of the petroleum products within the associated tank/equipment.

- Store fuels, lubricants, hydraulic fluids, paints, curing compounds, and other hazardous materials in secondary containment at all times.

- Do not conduct fueling, washing, or maintenance of vehicles or equipment within 100 feet of the Conservation Area boundary unless performed on an impermeable, bermed surface that prevents spills from reaching native soils or runoff pathways.

Measure BIO-6: Fueling Restrictions. No vehicle fueling shall be conducted within the Whitewater Floodplain Conservation Area or within aquatic resource areas.

Compensatory Mitigation

Required mitigation measures outlined in the *Conservation Plan Addressing the Direct, Indirect, and Cumulative Effects of Interstate 10 Coachella Valley Interchange Projects* (Caltrans 2003) will be implemented related to impacts to wildlife habitat, including purchase and conservation (**BIO-7**).

Measure BIO-7: Purchase and Conserve. Purchase and conserve sand-affiliated habitat in an established Conservation Bank. Mitigation shall occur at a minimum 2:1 for direct impacts. All temporary impacts will be restored onsite within the existing Whitewater Floodplain Conservation Area.

4.2 Special-Status Plant Species

Special-status plant species addressed in this section are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special-status plants occurring on-site.

Four federally listed species—Coachella Valley milk-vetch, triple-ribbed milk-vetch, slender-horned spineflower, and Parish's daisy—were reported from the region. However, the BSA occurs outside of the elevation range of triple-ribbed milk-vetch and Parish's daisy, and the BSA does not provide suitable habitat for slender-horned spineflower. Therefore, these three species are not evaluated further. Detailed discussion of Coachella Valley milk-vetch is provided below.

The remaining non-federally listed species are not expected to occur within the BSA due to the lack of suitable habitat or location of the BSA outside of the species' elevation or geographic range; therefore, these species are not addressed further (Appendix I).

Discussion of Coachella Valley Milk-vetch

Survey Results

Suitable habitat for Coachella Valley milk-vetch occurs within the BSA and this species is well-known from the area. The most recent record in the CNDDB is dated 2014 and overlaps with the BSA from the railroad tracks to Sunrise Parkway. Environmental documents related to previous projects along Indian Canyon Drive also acknowledge the presence of Coachella Valley milk-vetch within the BSA. Specifically, presence is acknowledged southwest of the intersection of Indian Canyon Drive and Palm Springs Station Road (City of Palm Springs 2022); east and west of Palm Springs Station Road, north of its intersection with Indian Canyon Drive; and east of Indian Canyon Drive, about 0.25 miles south of its intersection with Palm Springs Station Road (BLM 2016). However, since the Coachella Valley milk-vetch was not found within its historical location and the area is currently under construction for the Indian Canyon Drive and Bridge Widening Project [FPN STPLN 5282(016) and BRLO 5282(017)], it is expected that the milk-vetch population may have already been impacted.

Additionally, USFWS-designated critical habitat overlaps Indian Canyon Drive in the northern and southern portions of the BSA (Appendix A, Figure 7, Coachella Valley Milk-vetch Critical Habitat).

Focused presence/absence surveys were conducted in 2023 and 2025. As detailed in the Special-Status Plant Species Survey Report (Appendix D; Michael Baker 2025b), no Coachella Valley milk-vetch plants were observed during the 2023 or 2025 surveys.

Project Impacts

The project would impact 9.55 acres of suitable Coachella Valley milk-vetch habitat. This species was not observed during 2023 and 2025 surveys and it is a covered species under the CVMSHCP.

The approved Indian Canyon Drive Road Widening project is under construction within the areas where this species was previously observed. Active construction areas cannot be surveyed and impacts were covered under previous environmental documents for those impacts (BLM 2016).

Project impacts would occur within designated Coachella Valley milk-vetch critical habitat in two locations west of Indian Canyon Drive (Appendix A, Figure 7). The northern location occurs from the intersection of Indian Canyon Drive and Palm Springs Station Road within Section 22 of the USGS Desert Hot Springs topographic quadrangle map south to the northern boundary of Section 27 of the USGS Desert Hot Springs topographic quadrangle map. The southern location occurs from the southern boundary of Section 27 of the USGS Desert Hot Springs USGS topographic quadrangle map south to Sunrise Parkway within Section 34 of the Palm Springs USGS topographic quadrangle map. Critical habitat within the CVMSHCP area is excluded under Section 4(b)(2) of FESA.

Avoidance and Minimization Efforts

Project impacts are limited to the Indian Canyon Drive existing right-of-way and occur within and adjacent to the CVMSHCP Whitewater Floodplain Conservation Area, which contains core habitat for Coachella Valley milk-vetch. Because a portion of the project is located within this conservation area, it is subject to the avoidance and minimization measures listed in Section 4.4 of the CVMSHCP.

Measures BIO-1 through **BIO-6** will be implemented in addition to the following avoidance and minimization:

Measure BIO-8: Coachella Valley Milk-vetch Seed Collection. Seed of the Coachella Valley milk-vetch will be collected from plants that are within the Area of Effect, if any, prior to construction. The collected seeds will be stored and later used for restoration purposes within the Whitewater Floodplain Conservation Area or CDFW-approved conservation area.

Measure BIO-9: Worker Environmental Awareness. An education program will be developed to advise construction staff of potential impacts to listed species.

Measure BIO-10: Biological Monitor. Biological monitoring will be provided to oversee compliance with protective measures for listed species.

Compensatory Mitigation

Mitigation is addressed through the conservation measures associated with the Whitewater Floodplain Conservation Area, which provides core habitat for Coachella Valley milk-vetch. The required mitigation measures are outlined in the Conservation Plan (Caltrans 2003) regarding threatened and endangered species. Required mitigation shall be met through the replacement of desert sand fields habitat, on a 2:1 basis in the case of direct impacts, and a 1:1 basis in the case of indirect impacts, in an established conservation bank under the auspices of the CVMSHCP (**BIO-7**).

4.3 Special-Status Animal Species

Animals are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring on site.

Of the eight federally listed animal species compiled during the literature review—California red-legged frog, southern mountain yellow-legged frog, coastal California gnatcatcher, least Bell's vireo, Casey's June beetle, Peninsular bighorn sheep, desert tortoise, and Coachella Valley fringe-toed lizard—only the Coachella Valley fringe-toed lizard has the potential to occur within the BSA. The BSA is outside of the geographic range of California red-legged frog, southern mountain yellow-legged frog, and Casey's June beetle, and the BSA does not provide suitable habitat for coastal California gnatcatcher, least Bell's vireo, Peninsular bighorn sheep, and desert tortoise; therefore, these seven species are not evaluated further. Detailed discussion of Coachella Valley fringe-toed lizard is provided below in Section 4.3.1.

4.3.1 Discussion of Coachella Valley Fringe-toed Lizard

Survey Results

Due to the known presence of Coachella Valley fringe-toed lizard in the vicinity of the BSA, and per the CVCC's recommendation, presence within the BSA was assumed and focused surveys for this species were not conducted. There are a number of mostly historical records of Coachella Valley fringe-toed lizard in the CNDDB overlapping the BSA. The closest known records in the CNDDB are four records between 2012 and 2021 in the area south of the Amtrak station and west of Palm Springs Station Road. The BSA is not within Coachella Valley fringe-toed lizard critical habitat.

Project Impacts

Project impacts are limited to the Indian Canyon Drive existing right-of-way and occur within and adjacent to the CVMSHCP Whitewater Floodplain Conservation Area, which contains core habitat for Coachella Valley fringe-toed lizard, a CVMSHCP-covered species. A total of 1.46 acres of ephemeral sand fields would be impacted during construction. The areas are directly adjacent to Indian Canyon Drive and the Amtrak station and have undergone (or are undergoing) regular disturbance for routine maintenance following flood and blowsand events that require removal of sand from Indian Canyon Drive. In addition, the Indian Canyon Drive and Bridge Widening Project [FPN STPLN 5282(016) and BRLO 5282(017)] is currently under construction and impacting areas in the northern portion of the BSA for this project.

Proposed project impacts for construction of the bridge would be temporary in nature, with the exception of the bridge footings, which would permanently impact 0.03 acres of ephemeral sand fields within the Whitewater River.

The project will not impact Coachella Valley fringe-toed lizard critical habitat.

Avoidance and Minimization Efforts

The BSA is within the CVMSHCP Whitewater Floodplain Conservation Area and subject to the conservation measures established for the conservation area and the avoidance and minimization measures listed in Section 4.4 of the CVMSHCP.

Construction of the bridge over a portion of the Whitewater River is consistent with the Whitewater River Floodplain Conservation Area conservation objective to maintain the ability of wildlife to cross Indian Canyon Drive. The bridge will provide an undercrossing

to facilitate contiguous habitat and movement of the Coachella Valley fringe-toed lizard within the river.

Measures BIO-1 through **BIO-6** will be implemented in addition to the following:

Measure BIO-11: Coachella Valley fringe-toed lizard. To the extent feasible, no sand removal activities will take place from November 1 to March 30 to avoid winter dormancy periods for lizards or if ambient air temperatures exceed 102 degrees Fahrenheit (the temperature at which lizard activity tends to be reduced).

Compensatory Mitigation

Compensatory mitigation is addressed through the conservation measures associated with the Whitewater Floodplain Conservation Area, which provides core habitat for Coachella Valley fringe-toed lizard and will be in concert with compensatory mitigation for impacts to ephemeral desert sand fields and Coachella Valley milk-vetch.

Implementation of the required mitigation measures outlined in the Conservation Plan (Caltrans 2003) regarding threatened and endangered species. Required mitigation shall be met through the replacement of desert sand fields habitat, on a 2:1 basis in the case of direct impacts, and a 1:1 basis in the case of indirect impacts, in an established conservation bank under the auspices of the CVMSHCP (**BIO-7**).

4.3.2 Discussion of Other CVMSHCP Covered Animal Species

Survey Results

With the exception of burrowing owl, no focused surveys for special-status animal species were conducted within the BSA. Focused surveys for burrowing owl were conducted in 2023. No active burrows or burrowing owls were detected within the BSA; however, outside of the BSA an occupied burrow was observed with two adults and up to seven juveniles approximately 0.45 miles south of Palm Springs Station Road intersection and 0.15 miles west of Indian Canyon Drive, and an unoccupied burrow was observed west of the BSA just north of Sunrise Parkway (Michael Baker International 2025a).

In addition to burrowing owl, the BSA supports potentially suitable habitat for flat-tailed horned lizard, LeConte's thrasher, Palm Springs pocket mouse, and Coachella Valley round-tailed ground squirrel, which are all covered species under the CVMSHCP. Focused surveys were not conducted for these species, and they were not observed within the BSA during surveys for other species.

Current construction related to the Indian Canyon Drive and Bridge Widening Project [FPN STPLN 5282(016) and BRLO 5282(017)] is occurring in the northern portion of the BSA and has altered the habitat along Indian Canyon Drive at and around the intersection of Palm Springs Station Road.

Project Impacts

A total of 9.55 acres of potential habitat for flat-tailed horned lizard, burrowing owl, LeConte's thrasher, Palm Springs pocket mouse, and Coachella Valley round-tailed

ground squirrel will be impacted by the proposed project. None of these species are federally listed and all are covered species under the CVMSHCP.

Proposed project impacts for construction of the bridge would be temporary in nature with the exception of the bridge footings, which would permanently impact approximately 0.03 acres of ephemeral sand fields within the Whitewater River. Construction of the bridge will facilitate habitat connectivity under the bridge and allow for the movement of these species under the bridge, reducing the risk of crossing Indian Canyon Drive at grade.

Avoidance and Minimization Efforts

The BSA is within the CVMSHCP Whitewater Floodplain Conservation Area and subject to the avoidance and minimization measures listed in Section 4.4 of the CVMSHCP and Land Use Adjacency Guidelines in Section 4.5 of the CVMSHCP.

Measures BIO-1 through **BIO-6 and BIO-9** and **BIO-10** will be implemented in addition to the following:

Measure BIO-12: Preconstruction Burrowing Owl Survey. Prior to the start of construction activities, the construction area and adjacent areas within 500 feet of the construction activities, or to the edge of the property if less than 500 feet, will be surveyed by an Acceptable Biologist for burrows that could be used by burrowing owl. If a suitable burrow is located, the biologist will determine if an owl is present in the burrow in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Two surveys will be conducted to clear the area: the first one will take place 14-30 days before, and the second one 24 hours before, any vegetation removal or ground-disturbing activities. If the Acceptable Biologist determines the burrow is occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season or a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No construction activities will be permitted within the buffer until the young are no longer dependent on the burrow as determined by the Acceptable Biologist. Following completion of the clearance survey, the qualified biologist should prepare and submit a final report documenting the methods and results of the survey.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the construction activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

Measure BIO-13: LeConte's thrasher. In modeled LeConte's thrasher habitat in the Whitewater Floodplain Conservation Area, during the nesting season, January 15–June 15, prior to the start of construction activities, surveys will be conducted by an Acceptable Biologist on the construction site and within 500 feet of the construction site, or to the property boundary if less than 500 feet. If nesting Le Conte's thrashers are found, a 500-foot buffer, or to the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction will be permitted within the buffer during the breeding season (January 15–June 15) or until the young have fledged as determined by the Acceptable Biologist.

Compensatory Mitigation

With implementation of the avoidance and minimization measures described above, no impacts would occur to flat-tailed horned lizard, burrowing owl, LeConte's thrasher, Palm Springs pocket mouse, or Coachella Valley round-tailed ground squirrel. Therefore, no compensatory mitigation measures are required.

4.3.3 Discussion of Non-CVMSHCP Species

Non-federally listed special-status species with potential to occur within the BSA include Crotch's bumble bee, California glossy snake, coast-horned lizard, golden eagle, loggerhead shrike, pallid bat, Townsend's big-eared bat, western yellow bat, and pocketed free-tailed bat.

Survey Results

No focused surveys were conducted for Crotch's bumble bee, California glossy snake, coast-horned lizard, golden eagle, loggerhead shrike, pallid bat, Townsend's big-eared bat, western yellow bat, and pocketed free-tailed bat.

Crotch's bumble bee may forage on floral resources; however, it is not expected to nest within the BSA due to the lack of suitable habitat. Golden eagle and loggerhead shrike may utilize the BSA for foraging; however, no suitable nesting habitat is present within the BSA. Similarly, pallid bat, Townsend's big-eared bat, western yellow bat, and pocketed free-tailed bat may fly over the project site and forage for insects in the BSA; however, there is no suitable roosting habitat within the BSA. Due to the presence of suitable habitat, California glossy snake and coast horned lizard may be residents within the BSA.

Project Impacts

The proposed project has the potential to impact foraging individuals of Crotch's bumble bee and loggerhead shrike. Crotch's bumble bee is most likely to occur during the time of year when floral resources are blooming, providing nectar and pollen. Loggerhead shrike may forage within the BSA year-round along the project alignment. Additionally, California glossy snake and coast-horned lizard may occur year-round, primarily utilizing the BSA for foraging and cover.

Golden eagle, pallid bat, Townsend's big-eared bat, western yellow bat, and pocketed free-tailed bat may forage high over the project site but are not expected to be directly

impacted by the proposed project. Indirect impacts to bats could occur during night work that uses bright lights to illuminate the construction area.

Avoidance and Minimization Efforts

The following avoidance and minimization measures will be implemented to ensure no impacts occur to special-status species not covered by the CVMSHCP.

Measures BIO-1 through **BIO-6** will be implemented in addition to the following:

Measure BIO-14: Migratory Birds. If construction commences during the bird breeding season (March 1 through June 30), a preconstruction survey for nesting birds will occur within three days prior to construction activities by an experienced avian biologist. The survey will occur within all suitable nesting habitat within the project impact area and a 500-foot buffer where access is permitted. If nesting birds are found, an avoidance area will be established as appropriate by a qualified biologist around the nest until it has determined that young have fledged or nesting activities have ceased. The project site will need to be re-surveyed if there is a lapse in construction activities for more than seven days during the nesting season.

Measure BIO-15: Night Lighting. Any necessary lighting during construction shall be shielded and directed toward the project area and shall not spill over into the Whitewater Floodplain Conservation Area. Temporary lighting used during construction shall meet the following parameters:

- Lighting will have temperatures of 3,000 Kelvin or less.
- Lighting shall be shielded and directed away from the conservation area so as to prevent spill over.
- When lighting spill over into the conservation area is unavoidable, lighting shall not exceed 15 lux (or 5 lux above baseline) as measured from 50 feet beyond the Project boundary.
- Lighting fixtures shall have motion detection and automatic shutoff functionality.

Compensatory Mitigation

With implementation of the avoidance and minimization measures described above, no impacts would occur to Crotch's bumble bee, California glossy snake, coast-horned lizard, golden eagle, loggerhead shrike, or foraging bats. Therefore, no compensatory measures are required.

4.4 Aquatic Resources

Aquatic resources are considered to be of special concern because they are regulated by federal and state agencies.

4.4.1 Discussion of Aquatic Resources

Survey Results

A total of 854.97 linear feet of jurisdictional aquatic resources were mapped within the BSA during the 2023 aquatic resources delineation (Michael Baker International 2025c). This equates to 5.03 acres of non-wetland waters of the U.S./waters of the state under the jurisdiction of the USACE and RWQCB, respectively, and 6.48 acres of unvegetated streambed under CDFW jurisdiction. No wetlands were mapped within the BSA (Table 3).

Of the total 854.97 linear feet of jurisdiction mapped within the BSA, approximately 354.05 linear feet occur within the Whitewater River. This equates to 4.25 acres of non-wetland waters of the U.S./waters of the state under the jurisdiction of the USACE and RWQCB, respectively, and 5.70 acres of unvegetated streambed under CDFW jurisdiction.

The remaining 500.92 linear feet were mapped within Chino Creek. This equates to 0.78 acres of non-wetland waters of the U.S./waters of the state under the jurisdiction of the USACE and RWQCB, respectively, and 0.78 acres of unvegetated streambed under CDFW jurisdiction.

Project Impacts

The aquatic resources delineation was limited to the project's LOD; therefore, the impact area is equal to the survey results. Hence, the proposed project would impact 4.05 acres of non-wetland waters of the U.S./waters of the State under the jurisdiction of the USACE and RWQCB, respectively, and 5.17 acres of unvegetated streambed under CDFW jurisdiction. No wetlands or riparian habitat would be impacted by the proposed project. Table 4 identifies the impacts for each jurisdictional type.

TABLE 4. IMPACTS ON JURISDICTIONAL AQUATIC RESOURCES

Aquatic Resources		Impacts		
ID	**Name**	**USACE/ RWQCB (acres)**	**Total Area CDFW (acres)**	**Total Length (Linear Feet**
WW-1	Whitewater River 1	1.02	2.14	89.3
WW-2	Whitewater River 2	2.64	2.64	203.79
WW-3	Whitewater River 3	0.003	0.003	5.58
Whitewater River Subtotal		***3.66***	***4.78***	***298.67***
CC-1	Chino Creek 1	0.11	0.11	64.07
CC-2	Chino Creek 2	0.24	0.24	68.94

Aquatic Resources		Impacts		
ID	**Name**	**USACE/ RWQCB (acres)**	**Total Area CDFW (acres)**	**Total Length (Linear Feet**
CC-3	Chino Creek 3	0.03	0.03	31.81
CC-4	Chino Creek 4	0.01	0.01	28.70
Chino Creek Subtotal		***0.39***	***0.39***	***193.52***
	Total	**4.05**	**5.17**	**492.19**

Avoidance and Minimization Efforts

The existing condition of Indian Canyon Drive within the Whitewater River and Chino Creek brings inherent difficulties in avoiding impacts to jurisdictional areas during any proposed project alternative. Minimization efforts include limiting the proposed impact area to the existing Indian Canyon Drive right-of-way. The bridge portion of the proposed project would elevate approximately 1,200 linear feet of Indian Canyon Drive by building a bridge over a portion of the Whitewater River, allowing natural flood and blowsand ecological processes to occur within the river. Implementation of **BIO-1** through **BIO-6**, **BIO-9**, and **BIO-10** would reduce potential indirect effects on aquatic resources.

Compensatory Mitigation

Based on the current project design, it is assumed that a CWA Section 404 Individual Permit and Wetlands Only Practicable Alternative (WOPA) will be required from the USACE as well as a CWA Section 401 Water Quality Certification from the RWQCB and a CFGC Section 1602 Streambed Alteration Agreement from the CDFW. Both permanent and temporary impacts would occur within the existing right-of-way and the extent of permanent versus temporary impacts would be determined during the regulatory permitting process when final engineering designs are available.

BIO-16: Compensatory Mitigation for Aquatic Resources. Mitigation for permanent impacts to USACE, RWQCB, and CDFW jurisdiction would occur at a minimum 1:1 ratio. Options to achieve this mitigation requirement would be determined during discussions with the agencies during the regulatory permitting process and could include on-site restoration, off-site property acquisition, or purchase of mitigation bank credits.

Mitigation for temporary construction-related impacts to USACE, RWQCB, and CDFW jurisdiction would also be mitigated at a ratio of at least 1:1. Options to achieve this requirement would be determined during discussions with the agencies during the regulatory permitting process and could include returning the channel bottom to pre-

construction condition or off-site property acquisition, or purchase of mitigation bank credits.

Chapter 5 – Conclusions and Regulatory Determinations

5.1 Federal Endangered Species Act Consultation Summary

On June 2, 2025, an IPaC resource list was obtained through the Information, Planning, and Conservation System database (Appendix G; USFWS 2025). The federally listed species shown in Table 5 were analyzed for their potential to occur within the BSA. Coachella Valley milk-vetch and Coachella Valley fringe-toed lizard may occur within the BSA and the proposed project may affect these species. With implementation of avoidance, minimization, and mitigation measures, however, the project is not expected to adversely affect these species.

TABLE 5. Federal Endangered Species Act Effects Determination

Species	Federal Listing Status	Effects Determination
INVERTEBRATES		
Monarch butterfly	Proposed Threatened	No effect
Casey's June beetle	Endangered	No effect
REPTILES		
Desert tortoise	Threatened	No effect
Coachella Valley fringe-toed lizard	Threatened	May affect, not likely to adversely affect
AMPHIBIANS		
California red-legged frog	Threatened	No effect
Southern mountain yellow-legged frog	Endangered	No effect
BIRDS		
Least Bell's vireo	Endangered	No effect
Southwestern willow flycatcher	Endangered	No effect
Coastal California gnatcatcher	Threatened	No effect
MAMMALS		
Peninsular bighorn sheep DPS	Endangered	No effect
PLANTS		

Species	Federal Listing Status	Effects Determination
Coachella Valley milk-vetch	Endangered	May affect, not likely to adversely affect
Slender-horned spineflower	Endangered	No effect
Triple-ribbed milk-vetch	Endangered	No effect
Parish's daisy	Threatened	No effect

In addition, the project site occurs within the USFWS Critical Habitat area for Coachella Valley milk-vetch. However, since the Critical Habitat occurs within the CVMSHCP and the project is a covered activity, the Critical Habitat is excluded.

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

5.2 Essential Fish Habitat Consultation Summary

There is no Essential Fish Habitat within the BSA. No consultation with the NOAA Fisheries is necessary.

5.3 California Endangered Species Act Consultation Summary

A total of 10 state-listed plant and wildlife species were analyzed for their potential to occur within the BSA, as shown in Table 6. Two state-listed wildlife species, Crotch's bumble bee and Coachella Valley fringe-toed lizard, were determined to have the potential to occur and be affected by the proposed project. Consultation with the CDFW will be necessary to address potential impacts and discuss recommended avoidance measures.

The remaining species are not expected to occur due to the lack of suitable habitat or negative results of focused surveys; therefore, they are considered absent from the BSA. The proposed project would have no effect on these species and no consultation with the CDFW is necessary or anticipated.

TABLE 6. State Endangered Species Act Effects Determination

Species	State Listing Status	Effects Determination
INVERTEBRATES		
Crotch's bumble bee	Candidate Endangered	May affect, not likely to adversely affect
AMPHIBIANS		
Southern mountain yellow-legged frog	Endangered	No effect
BIRDS		
Burrowing owl	Candidate Endangered	No effect
Least Bell's vireo	Endangered	No effect
MAMMALS		
Peninsular bighorn sheep DPS	Threatened	No effect
REPTILES		
Southern rubber boa	Threatened	No effect
Desert tortoise	Threatened	No effect
Coachella Valley fringe-toed lizard	Endangered	May affect, not likely to adversely affect
PLANTS		
Mojave tarplant	Endangered	No effect
Slender-horned spineflower	Endangered	No effect

5.4 Wetlands and Other Waters Coordination Summary

To date, there has been no coordination with regulatory agencies regarding on-site wetlands and aquatic features. A delineation of waters of the U.S. and waters of the state was completed for the proposed project and is included in the Aquatic Resources Delineation Report (Appendix E). The Aquatic Resources Delineation Report will be submitted to USACE and the RWQCB as part of the proposed project permitting process to obtain concurrence regarding jurisdictional determinations and to obtain a CWA permit from the USACE, and Waste Discharge Requirements under the Porter-Cologne Water Quality Act and 401 water quality certification from the RWQCB for impacts on 4.05 acres of non-wetland waters of the U.S./waters of the state.

Additionally, the Aquatic Resources Delineation Report will be submitted to the CDFW to obtain a Streambed Alteration Agreement under Section 1600 et seq. of the California Fish and Game Code for impacts on 5.17 acres of unvegetated streambed.

5.5 Invasive Species

The adherence to the terms and conditions of the CVMSHCP and to the Avoidance, Minimization, and Mitigation Measures set in CVMSHCP Section 4.4 and the Land Use Adjacency Guidelines set in CVMSHCP Section 4.5 would ensure compliance with Executive Order 13112. No further action is necessary.

5.6 Migratory and Nesting Birds

Several species of native birds and raptors may occur within the BSA. Most of these species lack special status, but all are protected under the MBTA and the CFGC. Implementation of **Measure BIO-12** through **BIO-14** would ensure compliance with these laws and regulations. No further action is necessary.

5.7 Coachella Valley MSHCP

The project is within the Whitewater Floodplain Conservation Area and is listed as a covered activity in Table 7-5 of the CVMSHCP. The project has been designed to ensure compliance with the following conservation area objectives:

- Fluvial sand transport: The proposed bridge would allow sand-affiliated ecological processes to occur under the bridge, allowing for a more natural process with less impacts to Indian Canyon Drive and Palm Springs Station Road.

- Wildlife movement undercrossing: The proposed bridge would be approximately 15 feet in height, restoring natural wildlife movement opportunities under the bridge rather than across Indian Canyon Drive.

Project impacts will be fully mitigated in advance of the project through the development of the CVMSHCP reserve system. Avoidance and minimization measures **BIO-1** through **BIO-15** will be implemented to ensure compliance with the CVMSHCP and conservation objectives of the Whitewater Floodplain Conservation Area and covered species objectives.

Chapter 6 – References

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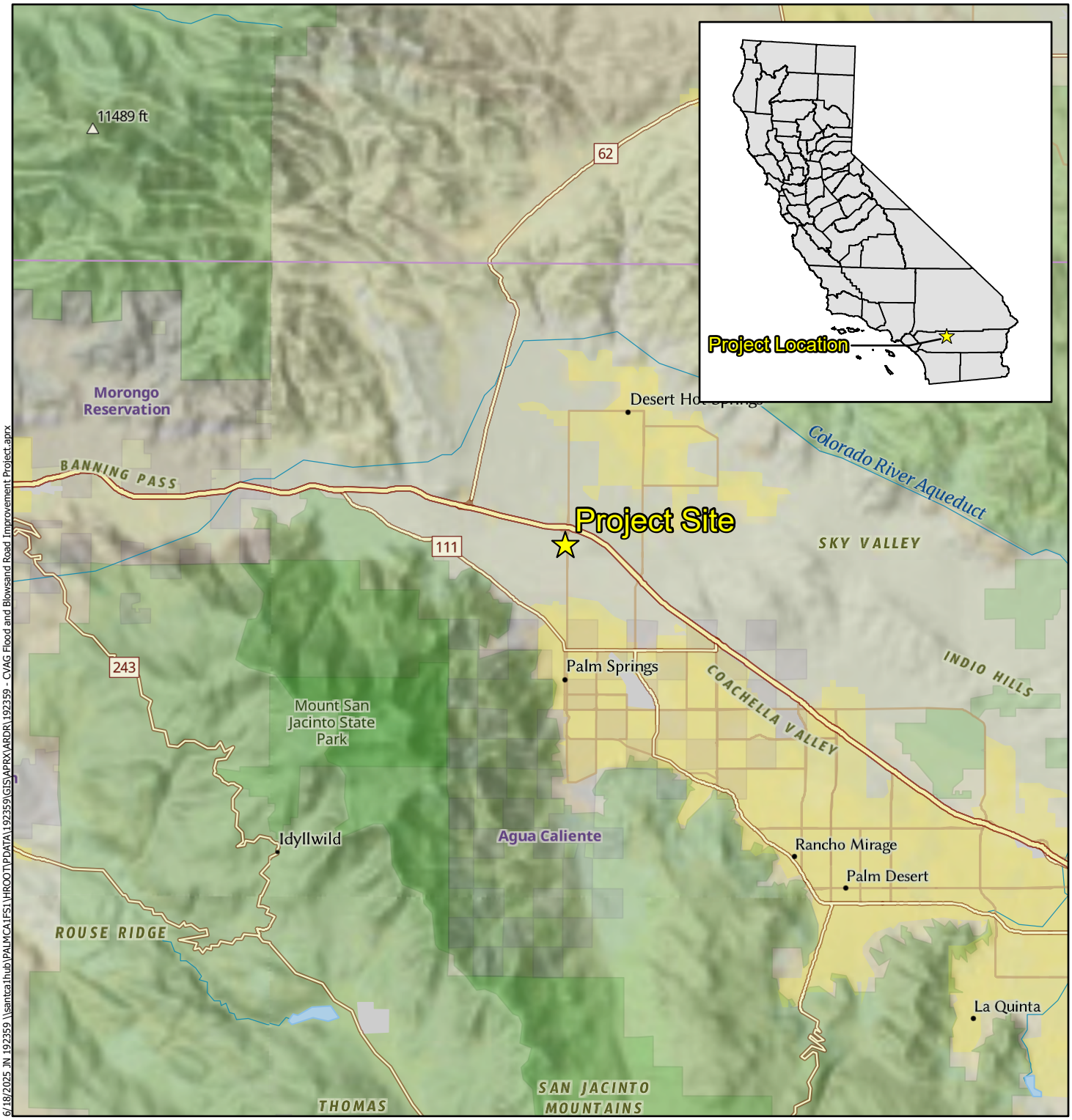
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Appendix A – Figures



Legend

★ Project Site

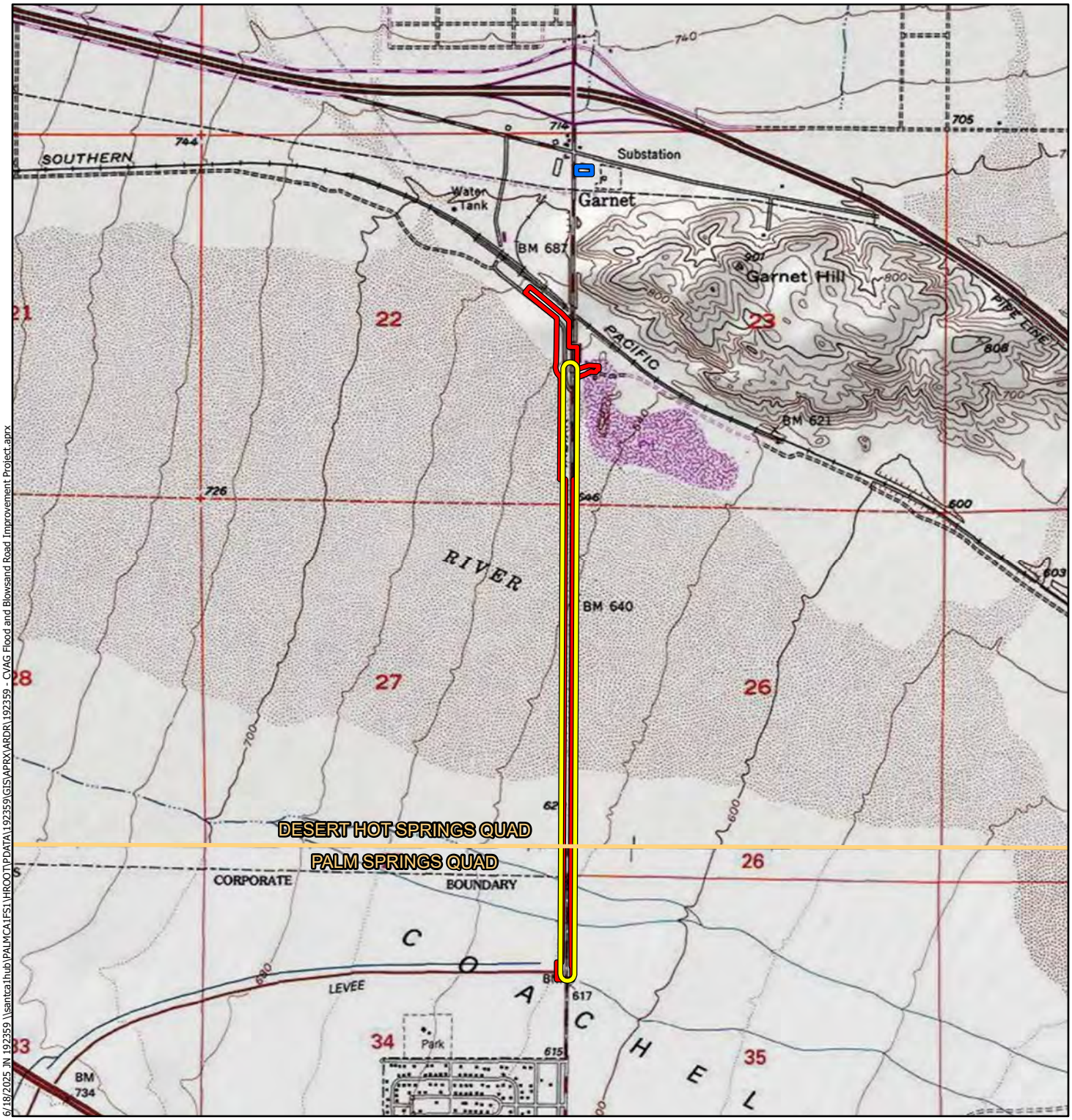
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Riverside County

Regional Vicinity

Figure 1



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\DATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area

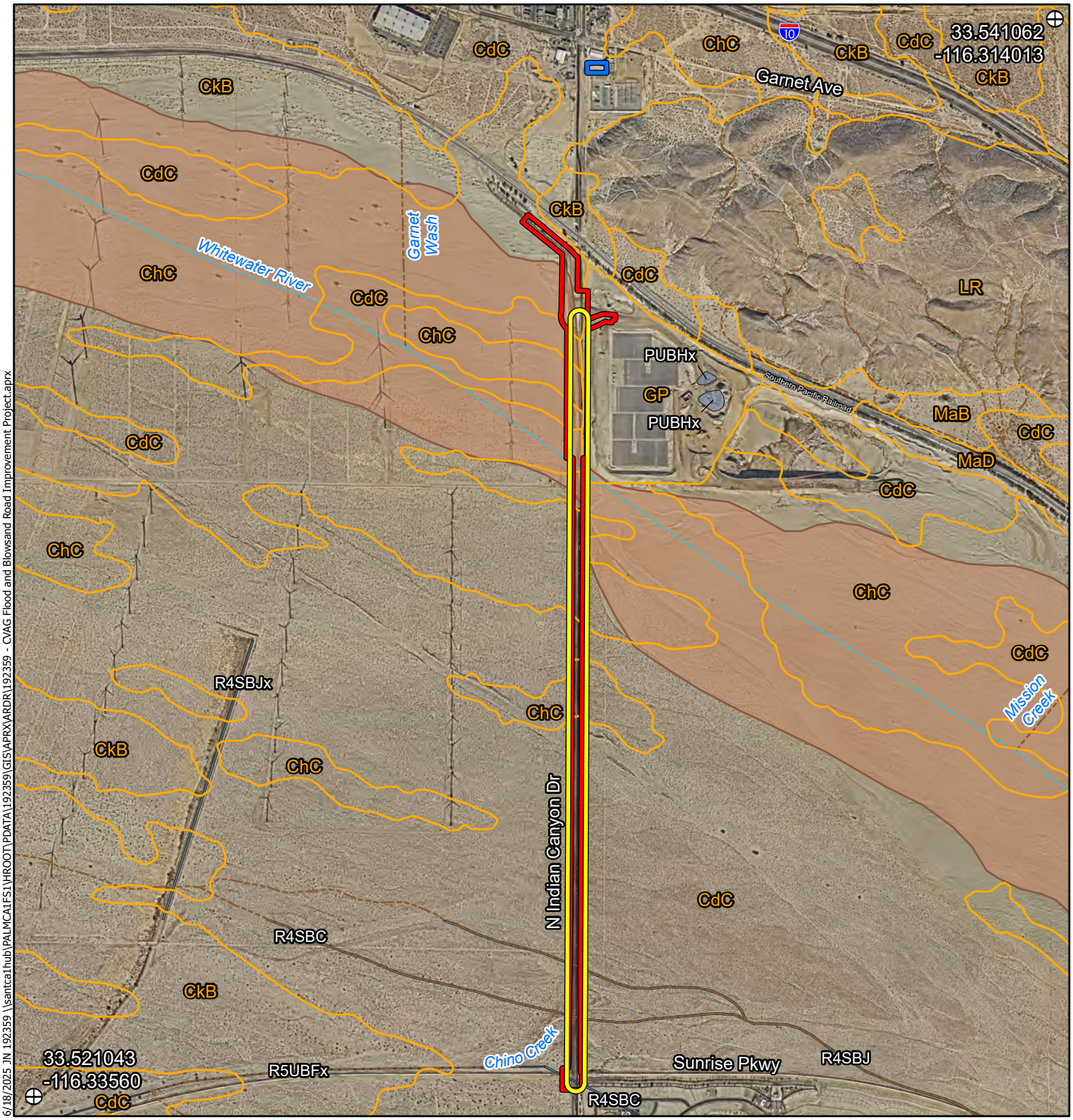
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 1,000 2,000
US Feet

Site Vicinity

Source: Esri, ArcGIS Online, Desert Hot Springs and Palm Springs USGS 7.5-Minute topographic quadrangle maps: *Palm Springs, California*

Figure 2



6/18/2025 JN 192359 \\santca1.hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- Reference Point
- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area
- Soils

National Hydrography Dataset (NHD)

- Stream/River= Ephemeral
- Stream/River= Intermittent
- Wash

National Wetlands Inventory (NWI)

- Freshwater Pond
- Riverine

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

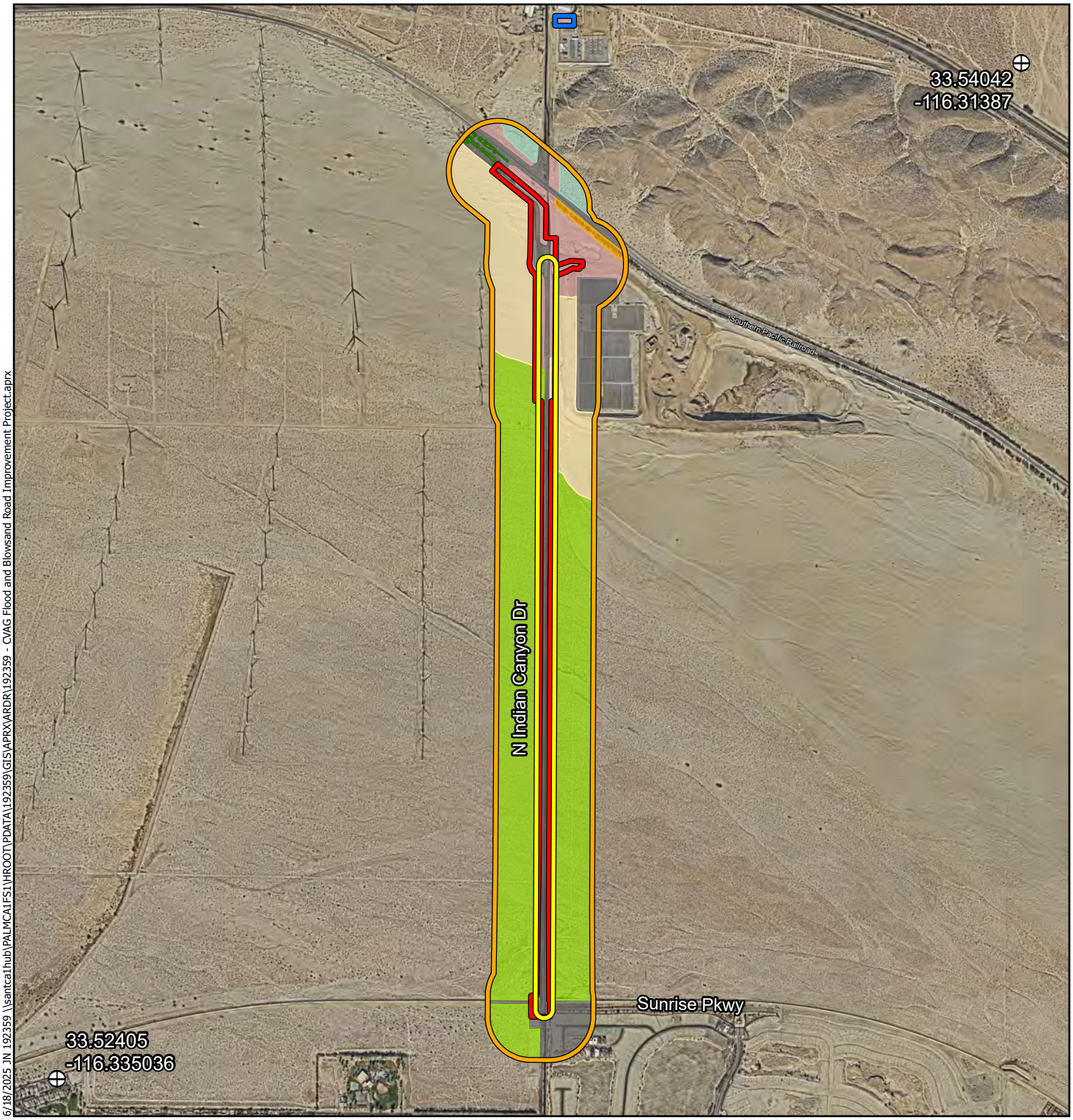
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 0.13 0.25 Miles

Proposed Project

Source: Esri, ArcGIS Online, USGS, USFWS, USDA, Riverside County, 2025 Nearmap Imagery

Figure 3



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- Reference Point
- 2023 Study Area
- 2025 Study Area
- 2025 Study Area (500ft Buffer)
- Potential Construction Staging Area

Vegetation Communities and Land Covers

- Developed (47.2 Acres)
- Disturbed (21.71 Acres)
- Disturbed *Ambrosia salsola - Bebbia juncea* Shrubland Alliance (Ambrosia salsola Association) (168.45 Acres)
- Disturbed Creosote Bush Scrub (5.29 Acres)
- Ephemeral Desert Sand Fields (47.83 Acres)
- Ornamental (0.75 Acres)
- Tamarisk Thickets (1.81 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

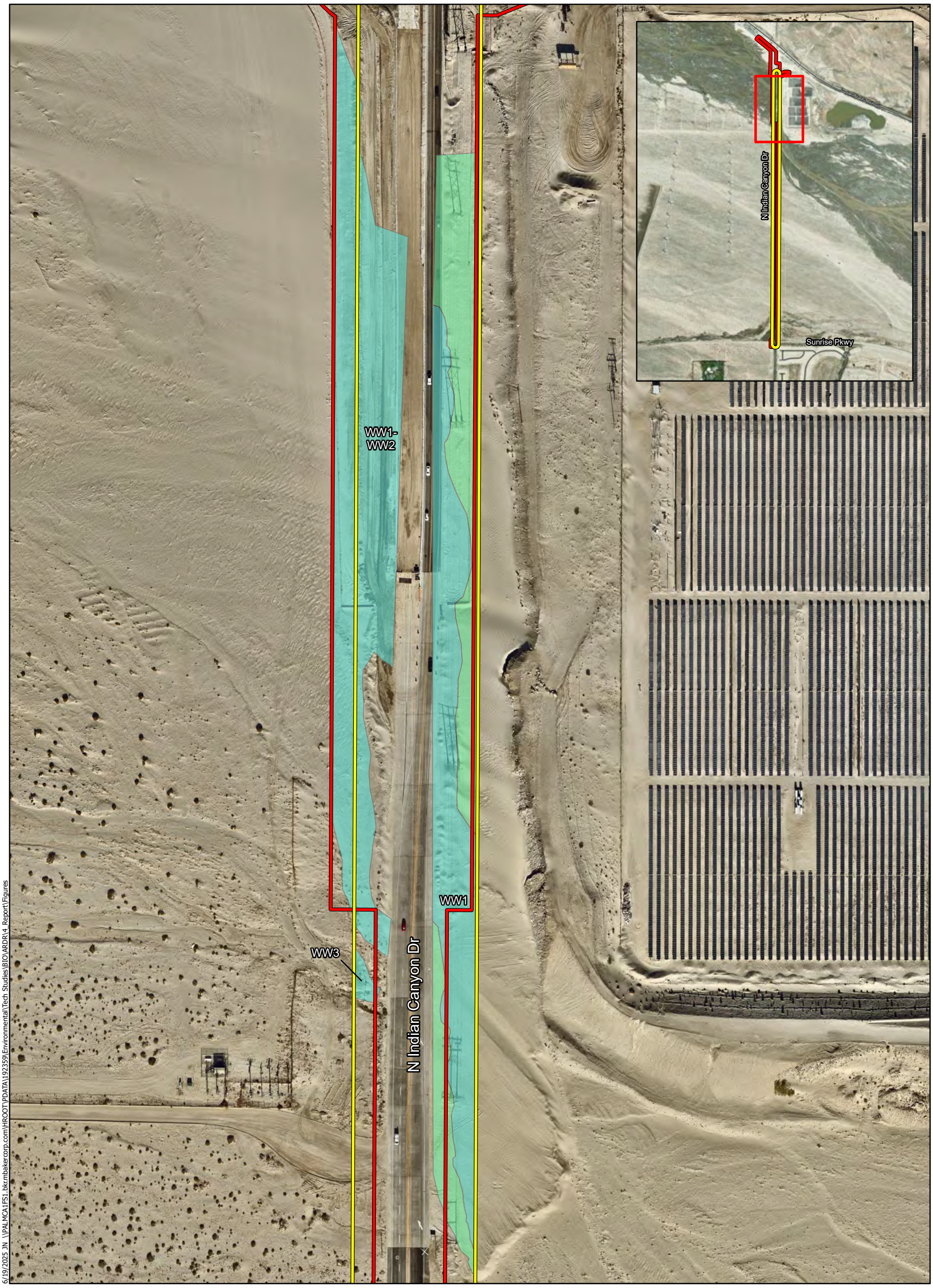
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 0.13 0.25 Miles

Vegetation Communities/Land Covers

Source: Esri, ArcGIS Online, Riverside County, 2025 Nearmap Imagery

Figure 4



6/19/2025 JN \\PALMCA1FS1.bkrmbakercorp.com\HROOT\PDATA\192359\Environmental\Tech Studies\BIO\ARDR\4_Report\Figures

Legend

2023 Study Area

2025 Study Area

Jurisdiction

USACE non-wetland WoUS / RWQCB non-wetland WoS / CDFW non-vegetated streambed (4.25 Acres)

CDFW non-vegetated streambed (1.45 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

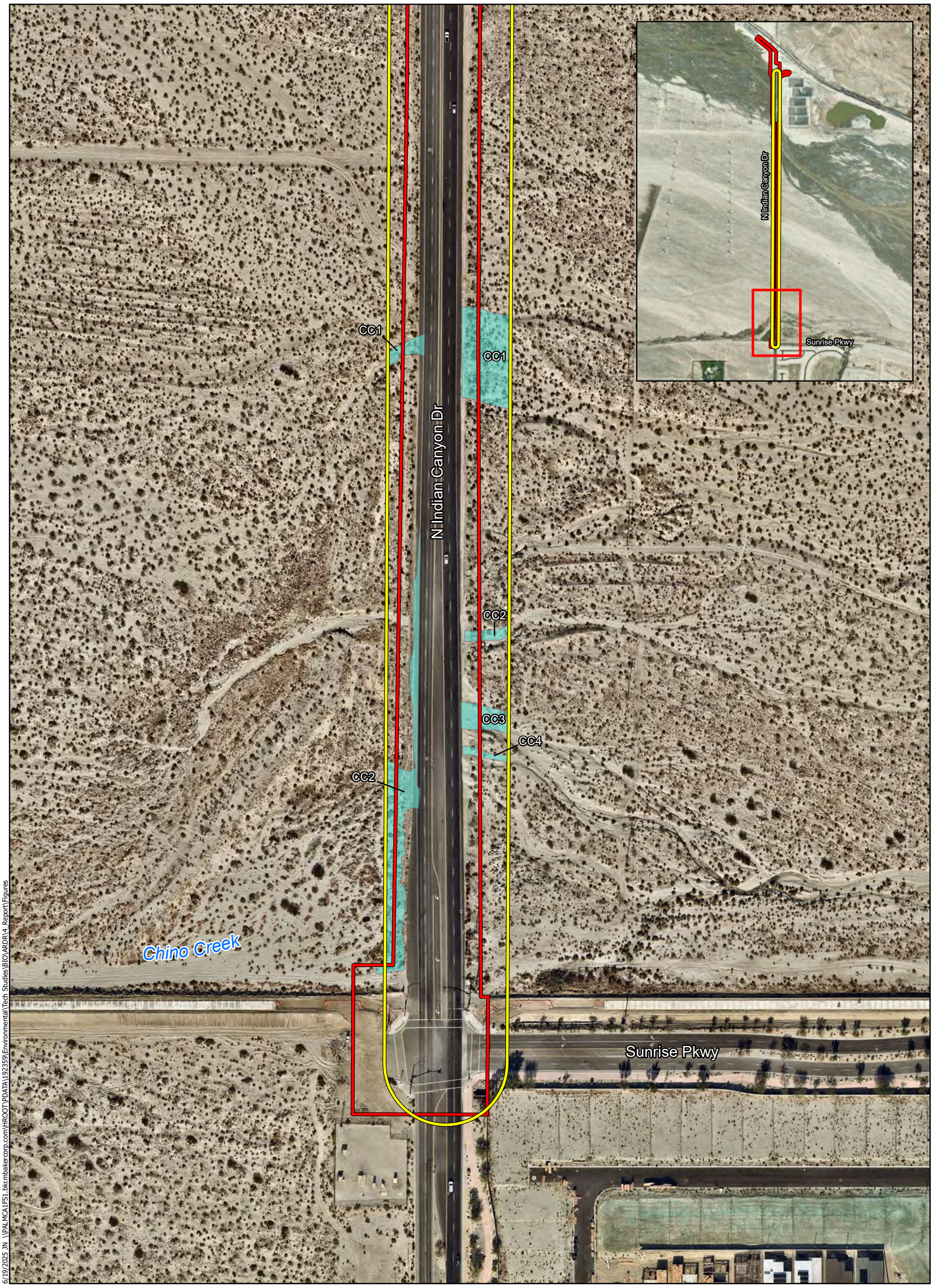
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 75 150 US Feet

Source: Esri, ArcGIS Online, USACE, CDFW, Riverside County, 2025 Nearmap Imagery

Jurisdictional Delineation Map

Figure 5a



6/19/2025 JN \\PALMCA1FS1.bkrmbakercorp.com\HROOT\PDATA\192359\Environmental\Tech Studies\BIO\ARDR\4_Report\Figures

Legend

2023 Study Area

2025 Study Area

Jurisdiction

USACE non-wetland WoUS / RWQCB non-wetland WoS / CDFW non-vegetated streambed (0.78 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

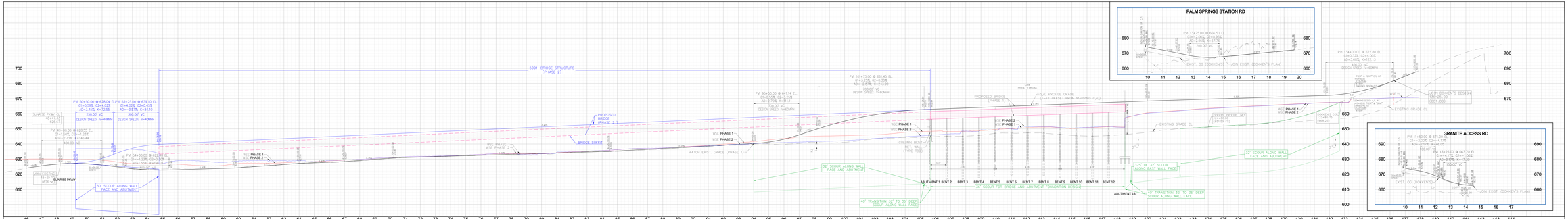
Jurisdictional Delineation Map

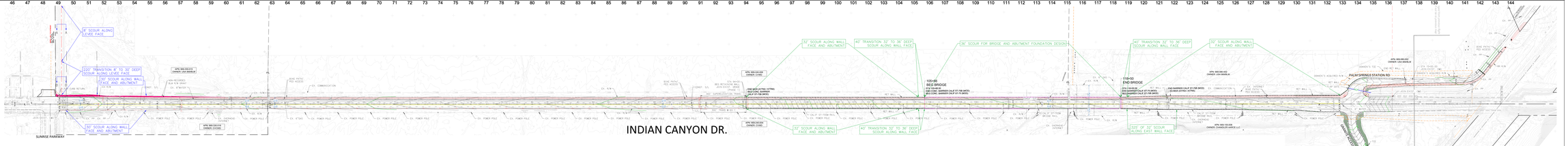
0 75 150 US Feet

Source: Esri, ArcGIS Online, USACE, CDFW, Riverside County, 2025 Nearmap Imagery

Figure 5b

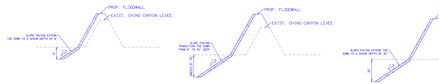
Appendix B – Proposed Project





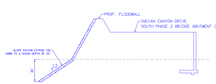
LEGEND:

- INDICATES EXISTING RIGHT-OF-WAY
- INDICATES EXISTING CENTERLINE
- INDICATES EXISTING EDGE OF PAVEMENT
- INDICATES EXISTING STRIPING
- INDICATES EXISTING CONCRETE FLATWALLWAY
- INDICATES EXISTING UTILITY POLE
- INDICATES EXISTING FRONTIER COMMUNICATION LINE
- INDICATES EXISTING OVERHEAD ELECTRICAL LINE
- INDICATES EXISTING WATER LINE
- INDICATES EXISTING SPECTRUM COMMUNICATION LINE
- INDICATES EXISTING SEWER LINE
- INDICATES EXISTING UNDERGROUND ELECTRICAL LINE
- INDICATES PROPOSED ASPHALT STRIPING
- INDICATES PROPOSED YELLOW STRIPING
- INDICATES PROPOSED EDGE OF PAVEMENT
- INDICATES PROPOSED BIKE PATH
- INDICATES PROPOSED RAILING
- INDICATES PROPOSED CONCRETE BARRIER
- INDICATES PROPOSED RETAINING WALL
- INDICATES PROPOSED STORM DRAIN IMPROVEMENTS
- INDICATES NON-RECORDED R/W R/W GRANT
- INDICATES PROPOSED MULTI-USE TRAIL AREA

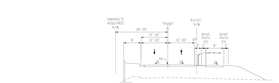


CHINO CANYON LEVEE
SECTION A-A

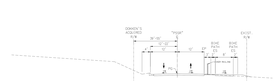
CHINO CANYON LEVEE
SECTION B-B



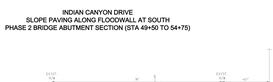
INDIAN CANYON DRIVE
SLOPE PAVING ALONG FLOODWALL AT SOUTH
PHASE 2 BRIDGE ABUTMENT SECTION (STA 49+50 TO 54+75)



PALM SPRINGS STATION RD
STA 12+00 TO STA 14+50



PALM SPRINGS STATION RD
STA 14+50 TO STA 28+00



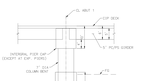
INDIAN CANYON DRIVE
STA 54+75 TO STA 94+00



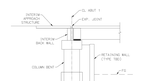
INDIAN CANYON DRIVE
SOUTH SLOPE OF NORTH BRIDGE SECTION (~STA 94+00 TO STA 105+66)



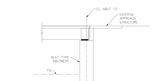
INDIAN CANYON DRIVE
NORTH BRIDGE SECTION (STA 105+66 TO STA 118+50)



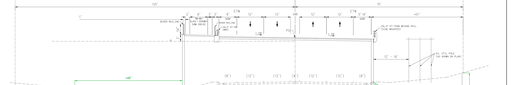
TYPICAL BENTS



ABUTMENT 1



ABUTMENT 13



INDIAN CANYON DRIVE
NORTHERN SECTION (STA 118+50.00 TO 129+85.90)

30% SUBMITTAL

INDIAN CANYON DRIVE
GEOMETRIC APPROVAL DRAWING
REVISED: Jun. 2, 25

Michael Baker INTERNATIONAL
Riverside Executive Plaza, Suite 100, Palm Desert, CA 92211
Phone: (760) 776-8100 Website: MBAKERINTL.COM

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
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CVAG

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PLOTTED BY: Kevin Ayala (kayala@mbakerintl.com) 6/2/2025 9:44 AM

INDIAN CANYON DRIVE

SUNRISE PARKWAY

PALM SPRINGS STATION RD

"A" ROAD

GRANITE ACCESS RD

GARNET AVENUE

INTERSTATE 10

AMTRAK STATION

POTENTIAL CONSTRUCTION STAGING AREA

SEC 27 T3S, R4E

SEC 22 T3S, R4E

SEC 26 T3S, R4E

SEC 23 T3S, R4E

T3S 27 T3S R4E

R4E 26 23 R4E

APN: 669-330-047
OWNER: HACI 31848+1 MB 414/49-73
ADDRESS: NOT ASSIGNED

APN: 669-330-015
OWNER: USA 669/BLM
ADDRESS: NOT ASSIGNED

APN: 669-240-006
OWNER: CVWD
ADDRESS: NOT ASSIGNED

APN: 669-330-046
OWNER: CVWD
ADDRESS: NOT ASSIGNED

APN: 669-330-018
OWNER: CVCWD
ADDRESS: NOT ASSIGNED

APN: 669-240-004
OWNER: CVWD
ADDRESS: NOT ASSIGNED

APN: 669-080-002
OWNER: USA 669/BLM
ADDRESS: NOT ASSIGNED

APN: 669-100-008
OWNER: CHANDLER AARGE LLC
ADDRESS: NOT ASSIGNED

APN: 669-070-001
OWNER: CITY OF PALM SPRINGS
ADDRESS: NOT ASSIGNED

APN: 669-070-002
OWNER: CITY OF PALM SPRINGS
ADDRESS: NOT ASSIGNED

APN: 669-070-005
OWNER: USA 669/BLM
ADDRESS: NOT ASSIGNED

APN: 669-070-007
OWNER: SPRR
ADDRESS: NOT ASSIGNED

APN: 669-070-006
OWNER: SPRR
ADDRESS: NOT ASSIGNED

APN: NO INFO
OWNER: NO INFO
ADDRESS: NOT ASSIGNED

APN: 669-093-003
OWNER: USA 669/BLM
ADDRESS: NOT ASSIGNED

APN: 669-060-001
OWNER: PALM SPRINGS TR
ADDRESS: NOT ASSIGNED

APN: 669-060-011
OWNER: SPRR
ADDRESS: NOT ASSIGNED

APN: 669-093-003
OWNER: ROBERT W MINER JR
ADDRESS: NOT ASSIGNED

APN: 669-093-002
OWNER: ROBERT W MINER JR
ADDRESS: NOT ASSIGNED

APN: 669-093-010
OWNER: C.S. REENDERS
ADDRESS: NOT ASSIGNED

APN: 669-093-008
OWNER: PRICE WILLIAM
ADDRESS: NOT ASSIGNED

SPRR R/W

LEGEND

WHITEWATER FLOODPLAIN CONSERVATION AREA

POTENTIAL CONSTRUCTION STAGING AREA

LIMITS OF DISTURBANCE (34.5 ACRES)

Underground Service Alert
DIAL: 811
TWO WORKING DAYS BEFORE YOU DIG

NORTH

400' 200' 0 400' 800'
SCALE: 1"=400'

EX-001

NO.	REVISION	APPROVED	DATE

BENCH MARK | ELEV.
LOCATION

PREPARED UNDER THE DIRECT SUPERVISION OF:
Michael Baker INTERNATIONAL
75-410 Gerald Ford Drive, Suite 100
Palm Desert, CA 92211
Phone: (760) 346-7481
MBAKERINTL.COM

DESIGN BY: FT	CITY CHECK	RIGHT-OF-WAY	INITIAL	DATE	
DRAWN BY: OG		TRAFFIC ENG'G			
REVIEWED BY: FM	DATE	FIELD ENG'G			

PREPARED BY:
R.C.E. NO. — DATE 6/9/25

APPROVED BY: THOMAS GARCIA, P.E.
R.C.E. NO. 48279 DATE

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS

WESTERN CV FLOOD/BLOWSAND ROAD IMPROVEMENT PROJECT
INDIAN CANYOND DRIVE
LOCATION MAP EXHIBIT

FILE NO.
DWG. NO.
CADD FILE NAME: Location Map Exhibit.dwg
SHEET 1 OF 1 SHTS.

C:\USERS\FRANK.TRAN\DC\ACCDOCS\MICHAEL BAKER INTERNATIONAL\192359 - CVAG - INDIAN CANYON DRIVE\PROJECT FILES\CADD\TRANSPW\EXHIBITS\LOCATION MAP EXHIBIT.DWG TRAN, FRANK 6/9/2025 4:28 PM

Appendix C – Burrowing Owl Report

Michael Baker INTERNATIONAL

We Make a Difference

May 30, 2025 JN 192359

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
Attn: Mr. Amir Modarressi, CVAG PM-Transportation
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92236

RE: Burrowing Owl Survey Report for the Western Coachella Valley Flood and Blowsand Road Improvement Project-Phase One, Indian Canyon Drive, City of Palm Springs, Riverside County, California

Dear Amir Modarressi:

Michael Baker International, Inc. conducted a focused burrowing owl (*Athene cunicularia*; BUOW) survey during the 2023 breeding season for the Western Coachella Valley Flood and Blowsand Road Improvement Project (the project) located in the City of Palm Springs, Riverside County, California. The Coachella Valley Association of Governments (CVAG) proposes to implement road improvements along a 1.6-mile portion of Indian Canyon Road, which supports potential habitat for the BUOW. The 2023 focused survey effort encompassed the proposed limits of disturbance from Palm Springs Station Road south to Sunrise Parkway plus a 500-foot buffer (2023 biological study area[BSA]). In 2025, a BUOW habitat assessment was conducted within an added area that includes the Amtrak station and a proposed construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue (2025 BSA). This report includes the methods, results, and conclusions/recommendations for future actions based on the 2023 and 2025 survey results.

PROJECT LOCATION

The project site is in the northern portion of the City of Palm Springs and includes a portion of Indian Canyon Drive south of Interstate 10 between Palm Springs Station Road and Sunrise Parkway (Attachment A, Figure 1, Regional Vicinity). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm Springs U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (Attachment A, Figure 2, Site Vicinity). Specifically, the project site includes Assessor's Parcel Numbers 669-080-002, 669-240-006, 669-240-004, and 669-100-008. The project site is located within the Whitewater Floodplain Conservation Area of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP, CVAG 2007).

PROJECT DESCRIPTION

Frequent and prolonged road closures on Indian Canyon Drive due to flood and blowsand events strain the region's transportation system. The proposed project will build road improvements along Indian Canyon Drive and a bridge system that spans a portion of the Whitewater River to mitigate the adverse impacts of flood and blowsand events.

The project's limits of disturbance encompass approximately 1.6 miles of Indian Canyon Drive from Palm Springs Station Road to Sunrise Parkway. Primary improvements will occur within the Indian Canyon Drive right-of-way. Project development will occur in six phases over 24 months and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Staging would occur along the project alignment and southeast of the intersection of Indian Canyon Drive and Garnet Avenue with construction vehicles utilizing Indian Canyon Drive south of Garnet Avenue to access the project site.

Vegetation Communities/Land Covers

Vegetation communities and land cover mapping was conducted by Michael Baker in 2023 and 2025 using the California Department of Fish and Wildlife's (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) and *California Natural Communities List* (CDFW 2025). Table 1 summarizes the extent and Attachment A, Figure 3, illustrates the location of the vegetation communities and land cover types that occur in the survey area and that are suitable for BUOW. Descriptions of each are provided below.

TABLE 1. VEGETATION COMMUNITIES IN THE SURVEY AREA

Vegetation Communities	Acres
Disturbed cheesebush – sweetbush scrub (*Ambrosia salsola – Bebbia juncea* Shrubland Alliance)	168.45
Ephemeral Desert Sand Fields	5.65
Tamarisk Thickets (*Tamarix* spp. Shrubland Semi-Natural Alliance)	1.81
Disturbed Creosote Bush Scrub (*Larrea tridentata*- Shrubland Alliance)	5.29
Developed	14.89
Disturbed	21.71
Ornamental	0.75
TOTAL	293.03

Disturbed Cheesebush – Sweetbush Scrub

The disturbed cheesebush-sweetbush Scrub (*Ambrosia salsola-Bebbia juncea shrubland alliance*) is located to the east and west of much of the proposed project site along Indian Canyon Drive. Cheesebush (*Ambrosia salsola*) dominates this vegetation community. In addition, common Mediterranean grass (*Schismus barbatus*), Fremont pincushion (*Chaenactis fremontii*), and fanleaf crinklemat (*Tiquilia plicata*), and a mixed shrub cover of sweetbush (*Bebbia juncea*), Emory's indigo bush (*Psorothamnus emoryi*), and white bursage (*Ambrosia dumosa*) occur at lower densities. This community generally provides both breeding and foraging habitat for BUOW.

Ephemeral Desert Sand Fields

Ephemeral Desert Sand Fields are located along the northern section of the BSA. This land cover is primarily unvegetated due to surface flows, frequently shifting sandy soils due to high velocity winds, and anthropogenic activities (e.g., frequent disturbance from vehicle traffic and illegal dumping). Vegetation that is present primarily consists of sparsely growing or ruderal plant species including desert twinbugs (*Dicoria canescens*) and Saharan mustard (Brassica tournefortii), and infrequent patches of scalebroom (*Lepidospartum squamatum*). Due to the soft sands (blowsands) that dominate this community, it generally only provides foraging habitat for BUOW as the sands are too friable to support burrows.

Tamarisk Thickets

Tamarisk Thickets (*Tamarix spp.* Shrubland Semi-Natural Alliance) occurs as a monotypic stand of tamarisk (*Tamarix aphylla*) along the southern right-of-way of the Union Pacific Railroad. This vegetation community was planted along linear infrastructure routes throughout the Coachella Valley as a windbreak but is considered a highly invasive community. This vegetation community was defined utilizing the MCV.

Disturbed Creosote Bush Scrub

The Disturbed Creosote Bush Scrub (*Larrea tridentata* shrubland scrub) is located north of the Union Pacific Railroad on both sides of Indian Canyon Drive. This area is sparsely vegetated primarily with creosote bush (*Larrea tridentata*), with cheesebush, Saharan mustard, and Mediterranean schismus present sporadically, and occurs in an area that has been disturbed by off-road vehicles. This vegetation community was defined utilizing the MCV.

Developed

Developed areas consist of areas that have been constructed upon or physically altered to a degree that natural soil substrates and native vegetation are no longer supported. Developed

portions of the study area include Indian Canyon Drive, Palm Springs Station Road, and Sunrise Parkway, the Amtrak station, and commercial development.

Disturbed

Disturbed areas are associated with the construction work occurring along Palm Springs Station Road, dirt parking lots, and the quarry east of Indian Canyon Drive on the north end of the BSA.

Ornamental

Ornamental plantings, characterized by a diverse array of decorative flora, including California fan palm (*Washingtonia filifera*), blue palo verde (*Parkinsonia florida*), spoon yucca (*Dasylirion wheeleri*), and other native and non-native species, are present at the Amtrak station. The purpose of these plantings is to add aesthetic value and contribute to the overall landscaping design of the area.

METHODS

2023 Survey

Michael Baker biologists conducted a focused habitat assessment and burrowing owl surveys following the guidelines contained in the *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game [CDFG] 2012). The 2023 survey area extended along Indian Canyon Drive (including a 500-foot buffer from the centerline of the road) from Palm Springs Station Road south to Sunrise Parkway. The guidelines recommend conducting a habitat assessment to determine if suitable habitat for BUOW exists on the project site and surrounding buffer zone, followed by four separate surveys to determine presence/absence of the species during the breeding season. At least one survey must occur between February 15 and April 15, while the remaining three surveys are recommended to occur at least three weeks apart between April 15 and July 15, with at least one survey occurring after June 15. The guidelines recommend avoiding surveys when wind speeds exceed 20 kilometers per hour (approximately 12.4 miles per hour) or if there is precipitation or dense fog. All surveys were conducted between morning civil twilight and 1000 to provide the highest detection probabilities per the guidelines (CDFG 2012).

The habitat assessment and first focused survey were attempted on April 14, 2023 during the first survey window. However, strong winds and closure of Indian Canyon Drive due to blowsand prevented the survey team from completing the survey. As a result, a second attempt was required, which Michael Baker biologists accomplished the following week on April 21, 2023. Similarly, a second attempt was required for the third survey conducted on

June 9, 2023 due to high winds. Survey dates, times, biologists, and conditions are summarized in Table 2.

TABLE 2. SUMMARY OF SURVEY CONDITIONS

Date	Survey	Biologists	Time (start-end)	Temperature °F/Cloud Cover/Wind (start-end)
04/14/2023	Habitat Assessment and Focused Survey #1	AJ, JP, MF, TM1	0600-0800	51-58/0% cc/8-14 mph (survey cancelled - road closure)
04/21/2023	Focused Survey #1	AJ, RP, TM1, TM2	0630-1000	61-87/0-100% cc/1-3 mph
05/19/2023	Focused Survey #2	RP, TM2, MB, SM	0600-0830	64-75/0% cc/5-8 mph
06/09/2023	Focused Survey #3	TM1	0645-0823	66-74/0% cc/14-25 mph (survey cancelled - high winds)
06/13/2023	Focused Survey #3	TM1, SM	0635-0945	66-74/0% cc/3-9 mph
07/07/2023	Focused Survey #4	KP, MF, SM	0600-0850	78-89/0% cc/7-10 mph
04/14/2025	Habitat Assessment	JP	1015-1115	80-84/50% cc/1-8 mph

Biologists: AJ-Anna Jullie, JP-John Parent, KP-Krista Perine, MB-Margaret Bornyasz, MF-Marisa Flores, RP-Ryan Phaneuf, SM-Samantha Martinez, TM1-Tom Millington, and TM2-Trina Ming

Conditions: F-Fahrenheit, CC-cloud cover, mph-miles per hour

During the surveys, Michael Baker biologists walked meandering transects (spaced approximately 20 to 60 feet apart) across the survey area in search of natural and modified habitats for nesting and foraging. BUOW habitat includes, but is not limited to, native and non-native grassland, interstitial grassland within shrub lands, shrub lands with low density shrub cover, golf courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas. Locations with suitable habitat, burrows, or species detections in the survey area were recorded with a GPS receiver and on field maps. Some areas at the far northern and far southern ends of the survey area on both sides of Indian Canyon Drive were fenced and could only be surveyed from the exterior with binoculars.

Methods to detect the presence of BUOW included direct observation, aural detection, and signs of presence including pellets, whitewash, feathers, or prey remains. All suitable burrows/nest sites were thoroughly examined for signs of presence and all burrows, if encountered, were examined for shape, scat, pellets, feathers, tracks, and prey remains. Binoculars were used to scan areas that were inaccessible due to lack of right-of-entry to observe and identify distant birds; identify any suitable, occupied, and remnant burrows consisting of natural and non-natural substrates; and identify any activity around potential suitable habitat for BUOW.

2025 Survey

Michael Baker biologist, John Parent, conducted a focused habitat assessment on April 14, 2025 in and around the Amtrak station and at the proposed construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue (Attachment A, Figure 3). Methods employed mirror those described above for the 2023 habitat assessment. Survey details are included in Table 2.

SURVEY RESULTS

2023 Survey Results

No BUOW individuals or BUOW sign (i.e., pellets, whitewash, feathers, or prey remains) were observed in the BSA during any of the four focused surveys conducted in 2023. Suitable foraging habitat and line of sight opportunities were observed throughout the survey area, as well as one suitable burrow located just west of Indian Canyon Drive (but which had no BUOW sign present; Attachment A, Figure 3). The soils located throughout the northernmost portion of the survey area were friable and did not contain suitable substrate to support burrows or nesting/roosting opportunities for BUOW. However, this area would still be suitable for BUOW to forage in if present and BUOW could still occur across the rest of the survey area. An occupied burrow with two adults and up to seven juveniles was found approximately 300-feet to the west of the survey area, or approximately 800-feet west of Indian Canyon Drive (Attachment A, Figure 3).

2025 Survey Results

No burrows or potential burrows were observed during the 2025 habitat assessment. Active construction for the building of a new bridge across the railroad tracks was occurring in the area along approximately 0.5 miles of Indian Canyon Drive from Garnet Avenue south to the intersection of Indian Canyon Drive and Palm Springs Station Road. Wind-blown sand was covering several places along Palm Springs Station Road and in and around the Amtrak station. A small staging area is being used on the west side of Indian Canyon Drive at Sunrise Parkway. Due to development, construction activity, and presence of blowsand, BUOW are not expected to occur within the 2025 BSA.

CONCLUSIONS AND RECOMMENDATIONS

No BUOWs, sign, occupied burrows, or remnant BUOW burrows were observed in the survey area. Therefore, project-related activities are not expected to result in any direct or indirect impacts to BUOW or occupied burrows in the survey area.

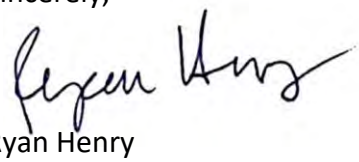
Although BUOWs were not observed in the survey area during the focused survey, portions of the survey area support suitable foraging and nesting habitat for BUOW. Additionally, as many as nine BUOW were observed approximately 300 feet west of the survey area at a burrow. According to the California Natural Diversity Data Base (CNDDB 2025), the nearest occurrence record of BUOW prior to this survey was approximately 0.5 miles northwest of the survey area along Garnet Avenue.

Due to the presence of suitable foraging habitat for BUOW and the proximity of the survey area to existing occurrence records for BUOW, pre-construction BUOW clearance surveys should be conducted by a qualified biologist to ensure that BUOWs remain absent from the project site and impacts to BUOWs do not occur. If a suitable burrow is located, the biologist will determine if an owl is present in the burrow in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Two surveys will be conducted to clear the area: the first one will take place 14-30 days before, and the second one 24 hours before any vegetation removal or ground-disturbing activities. If the approved Biologist determines the burrow is occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season or a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No construction activities will be permitted within the buffer until the young are no longer dependent on the burrow as determined by the Acceptable Biologist. Following completion of the clearance survey, the qualified biologist should prepare and submit a final report documenting the methods and results of the survey.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the construction activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

Please do not hesitate to contact me at ryan.henry@mbakerintl.com should you have any questions or require further information about this report or survey effort.

Sincerely,



Ryan Henry
Natural Resources Manager

Attachments:

Attachment A. Figures
Attachment B. Site Photographs
Attachment C. Species Compendium

References

CDFG (California Department of Fish and Game). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency, Department of Fish and Game.

CDFW (California Department of Fish and Wildlife). 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*

CDFW (California Department of Fish and Wildlife). 2023. RareFind 5, California Natural Diversity Data Base, California.

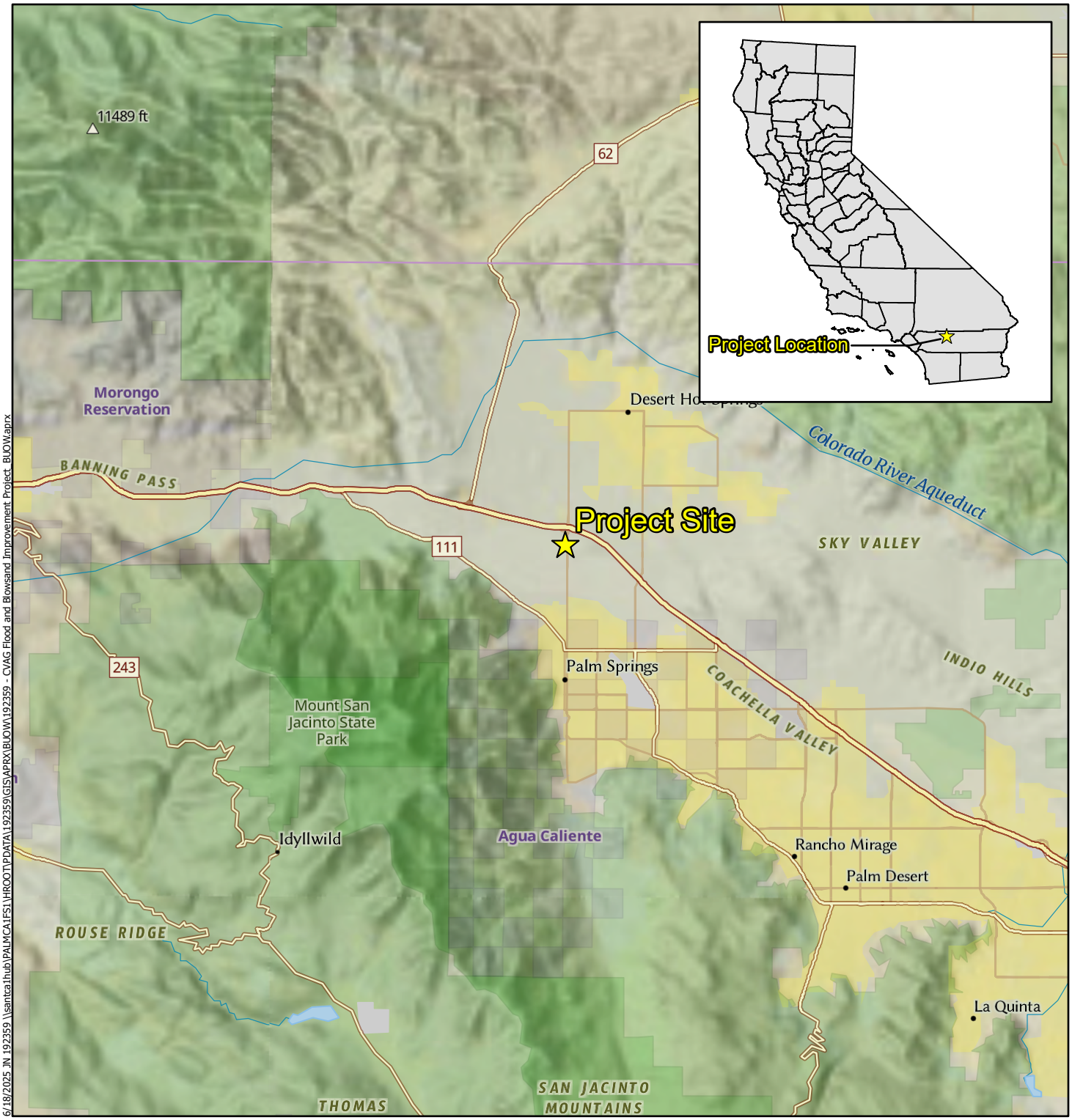
CDFW (California Department of Fish and Wildlife). 2025. California Natural Community List.

CVAG (Coachella Valley Association of Governments). 2007. *Coachella Valley Multiple Species Habitat Conservation Plan*. Accessed online at: http://www.cvmshcp.org/.

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ATTACHMENT A.
FIGURES

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Legend

★ Project Site

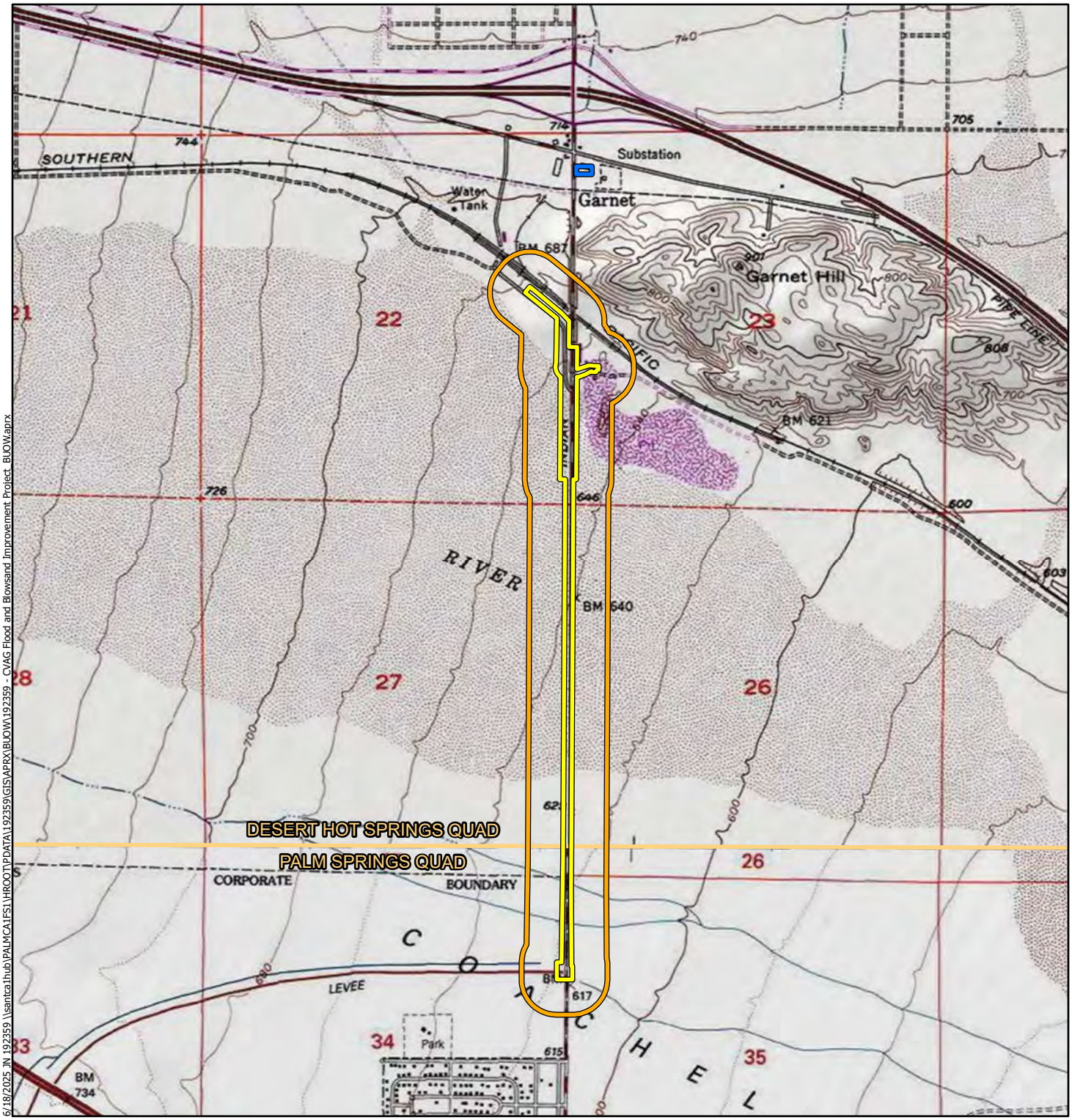
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
BURROWING OWL SURVEY REPORT

0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Riverside County

Regional Vicinity

Figure 1



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\BUOW\192359 - CVAG Flood and Blowsand Improvement Project_BUOWaprx

Legend

- Limits of Disturbance
- Study Area (500ft Buffer)
- Potential Construction Staging Area

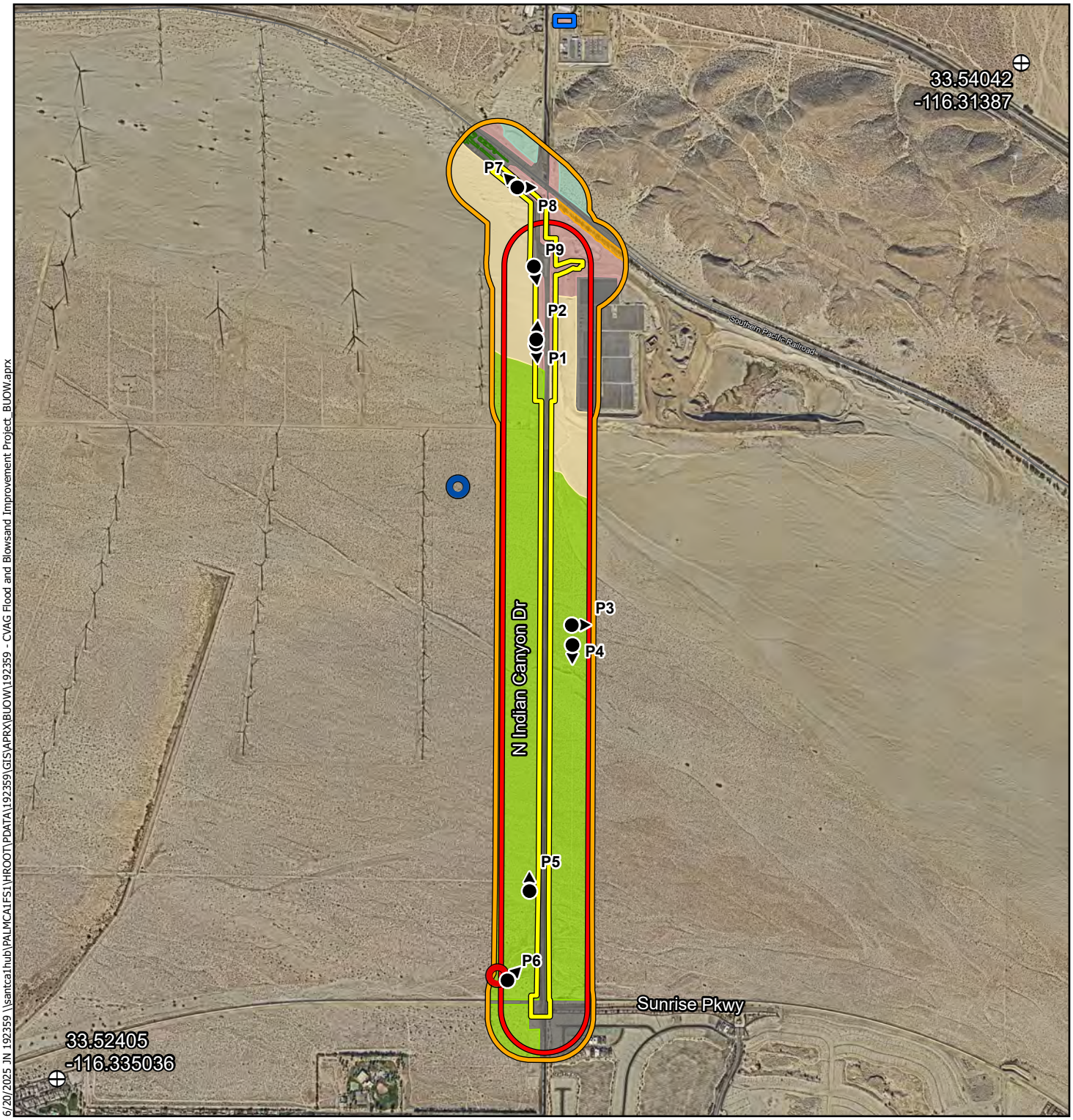
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
BURROWING OWL SURVEY REPORT

0 1,000 2,000
US Feet

Site Vicinity

Source: Esri, ArcGIS Online, Desert Hot Springs and Palm Springs USGS 7.5-Minute topographic quadrangle maps: *Palm Springs, California*

Figure 2



6/20/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\BUOW\192359 - CVAG Flood and Blowsand Improvement Project_BUOW.aprx

Legend

- Reference Point
- Photograph Point and Direction
- Occupied Burrow
- Unoccupied Burrow
- Limits of Disturbance
- 2023 Study Area (500ft Buffer)
- 2025 Study Area (500ft Buffer)
- Potential Construction Staging Area

Vegetation Communities and Land Covers

- Developed (47.2 Acres)
- Disturbed (21.71 Acres)
- Disturbed *Ambrosia salsola - Bebbia juncea* Shrubland Alliance (Ambrosia salsola Association) (168.45 Acres)
- Disturbed Creosote Bush Scrub (5.29 Acres)
- Ephemeral Desert Sand Fields (47.83 Acres)
- Ornamental (0.75 Acres)
- Tamarisk Thickets (1.81 Acres)

Note: The biological study area established for the burrowing owl survey is a 500-foot buffer off the centerline of N. Indian Canyon Road.

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
BURROWING OWL SURVEY REPORT

0 0.13 0.25 Miles

Source: Esri, ArcGIS Online, Riverside County, 2025 Nearmap Imagery

Survey Results

Figure 3

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ATTACHMENT B.
SITE PHOTOGRAPHS

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(insert photographs)



Photograph 1: View looking south from the west side of Indian Canyon Drive near Palm Springs Station Road (May 19, 2023).



Photograph 2: View looking north from west side of Indian Canyon Drive (April 21, 2023).



Photograph 3: View looking east from the east side of Indian Canyon Drive near the central portion of the survey area (June 13, 2023).



Photograph 4: View looking south from the east side of Indian Canyon Drive near central portion of the survey area (June 13, 2023).



Photograph 5: View looking north from the west side of Indian Canyon Drive near the central portion of the survey area (June 9, 2023).



Photograph 6: View looking northeast near a suitable burrow (no burrowing owl sign) west of Indian Canyon Drive from the southern boundary of survey area (April 21, 2023).



Photograph 7: View looking northwest of Palm Springs Station Road and the eastern end of the Amtrak station parking lot west of Indian Canyon Drive (April 14, 2025).



Photograph 8: View looking east from Palm Springs Station Road towards the construction of a new bridge on Indian Canyon Drive (April 14, 2025).



Photograph 9: View looking south of Indian Canyon Drive from Palm Springs Station Road (April 14, 2025).

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ATTACHMENT C.
SPECIES COMPENDIUM

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Table C-1: Wildlife Species List

Scientific Name	**Common Name**	**Special-Status Rank**
Reptiles		
Callisaurus draconoides	zebra-tailed lizard	-
Dipsosaurus dorsalis	desert iguana	-
Phrynosoma platyrhinos	desert horned lizard	-
Birds		
*Columba livia**	rock dove*	-
Corvus brachyrhynchos	American crow	-
Corvus corax	common raven	-
Mimus polyglottos	northern mockingbird	-
Tyrannus vociferans	Cassin's kingbird	-
Zenaida macroura	mourning dove	-
Mammals		
Lepus californicus	black-tailed jackrabbit	-
Ammospermophilus leucurus	white-tailed antelope squirrel	-

* **Non-native species**

Appendix D – Special-Status Plant Survey Report

Michael Baker INTERNATIONAL

We Make a Difference

June 20, 2025 JN 192359

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
Attn: Mr. Amir Modarressi, CVAG PM-Transportation
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92236

RE: Focused Special-Status Plant Survey Report for the Western Coachella Valley Flood and Blowsand Road Improvement Project-Phase One, Indian Canyon Drive, City of Palm Springs, Riverside County, California

Dear Amir Modarressi:

Michael Baker International, Inc. conducted a focused special-status plant survey for the Western Coachella Valley Flood and Blowsand Road Improvement Project (the project) located in the City of Palm Springs, Riverside County, California.[1] The Coachella Valley Association of Governments (CVAG) proposes to implement road improvements along a 1.6-mile portion of Indian Canyon Road, which supports potential habitat for special-status plants. The 2023 focused survey effort encompassed the proposed limits of disturbance from Palm Springs Station Road south to Sunrise Parkway plus a 100-foot buffer (2023 biological study area [BSA]) for a total of 40.16 acres. In 2025, a focused survey effort was conducted within an added area that includes the Amtrak station and a proposed construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue (2025 BSA). This report includes the methods, results, and conclusion/recommendations for future actions based on the 2023 and 2025 survey results.

PROJECT LOCATION

The project site is in the northern portion of the City of Palm Springs and includes a portion of Indian Canyon Drive south of Interstate 10 between Palm Springs Station Road and Sunrise Parkway (Attachment A, Figure 1, Regional Vicinity). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm Springs U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (Attachment A, Figure 2, Site Vicinity). Specifically, the project site includes Assessor's Parcel Numbers 669-080-002, 669-240-006, 669-240-004, and 669-100-008. The project site is located within the Whitewater Floodplain Conservation Area of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP; CVAG 2007).

[1] As used in this report, "special-status" refers to plant species that are federal or State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank by the California Native Plant Society; and State/locally rare plant species.

PROJECT DESCRIPTION

Frequent and prolonged road closures on Indian Canyon Drive due to flood and blowsand events strain the region's transportation system. The proposed project will build road improvements along Indian Canyon Drive and a bridge system that spans a portion of the Whitewater River to mitigate the adverse impacts of flood and blowsand events.

The project's limits of disturbance encompass approximately 1.6 miles of Indian Canyon Drive from Palm Springs Station Road to Sunrise Parkway. Primary improvements will occur within the Indian Canyon Drive right-of-way. Project development will occur in six phases over 24 months and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Staging would occur along the project alignment and southeast of the intersection of Indian Canyon Drive and Garnet Avenue with construction vehicles utilizing Indian Canyon Drive south of Garnet Avenue to access the project site.

EXISTING CONDITIONS

The study area currently consists of a 1.6-mile-long portion of Indian Canyon Drive, an Amtrak station, and undeveloped areas for a majority of the land within a 100-foot buffer outside of the road. The center of the study area and the southernmost end consists of developed land associated with Indian Canyon Road, Sunrise Parkway, and a partially constructed residential development. The study area is generally flat and elevation ranges from approximately 620-680 feet above mean sea level (amsl).

Based on a review of Google Earth Pro aerial imagery from 1985 to 2023 (Google 2023) and results from the field surveys, it was determined that the study area previously consisted of vacant and developed land.

Vegetation Communities/Land Covers

Vegetation communities and land covers occurring in the study area utilized the natural community descriptions provided in the CVMSHCP as a basis for the mapping efforts (Attachment A, Figure 3, CVMSHCP Natural Communities Map). Natural community descriptions were updated with appropriate alliances defined in *A Manual of California Vegetation* [MCV; California Native Plant Society (CNPS) 2023] when possible. Table 1 summarizes the extent of each vegetation community or land cover. Attachment A, Figure 4, illustrates the location of the vegetation communities and land cover types that occur in the study area. Descriptions of each are provided below.

TABLE 1. VEGETATION COMMUNITIES AND LAND COVERS IN THE STUDY AREA

Vegetation Communities and Land Covers	Type	Acres
Natural Vegetation Communities		
Disturbed cheesebush – sweetbush scrub (*Ambrosia salsola – Bebbia juncea* Shrubland Alliance)	Vegetation Community/Land Cover (MCV)	19.90
Ephemeral Desert Sand Fields	Natural Community (CVMSHCP)	2.44
	Subtotal Natural Vegetation Community	*22.34*
Land Covers		
Developed	--	18.54
Disturbed	--	7.25
Ornamental	--	0.01
	Subtotal Land Covers	*25.80*
	TOTAL	**48.14**

Natural Vegetation Communities

Disturbed Cheesebush – Sweetbush Scrub

Approximately 19.90 acres of Disturbed Cheesebush – Sweetbush Scrub (*Ambrosia salsola – Bebbia juncea shrubland alliance*) are located to the east and west of much of the study area along Indian Canyon Drive. Cheesebush (*Ambrosia salsola*) dominates this vegetation community. In addition, common Mediterranean grass (*Schismus barbatus*), Fremont pincushion (*Chaenactis fremontii*), fanleaf crinklemat (*Tiquilia plicata*), and a mixed shrub cover of sweetbush (*Bebbia juncea*), Emory's indigo bush (*Psorothamnus emoryi*), and white bursage (*Ambrosia dumosa*) occur at lower densities. This vegetation community was defined using the MCV.

Ephemeral Desert Sand Fields

Approximately 2.44 acres of Ephemeral Desert Sand Fields are located along the northern section of the study area. These areas are primarily unvegetated due to surface flows, frequently shifting sandy soils due to high velocity winds, and anthropogenic activities (e.g. frequent disturbance from vehicle traffic and illegal dumping). Vegetation that is present primarily consists of sparsely growing or ruderal plant species including desert twinbugs (*Dicoria canescens*) and Saharan mustard (*Brassica tournefortii*), and infrequent patches of scalebroom (*Lepidospartum squamatum*). This vegetation community was defined utilizing the CVMSHCP as it did not meet any membership rules outlined in the MCV.

Land Covers

Developed

Developed areas comprise approximately 18.54 acres of the project site and consist of areas that have been constructed upon or physically altered to a degree that natural soil substrates and native vegetation are no longer supported. Developed portions of the study area include Indian Canyon Drive, a small portion of Palm Springs Station Road where it meets Indian Canyon Drive in the extreme north of the study area, and a small portion of Sunrise Parkway where meets Indian Canyon Drive in the extreme south of the study area.

Disturbed

Disturbed areas are associated with the construction work occurring along Palm Springs Station Road, dirt parking lots, and the quarry east of Indian Canyon Drive within 7.25 acres in the north end of the BSA.

Ornamental

Ornamental plantings, characterized by a diverse array of decorative flora, including California fan palm (*Washingtonia filifera*), blue palo verde (*Parkinsonia florida*), spoon yucca (*Dasylirion wheeleri*), and other native and non-native species are present at the Amtrak station. The purpose of these plantings is to add aesthetic value and contribute to the overall landscaping design of the area. Ornamental plantings cover approximately 0.01 acres of the study area.

Soils Review

According to the US Department of Agriculture (USDA) Web Soil Survey (USDA 2023), the project site is mapped as containing the following soil mapping units: Carsitas gravelly sand, 0 to 9 percent slopes (CdC); Carsitas cobbly sand, 2 to 9 percent slopes, (ChC); Carsitas fine sand, 0 to 5 percent slopes (CkB); and Gravel pits and dumps (GP).

METHODS

Literature and Data Review

Michael Baker conducted a literature and data search of special-status plant species records in a 5-mile buffer of the project site. Sources reviewed included the California Department of Fish and Wildlife's (CDFW) *California Natural Diversity Database RareFind 5* (CNDDB; CDFW 2025a), CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2025), and U.S. Fish and Wildlife Service's *Information for Planning and Conservation Report* (USFWS 2025a). Other sources reviewed included the CVMSHCP (CVAG 2007), the Jepson Herbarium eFlora database (Jepson 2025), and the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2023).

Current conservation status of species was verified through lists and resources provided by the CDFW, specifically the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2025b) and the *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFW

2025c). In addition, Michael Baker reviewed previously prepared reports, survey results, and literature, as available, detailing special-status plants previously observed on or within the vicinity of the project site to gain an understanding of existing site conditions.

Focused Survey

Prior to conducting the 2023 survey, Michael Baker biologists conducted a review of a known reference site to determine whether the target species was identifiable at the time of the survey and to obtain a visual image of the target species, associated habitat, and associated natural community. An additional reference site visit was attempted in 2025, but Michael Baker biologists were unable to access the reference site location due to fencing restricting access to the area.

The focused botanical survey was conducted on April 21 and May 19, 2023, and April 30, May 15, and June 12, 2025 by Michael Baker biologists Trina Ming and Ryan Phaneuf. Site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, and condition of on-site vegetation communities and land covers were noted. The surveys were conducted to document the presence and location(s) of individual special-status plants or populations (if present). The special-status plant surveys were conducted consistent with guidelines provided by the CNPS (2001), U.S. Fish and Wildlife Service (2000), and CDFW (2018). The study area was assessed systematically on foot by walking transects that varied between approximately 10 and 50 feet apart depending on plant density and visibility to allow for 100 percent coverage necessary to inventory plant species. The surveys were floristic in nature, meaning that species encountered were identified to the taxonomic level necessary to determine rarity and listing status.

Plant nomenclature used in this memorandum follows the Jepson eFlora (Jepson 2025) and scientific names are provided immediately following common names of plant species (first reference only). If present, special-status plant populations were documented by counting the total number of individual occurrences and recording their locations with a GPS unit.

Geographic information systems (GIS) ArcGIS Pro software was then used to digitize the vegetation communities and display the data onto an aerial photograph.

RESULTS

Based on the results of the literature review and database searches, Michael Baker botanists identified 40 special-status plant species as potentially occurring in the region surrounding the study area. Of these, 36 species are not expected to occur due to the absence of suitable habitat or because the study area is outside the known range of the species; and 3 species are considered to have low potential to occur based on the presence of low-quality habitat. These species were not analyzed further, thereby refining the analysis to the remaining 1 species with potential to occur in the study area.

No species were determined to have a moderate potential to occur in the study area based on the soils, vegetation communities (habitat) present, elevation range, and previous known locations based on the CNDDB, IPaC, and CNPS Inventory. One species, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), was previously recorded in the CNDDB in 2014 within the study area and therefore determined to have a high potential to occur in the study area.

The potentials for special-status species to occur within the survey area were determined based on known occurrence records and the following:

- **Present**: Species was observed or detected within the survey area during the field survey.
- **High**: Occurrence records (within 20 years) indicate that the species has been known to occur on or within 1 mile of the survey area and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the survey area and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate**: Occurrence records (within 20 years) indicate that the species has been known to occur within 1 mile of the survey area and the site is within the normal expected range of this species. There is suitable habitat within the survey area, but the site is ecologically isolated from any local known extant populations or sightings.
- **Low**: Occurrence records (within 20 years) indicate that the species has been known to occur within 5 miles of the survey area, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the survey area.
- **Not Expected**: There are no occurrence records of the species within 5 miles of the survey area, there is no suitable habitat within the survey area, and/or the survey area is outside of the normal expected range for the species.

Special-status species observed or with a high potential to occur are summarized in Table 2.

TABLE 2. SPECIAL-STATUS PLANT SPECIES OBSERVED OR WITH A HIGH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Federal/State/CRPR	Habitat Preferences and Distribution Affinities	Potential to Occur
Astragalus lentiginosus var. *coachellae*	Coachella Valley milk-vetch	FE/None/1B.2	Annual/perennial herb. Habitats include desert dunes and Sonoran desert scrub (sandy). Found at elevations ranging from 130 to 2,150 feet amsl. Blooming period is February through May.	High: The project site provides suitable habitat for this species. A CNDDB occurrence record indicated that this species was detected within the study area in 2014.

Source: CDFW 2025a; CNPS 2025; USFWS 2025a.
Status Legend
Federal
FE: Federally listed as endangered

State
CRPR (California Rare Plant Rank)
List 1B: Plants rare, threatened, or endangered in California and elsewhere
Threat Rank:
.2 Fairly endangered in California (20% to 80% of occurrences threatened)

The study area is located within USFWS-designated critical habitat for Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (USFWS 2023b). A site visit to a known reference population of Coachella Valley milk-vetch located within approximately 3.6 miles of the study area was conducted on April 21, 2023. Coachella Valley milk-vetch was detected during the reference site visit indicating that it would be identifiable if present in the study area.

No mapped vegetation communities were considered special-status on the *California Sensitive Natural Communities* (CDFW 2023d) document.

No special-status plants were detected in the study area during the focused botanical field surveys. A total of 43 species of native or naturalized plants, 33 native (77%) and 10 non-native (23%), were recorded in the study area. Table 3 summarizes the survey dates, timing, surveyors, and weather conditions for each of the surveys. A complete list of plant species detected during the focused surveys is provided in Attachment C.

TABLE 3. SUMMARY OF SURVEY CONDITIONS

Date	Survey	Biologists	Time	Conditions (Temp / Cloud Cover / Wind)
04/21/2023	Focused Survey #1	RP, TM	0630 - 1130	74.5°F/CC/1.9 mph
05/19/2023	Focused Survey #2	RP, TM	0610 - 0905	80.8°F/Clear/1 mph
04/30/2025	Focused Survey #1	RP, TM	0615 - 0945	73.5°F/Clear/2.9 mph
05/15/2025	Focused Survey #2	RP, TM	0925 - 1000	74.1°F/Clear/3.0 mph
06/12/2025	Focused Survey #3	RP, TM	1030 - 1052	97.5°F/Clear/1.3 mph

Biologists: RP-Ryan Phaneuf and TM-Trina Ming
Conditions: F-Fahrenheit, CC-cloud cover, mph-miles per hour

CONCLUSIONS AND RECOMMENDATIONS

Based on results of the focused botanical surveys, no special-status plants were detected in the study area. As a result, these species are not expected to occur and no further measures are required.

Please do not hesitate to contact me at (949) 330-4184 or ryan.phaneuf@mbakerintl.com or Trina Ming at (949) 472-3495 or trina.ming@mbakerintl.com should you have any questions or require further information.

Sincerely,

Ryan Phaneuf
Biologist
Natural Resources

Trina Ming
Biologist
Natural Resources

Attachments:

Attachment A. Figures
Attachment B. Site Photographs
Attachment C. Species Compendium

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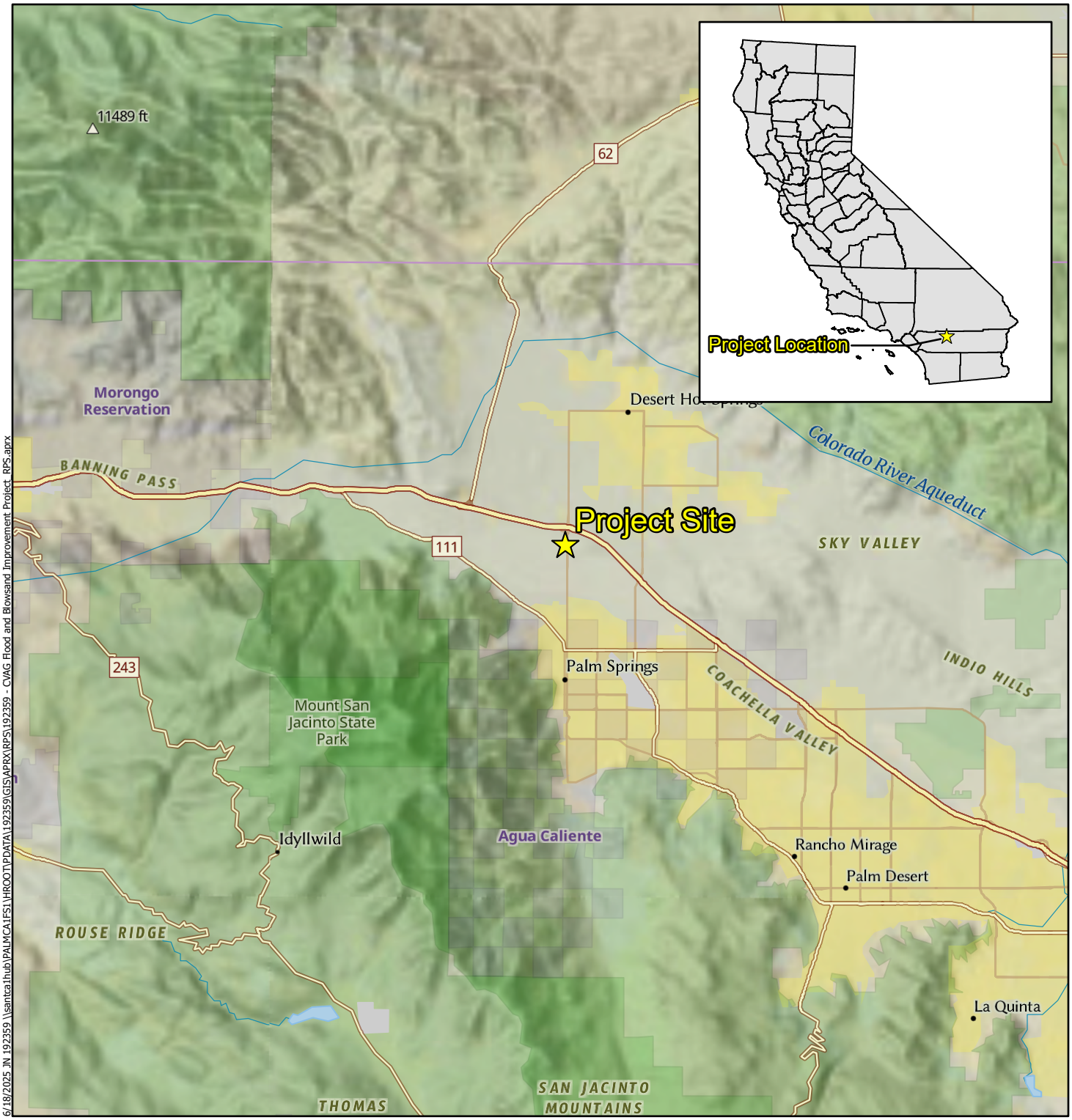
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ATTACHMENT A.
FIGURES

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Legend

★ Project Site

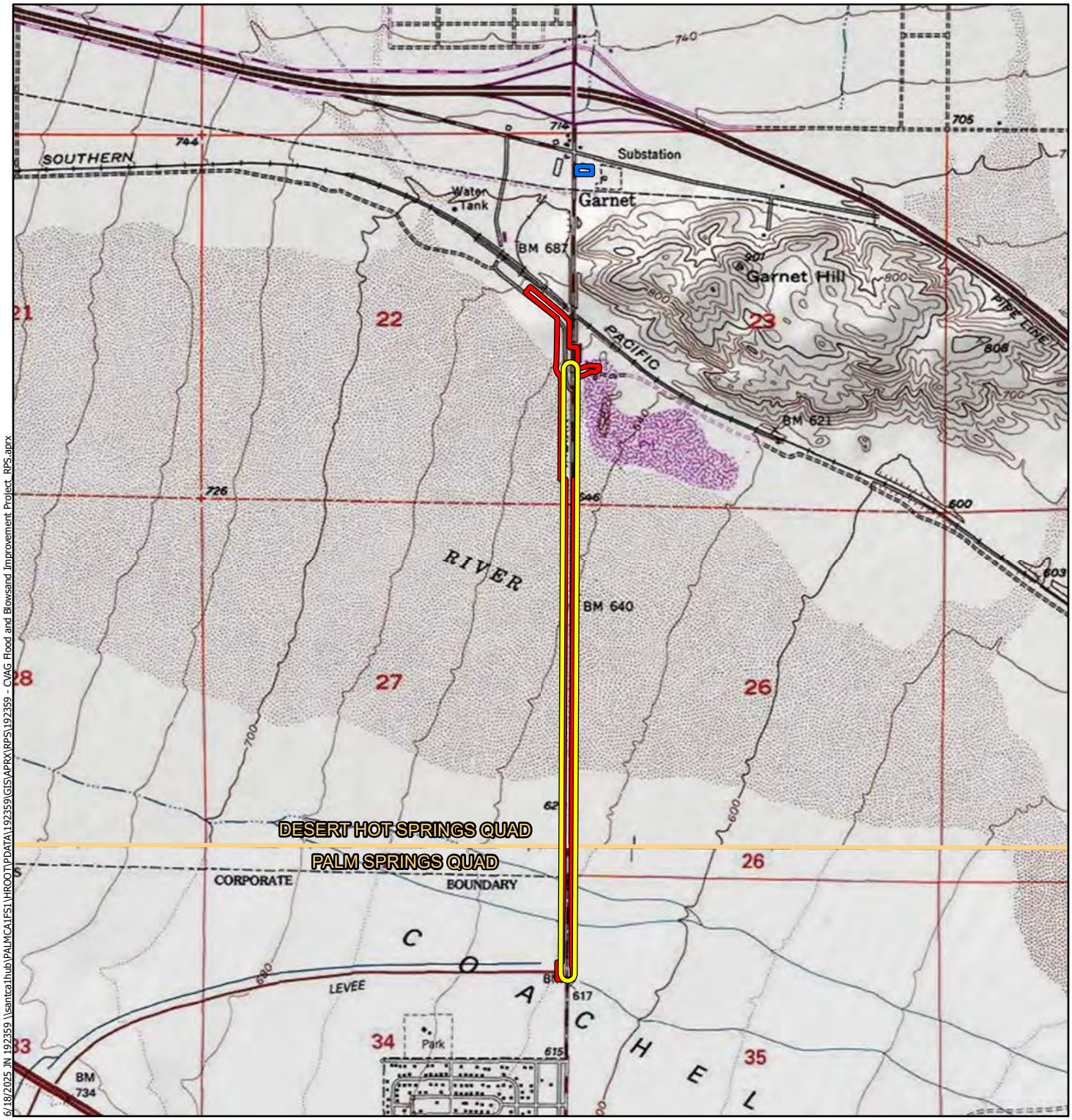
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Riverside County

Regional Vicinity

Figure 1



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\DATA\192359\GIS\APRX\RPS\192359 - CVAG Flood and Blowsand Improvement Project_RPS.aprx

Legend

- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

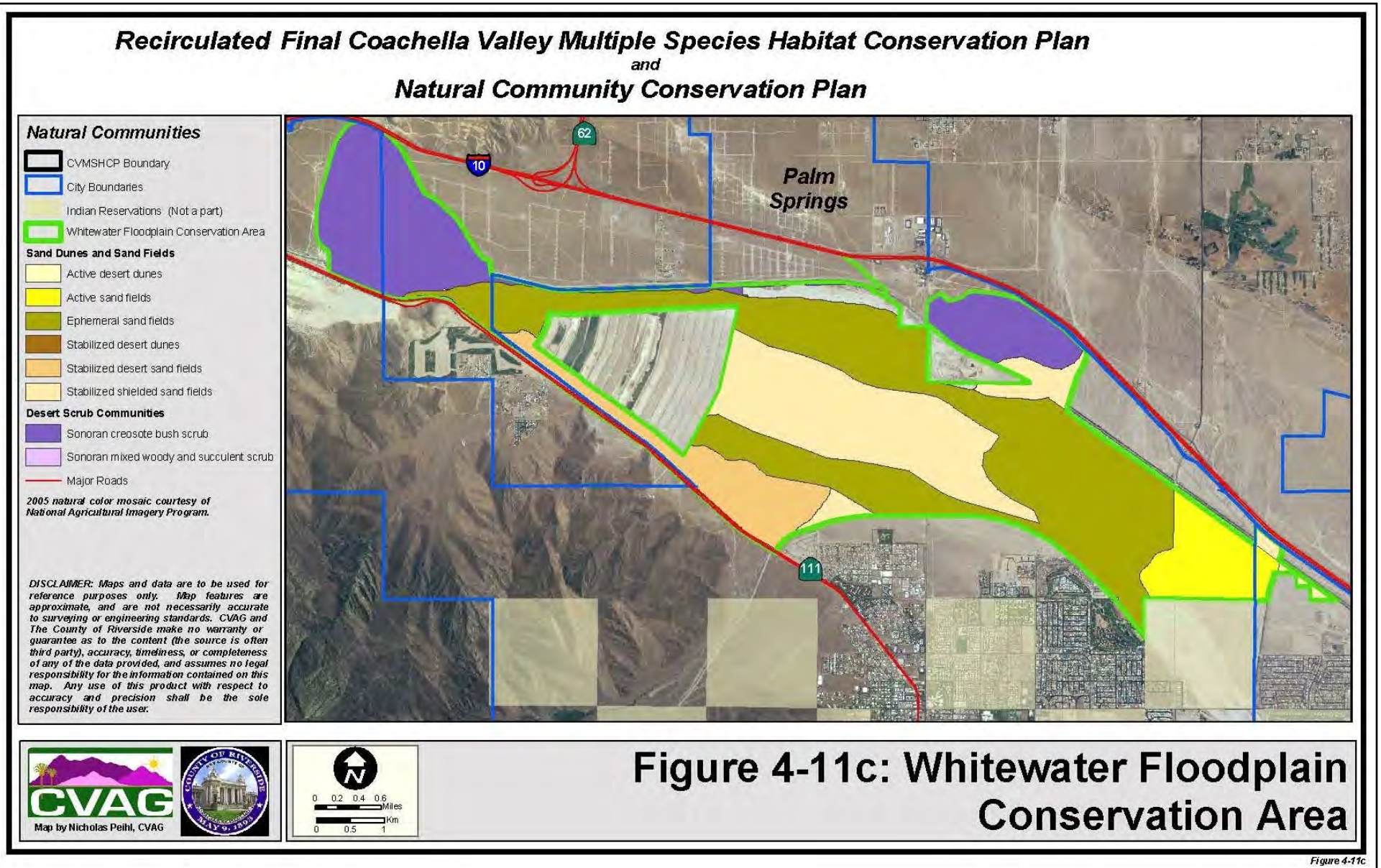
0 1,000 2,000
US Feet

Site Vicinity

Source: Esri, ArcGIS Online, Desert Hot Springs and Palm Springs USGS 7.5-Minute topographic quadrangle maps: *Palm Springs, California*

Figure 2

6/19/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\RPS\192359 - CVAG Flood and Blowsand Improvement Project_RPS.aprx



CVMSHCP Natural Communities Map

Source: Michael Baker Intl, CVCC, Riverside County

Figure 3



6/20/2025 JN \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX

Legend

- Reference Point
- Limits of Disturbance
- Potential Construction Staging Area
- Study Area (2023)

Vegetation Communities and Land Cover Types

- *Disturbed Ambrosia salsola - Bebbia juncea Shrubland* Alliance (*Ambrosia salsola* Association; 19.90 acres)
- Ephemeral Desert Sand Fields (2.44 acres)
- Developed (18.54 acres)
- Disturbed (7.25 acres)
- Ornamental (0.01 acres)

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

0 0.15 0.3 Miles

Vegetation Communities and Land Cover Types

Source: Esri, ArcGIS Online, Riverside County, 2025 Nearmap Imagery

Figure 4

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ATTACHMENT B.
SITE PHOTOGRAPHS

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Photograph 1: View of the Ephemeral Desert Sand Fields along the northeastern portion of the study area, facing south (2023).



Photograph 2: View taken from the northeastern portion of study area, taken south of Photograph 1 and facing southwest (2023).



Photograph 3: View of the Ephemeral Desert Sand Fields
in the northwestern section of the site, facing southeast (2023).



Photograph 4: View of the northern section of the site, facing north (2023).



Photograph 5: View of the Disturbed Cheesebush – Sweetbush Scrub within the central portion of the study area, facing southwest (2023).



Photograph 6: Representative view of the conditions within the southern sections of the study area. Photograph depicts Disturbed Cheesebush – Sweetbush Scrub along the margins of Indian Canyon Drive (2023).



Photograph 7: View of the southern portion of the study area, taken south of Photograph 6 (2023).



Photograph 8: View taken at the southernmost section of the study area, facing north (2023).



Photograph 9: View of the northern portion of the additional area added to the study area in 2025, looking northwest along Palm Springs Station Road (2025).



Photograph 10: View looking west toward Indian Canyon Drive within the proposed construction staging area (2025).



Photograph 11: View of the northern portion of the additional area added to the study area in 2025, looking south along Palm Springs Station Road (2025).



Photograph 10: View of the northern portion of the additional area added to the study area in 2025, looking north along Palm Springs Station Road (2025).

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ATTACHMENT C.
SPECIES COMPENDIUM

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VASCULAR SPECIES

EUDICOTS

ASPARAGACEAE—Asparagus Family
- *Dasylirion wheeleri*—spoon yucca*

ASTERACEAE—Sunflower Family
- *Ambrosia dumosa*—white bursage
- *Ambrosia salsola*—cheesebush
- *Bebbia juncea*—sweetbush
- *Chaenactis fremontii*—pincushion flower
- *Dicoria canescens*—desert twinbugs
- *Encelia farinosa*—brittle bush
- *Ericameria paniculata*—black-stem rabbitbrush
- *Lepidospartum squamatum*—scale broom
- *Logfia depressa*—dwarf cottonrose
- *Malacothrix glabrata*—smooth desertdandelion
- *Palafoxia arida* var. *arida*—desert palafox
- *Psathyrotes ramosissima*—velvet turtleback
- *Stephanomeria pauciflora*—brownplume wirelettuce
- *Oncosiphon pilulifer*—stinknet*

BORAGINACEAE—Borage Family
- *Cryptantha angustifolia*—Panamint cryptantha
- *Phacelia* sp.—phacelia
- *Tiquilia plicata*—fanleaf crinklemat

BRASSICACEAE—Mustard Family
- *Brassica tournefortii*—Tournefort's mustard*
- *Hirschfeldia incana*—shortpod mustard*

CHENOPODIACEAE—Goosefoot Family
- *Atriplex canescens*—fourwing saltbush
- *Salsola tragus*—prickly Russian thistle*

EUPHORBIACEAE—Spurge Family
- *Croton californicus*—California croton
- *Euphorbia polycarpa*—smallseed sandmat

FABACEAE—Legume Family
- *Lupinus concinnus*—bajada lupine
- *Neltuma odorata*—honey mesquite
- *Psorothamnus emoryi*—dyebush

GERANIACEAE—Geranium Family
- *Erodium cicutarium*—redstem stork's bill*

LOASACEAE—Loasa Family
- *Petalonyx thurberi* ssp. *thurberi* —Thurber's sandpaper plant

NYCTAGINACEAE—Four O'clock Family

VASCULAR SPECIES

Abronia villosa var. *villosa*—desert sand verbena
ONAGRACEAE—Evening Primrose Family
Camissoniopsis pallida—paleyellow suncup
Chylismia claviformis—browneyes
PLANTAGINACEAE—Plantain Family
Plantago patagonica—woolly plantain
POLYGONACEAE—Buckwheat Family
Eriogonum thomasii—Thomas' buckwheat
SOLANACEAE—Nightshade Family
Datura wrightii—sacred datura
ZYGOPHYLLACEAE—Caltrop Family
Larrea tridentata—creosote bush
Tribulus terrestris—puncturevine*

GYMNOSPERMS AND GNETOPHYTES

EPHEDRACEAE—Ephedra Family
Ephedra nevadesis—Nevada joint fir

MONOCOTS

ARECACEAE—Palm Family
Washingtonia filifera—California fan palm
POACEAE—Grass Family
Hilaria rigida—big galleta
Hordeum murinum—wall barley*
Pennisetum setaceum—crimson fountain grass*
Schismus barbatus—common Mediterranean grass*

Appendix E – Aquatic Resources Delineation Report

WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT– PHASE ONE, INDIAN CANYON DRIVE

CITY OF PALM SPRINGS, RIVERSIDE COUNTY, CALIFORNIA

DRAFT AQUATIC RESOURCES DELINEATION REPORT

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June 2025
JN 192359

EXECUTIVE SUMMARY

At the request of the Coachella Valley Association of Governments, Michael Baker International has prepared this Aquatic Resources Delineation Report for the Western Coachella Valley Flood and Blowsand Road Improvement Project located in the City of Palm Springs, Riverside County, California. Following a comprehensive desktop analysis of literature and data on aquatic resources within the region, site investigations were conducted on May 24, 2023, and April 14, 2025 by qualified wetland delineators to determine the jurisdictional limits of waters of the U.S. and waters of the State (including streambeds and potential wetlands), located within the proposed project's limits of disturbance for a total study area of approximately 47.6 acres. The delineation was conducted following the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (USACE 2025), *Streamflow Duration Assessment Methods for the Arid West and Western Mountains of the United States,* Version 2.0 (Mazor et al. 2024), and *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2021), and in compliance with Section 1602 of the California Fish and Game Code.

The study area contains a total of 5.03 acres of jurisdictional waters of the U.S. and 6.48 acres of jurisdictional waters of the State. Jurisdictional areas consist of non-wetland desert dry wash/ephemeral streambeds associated with the Whitewater River and Chino Creek. These features occur on both sides of Indian Canyon Drive.

Placement of fill material or alteration of the streambed within these waters is subject to the regulatory approvals by the US Army Corps of Engineers, Colorado River Regional Water Quality Control Board, and California Department of Fish and Wildlife, collectively referred to as regulatory agencies.

This report presents Michael Baker's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdiction. If the results contained in this report are confirmed by the regulatory agencies, then any construction activities in the identified jurisdictional limits would require acquisition of regulatory permits.

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Appendix G Antecedent Precipitation Tool Results

ACRONYMS AND ABBREVIATIONS

APT	Antecedent Precipitation Tool
CDFW	California Department of Fish and Wildlife
GIS	Geographic Information System
Michael Baker	Michael Baker International
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OHWM	ordinary high water mark
OHWM Manual	*National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams*
The Procedures	*State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*
project	Western Coachella Valley Flood and Blowsand Road Improvement Project
Revised Definition	*Revised Definition of "Waters of the United States"; Conforming*
RWQCB	Regional Water Quality Control Board
SDAM	*Streamflow Duration Assessment Methods for the Arid West and Western Mountains of the United States*
SWRQB	State Water Resources Control Board
TNW	Traditionally Navigable Water
UPL	Upland
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey

1 INTRODUCTION

This report has been prepared to document the jurisdictional authority of the US Army Corps of Engineers (USACE), the Colorado River Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW), collectively referred to as the regulatory agencies, pursuant to Sections 401 and 404 of the federal Clean Water Act, the California Porter-Cologne Water Quality Control Act, and Sections 1600 et seq. of the California Fish and Game Code. The analysis presented in this report is supported by field surveys and verification of site conditions conducted on May 24, 2023, and April 14, 2025.

This jurisdictional aquatic resource report explains the methods used to define the regulatory authority of the aforementioned regulatory agencies and documents the findings made during the field delineation. This report presents Michael Baker International's best effort at documenting the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any aquatic resources assessment, only the regulatory agencies can make a final determination of jurisdictional boundaries.

1.1 PROJECT LOCATION

The project site includes an approximate 1.6-mile (8,448 linear foot) portion of Indian Canyon Drive located south of Interstate 10 between Palm Springs Station Road and Sunrise Parkway in the City of Palm Springs (Appendix A, Figure 1, Regional Vicinity). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm Springs US Geological Survey (USGS) 7.5-minute quadrangle maps (Appendix A, Figure 2, Site Vicinity). Specifically, the project site includes Assessor's Parcel Numbers 669-080-002, 669-240-006, 669-240-004, and 669-100-008. The study area established for the delineation includes the proposed project's limits of disturbance as shown in Appendix A, Figure 3, Proposed Project, which encompasses approximately 47.6 acres.

1.2 PROJECT DESCRIPTION

Frequent and prolonged road closures on Indian Canyon Drive due to flood and blowsand events strain the region's transportation system. The proposed project will build road improvements along Indian Canyon Drive and a bridge system that spans a portion of the Whitewater River to mitigate the adverse impacts of flood and blowsand events.

The project's limits of disturbance encompass approximately 1.6 miles of Indian Canyon Drive from Palm Springs Station Road to Sunrise Parkway. Primary improvements will occur within the Indian Canyon Drive right-of-way. Project development will occur in six phases over 24 months and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Staging would occur along the project alignment and southeast of the intersection of Indian Canyon Drive and Garnet Avenue with construction vehicles using Indian Canyon Drive south of Garnet Avenue to access the project site.

2 METHODS

The analysis presented in this report is supported by a literature review and field surveys conducted on May 24, 2023, and April 14, 2025, by qualified wetland delineators and regulatory specialists April Nakagawa, Geoffrey Chan, Ryan Henry, and John Parent. A field delineation was conducted to determine the jurisdictional limits of waters of the U.S. and waters of the State (including potential wetlands), located within the boundaries of the study area.

2.1 DESKTOP ANALYSIS

Prior to conducting the field delineation, Michael Baker conducted a thorough review of relevant literature and materials to obtain a general understanding of the environmental setting and preliminarily identify features/areas within the project site that may fall under the jurisdiction of the regulatory agencies. Each source that was reviewed is summarized below.

Watershed Review

The study area is located within the Garnet Hill sub-watershed and Whitewater River watershed, which are part of the larger Salton Sea watershed (SWRCB 2005). The Salton Sea watershed encompasses one-third of the Colorado River Basin Region (approximately 8,360 square miles). The Salton Sea is located in a closed desert basin in Riverside and Imperial Counties in Southern California, south of Indio and north of El Centro. The basin is more than 200 feet below mean sea level and has no natural outlet. Although lakes have existed in this basin in the past, the current body of water formed in 1905 when a levee broke along the Colorado River, causing its flows to enter the basin for about 18 months. The study area is approximately 38 miles northwest of the Salton Sea.

Local Climate

The Salton Sea Watershed is characterized by a year-round desert climate, with warm, sunny, dry summers, and cool, cloudy, mild winters. According to the Western Regional Climate Center, the average maximum temperature in this area of California is 108.2° F annually, and average minimum temperature is at 42.3° F annually. The warmest month on average is July at a maximum of 108.2° F, and the coolest months on average are December and January at a minimum of 42.3° F. Most precipitation occurs between November and March in the form of rain, with occasional and steadily increasing precipitation through the fall and winter; the average total precipitation is 5.49 inches annually. Snowfall does not typically occur within this area of the watershed regardless of the season.

USGS Topographic Quadrangle Map

The USGS 7.5-minute topographic map series shows geological formations and their characteristics, describing the physical setting of an area through contour lines and major surface features including lakes, rivers, streams, buildings, landmarks, and other factors that may fall

under an agency's jurisdiction. Additionally, the maps depict topography through color and contour lines, which are helpful in determining elevations and latitude and longitude within an area.

The study area is located in the southeastern portion of the Desert Hot Springs and northeastern portion of the Palm Springs USGS 7.5-minute topographic map series. The study area is relatively flat with no areas of significant topographic relief. On-site elevations range at approximately 620–680 feet above mean sea level and gently slope to the east. Surrounding land uses consist of vacant/undeveloped land, rural residential structures, improved/unimproved roadways, an Amtrak rail line, gravel mining operation, solar arrays, wind turbines, and transmission towers. No additional drainage features, ponds, basins, or gravel pits were noted.

National Hydrography Dataset

The USGS National Hydrography Dataset was reviewed to assess potential surface water features occurring in the study area (USGS 2023b). The general locations for the Whitewater River and Chino Creek are illustrated in the USGS dataset (Appendix A, Figure 3). Both drainages are tributaries to the Salton Sea and are identified in the State Water Resources Control Board's *Water Quality Control Plan* (SWRCB 2005) as major surface water resources. These drainages are located just downstream (and to the southeast) of the regionally significant groundwater recharge basins and diversion berms that were constructed in the 1920s to capture natural flows from the Whitewater River channel. The reach of the Whitewater River from the Whitewater recharge basins to Indian Canyon Drive is defined as a Wash (Intermittent or Ephemeral Stream) in the plan.

Aerial Photographs

Prior to conducting the field delineation, current and historical aerial photographs (1985-2025) of the study area were reviewed as available from Google Earth Pro Imaging (Google, Inc. 2025). Aerial photographs can be useful during the delineation process, as they often indicate the presence, if any, of drainage features and riparian/riverine habitat within the boundaries of the study area. Review of the aerial imagery revealed that the study area has remained relatively the same since 1985. The wind energy structures and flood control features to the west appear in the same configuration and some migration of the Whitewater River's active flood conveyance system is apparent. No additional drainage features were noted.

Soil Survey Review

Soils within the study area were researched prior to the field delineation using the Natural Resources Conservation Service (NRCS) Web Soil Survey for the Riverside County, Coachella Valley Area, California (NRCS 2023). Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily used to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color).

According to the Web Soil Survey (NRCS 2023), the project site is mapped as containing the following soil mapping units: Carsitas gravelly sand, 0 to 9 percent slopes (CdC); Carsitas cobbly sand, 2 to 9 percent slopes, (ChC); and Gravel pits and dumps (GP).

The NRCS Hydric Soils List of California (NRCS 2023) was also reviewed to verify whether on-site soils were hydric. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions. It should be noted that lists of hydric soils along with soil survey maps provide off-site ancillary tools to assist in wetland determinations, but they are not a substitute for field investigations. According to the hydric soils list, none of the on-site soil units are listed as hydric in the Riverside County, Coachella Valley Area.

National Wetlands Inventory

The U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) (USFWS 2023) was reviewed to identify the general location of wetlands, riparian, and other deepwater habitats that have been mapped to promote an understanding and conservation of wetland resources throughout the nation. According to the NWI, riverine wetlands have been mapped in the southern portion of the study area and associated with Chino Creek. The NWI classifies riverine systems as encompassing all wetlands and deepwater habitats contained within a channel aside from wetlands dominated by vegetation and habitats that interact with the ocean. Two types of riverine features were mapped: intermittent riverine streambed that is seasonally flooded (R4SBC) and an unknown perennial riverine feature with an unconsolidated bottom that is semi-permanently flooded (R5UBFx). No additional wetland features have been mapped in or immediately adjacent to the study area.

Flood Zone

The Federal Emergency Management Agency's National Flood Hazard Layer Viewer (FEMA 2023) was reviewed for flood data for the study area. Based on Flood Insurance Rate Map No. 06065C0895G, the entire study area is located in Zone A or areas subject to inundation by the 1% annual chance flood event.

2.2 FIELD DELINEATION

Following the initial data collection, Michael Baker wetland delineators conducted an on-site delineation of the study area on May 24, 2023, and April 14, 2025, using the most recent, agency-approved methods to identify and map the extent of federal and State jurisdictional features (i.e., wetland and non-wetland waters of the U.S., waters of the State, streambed, riparian vegetation). While in the field, jurisdictional features were recorded on an aerial base map at a scale of 1:2,400 (1 inch = 200 feet) using topographic contours and visible landmarks as guidelines. Taxonomic nomenclature for plant species is in accordance with *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Data points were obtained with a Garmin Map Global Positioning System to record and identify specific widths for features and the locations of photographs, soil points, and other pertinent jurisdictional features, if present. These data were then transferred as

a GIS shapefile and added to the project's jurisdictional exhibits. The jurisdictional exhibits were prepared using Esri ArcGIS software.

2.2.1 US Army Corps of Engineers Jurisdiction

For the purposes of identifying potentially jurisdictional wetlands and waters of the U.S. for the USACE in compliance with Section 404 of the Clean Water Act, the field delineation methods implemented were consistent with the approach outlined in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Regional Supplement; USACE 2008), the *Streamflow Duration Assessment Methods for the Arid West and Western Mountains of the United States,* Version 2.0 (SDAM, Mazor et al. 2024), and the *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (OHWM Manual; USACE 2025). The delineation was based on field observations and indicators of an ordinary high water mark (OHWM), as well as positive indicators for wetland vegetation, hydrology, and soils. Wetland indicator status for plant species was confirmed using the National Wetland Plant List (USACE 2023). The subsequent analysis also takes into account the EPA and the USACE's joint document the *Revised Definition of "Waters of the United States"; Conforming* (Revised Definition, Federal Register 2023).

- **Ordinary High Water Mark Assessment.** Pursuant to the OHWM Manual, delineators identified the established and maintained physical and biological signatures at the boundaries of each active channel. The OHWM Manual addresses the underlying hydrologic and geomorphic concepts pertaining to the OHWM and the field indicators, methods, and additional lines of evidence used to assess and delineate the OHWM. Delineation of the active channel signature (i.e., the OHWM) is based on identification of three primary physical or biological indicators (USACE 2008):
    - Topographic break in slope
    - Change in sediment characteristics
    - Change in vegetation characteristics (species or cover)
- **Stream Duration Assessment.** The SDAM for the Arid West and Western Mountains of the United States is intended to offer a rapid and repeatable method to distinguish between ephemeral, intermittent, and perennial streamflow regimes. Variables assessed when determining the stream duration of a given reach include the following:
    - Mean bankfull channel width
    - Aquatic macroinvertebrates: abundance of perennial indicator taxa
    - Slope
    - Number of hydrophytic plant species
    - Prevalence of rooted upland plants in the streambed

- Algal cover
- Differences in vegetation
- Riffle-pool sequence

- **Wetland Indicator Assessment.** Pursuant to the OHWM Manual and Regional Supplement, key explicit environmental criteria for determining the presence of potential federal and state jurisdictional wetlands in the study area include:
  - Soil: Soil characteristics that result from the influence of periodic or permanent inundation or soil saturation for extended periods that further affect anaerobic conditions (i.e., chemical reduction in the soils or hydric soils).
  - Hydrology: The presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by groundwater or surface water.
  - Vegetation: A prevalence of vegetation typically adapted for life in saturated soil conditions (i.e., hydrophytic vegetation).

  Positive indicators of all three parameters are normally present in wetlands. Presence of primary and secondary wetland hydrology indicators were documented for each identified aquatic resource feature in the study area. Potential jurisdictional waters exhibiting atypical conditions were delineated in accordance with the Regional Supplement for situations involving vegetation, soil, and hydrology that may be naturally problematic and/or significantly disturbed.

  - **Antecedent Precipitation Tool**. For this project location, the Antecedent Precipitation Tool (APT), Version 2.0.0 was used to assess precipitation normalcy at the time of field data collection. The APT is a tool used by USACE and the EPA to determine whether field data were collected under “dry,” “normal,” or “wet conditions. Publicly available precipitation data for the three months prior to the site visit date(s) were reviewed to determine the climatic condition, and data from the previous 30 years were used to determine whether the assessment occurred during a typical year.

2.2.2 California Department of Fish and Wildlife Jurisdiction

For the purposes of identifying potentially jurisdictional wetlands and waters of the State for the CDFW in compliance with Section 1602 of the California Fish and Game Code, Michael Baker delineated the top of bank for stream and channels or the limit of the adjacent riparian vegetation, whichever was greater.

2.2.3 Regional Water Quality Control Board Jurisdiction

For the purposes of identifying potentially jurisdictional wetlands and waters of the state for the RWQCB in compliance with Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act, the field delineation methods implemented were consistent with the approach

outlined in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), Regional Supplement (USACE 2008), the OHWM Manual (USACE 2025), and the *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (The Procedures, SWRCB 2021). The assessment relied on field observations and indicators of an OHWM, as well as positive indicators for wetland vegetation, hydrology, and soils. Areas regulated by the RWQCB are generally coincident with the USACE but include features isolated from waters of the U.S. that have evidence of surface water inundation.

The Procedures adopted by the SWRQB contain a wetland definition and wetland delineation procedures. The Procedures are largely consistent with the three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology implemented by the USACE and outlined in the Regional Supplement to the USACE Manual. However, one exception is that an area can naturally lack vegetation and still qualify as a wetland water of the State if it satisfies both the hydric soil and wetland hydrology parameters.

3 EXISTING CONDITIONS

3.1 LANDSCAPE SETTING

The study area is located in the Coachella Valley of Riverside County, California. The study area includes a portion of the Whitewater River that conveys significant seasonal stormflows across the study area (and Indian Canyon Drive) from west to east. The arid region also experiences frequent high winds that have created active, shielded, and ephemeral dunes and sand fields, also referred to as blowsand habitats. These blowsand areas migrate and often cover surface roads and result in frequent closures due to sand buildup. During the site visit, such an event occurred; an excavator was observed clearing blowsands along the northwestern project boundary by Palm Springs Station Road to maintain clearance along northern Indian Canyon Drive.

According to the *Coachella Valley Multiple Species Habitat Conservation Plan* (CVMSHCP; CVAG 2007), two types of vegetation communities/land covers were mapped in the Whitewater Floodplain Conservation Area, which overlaps the study area: ephemeral desert sand fields and stabilized shielded desert sand fields. During the field delineation, cheesebush (*Ambrosia salsola*, UPL) was identified as a dominant species in the study area. Other common plant species included Mediterranean grass (*Schismus barbatus,* UPL), Fremont pincushion (*Chaenactis fremontii*, UPL), and fanleaf crinklemat (*Tiquilia plicata*, UPL), along with a mixed shrub cover of sweetbush (*Bebbia juncea*, UPL), Emory's indigo bush (*Psorothamnus emoryi*, UPL), and white bursage (*Ambrosia Dumosa*, UPL) occurring at lower densities. Vegetation in the channels was sparse and, in some cases, absent as a result of the characteristic flood magnitude for these environments, which produce short duration, high-intensity rainfall and subsequent substantial runoff. Other areas of disturbance include desert twinbugs (*Dicoria canescens*, UPL) and Saharan mustard (*Brassica tournefortii*, UPL), and infrequent patches of scalebroom (*Lepidospartum squamatum,* FACU). Upland/terrace locations generally exhibited higher densities of vegetation. Appendix A, Figure 4, Vegetation Communities/Land Covers provides a general map of vegetation communities and land covers in the study area.

3.2 AQUATIC RESOURCES

3.2.1 Overview

Following is a summary of the aquatic resources delineated within the study area, including each resource's preliminary regulatory status. The drainages investigated in the study area are tributaries to the Salton Sea, which is a Traditional Navigable Water (TNW). Therefore, these features qualify as waters of the U.S. and fall under the regulatory authority of the USACE.

Representative photographs of the study area are provided in Appendix B. All data collected in the field is provided in Appendices C, D, E, and F. Appendix A, Figure 5, Jurisdictional Delineation Map provides a complete geographic overview of the features discussed. Table 1 summarizes

the aquatic resources in the study area, including their classification, locations, areas, and lengths.

Table 1. Summary of Aquatic Resources in the Study Area

Aquatic Resources	ID	Name	Classification Code [1]	Location: Latitude	Location: Longitude	Total Area USACE/ CDFW (acres)	Total Length (linear feet)
Non-Wetland Waters of the U.S./ State	WW-1	Whitewater River 1	R4SBC	33.891221	-116.545781	1.52 / 2.97	101.07
Non-Wetland Waters of the U.S./ State	WW-2	Whitewater River 2				2.68 / 2.68	203.79
Non-Wetland Waters of the U.S./ State	WW-3	Whitewater River 3				0.05 / 0.05	49.19
					Whitewater River Subtotal	***4.25 / 5.70***	***354.05***
Non-Wetland Waters of the U.S./ State	CC-1	Chino Creek 1	R4SBC	33.872998	-116.545765	0.31 / 0.31	142.36
Non-Wetland Waters of the U.S./ State	CC-2	Chino Creek 2				0.38 / 0.38	202.19
Non-Wetland Waters of the U.S./ State	CC-3	Chino Creek 3				0.07 / 0.07	80.20
Non-Wetland Waters of the U.S./ State	CC-4	Chino Creek 4				0.02 / 0.02	76.17
					Chino Creek Subtotal	***0.78 / 0.78***	***500.92***
					Non-Wetland Waters of the U.S./State Total	**5.03 / 6.48**	**854.97**
Potential Wetlands	N/A	N/A	N/A	N/A	N/A	N/A	N/A
					Potential Wetlands Total	**N/A**	**N/A**

Notes:
[1] Classification Code (FGDC 2013): R4SBC = riparian, intermittent, seasonally flooded

3.2.2 Non-Wetland Waters of the U.S./State

Portions of two ephemeral drainage features were identified in the study area during the site visit: Whitewater River and Chino Creek. Each feature is described below.

Whitewater River

The Whitewater River is an ephemeral channel that originates off-site, flowing east/southeast and overlapping both western and eastern boundaries. The river enters the western project boundary as one mainstem (WW1) before splitting into multiple channels (WW2 and WW3) and diffusing as it reaches the Indian Canyon Drive shoulder. All of the channels converge along the east side of the roadway and continue flowing southeast out of the eastern project boundary. Beyond the project boundary, the Whitewater River continues flowing southeast for approximately 50 miles before draining into the Salton Sea. No standing or flowing water was observed in association

with the Whitewater River. The river exhibited clear evidence of hydrology, and an OHWM ranging from 50 feet to 700 feet in width was observed on-site via geomorphic, vegetation, sediment, and ancillary indicators (Appendix D, OHWM Data Sheets and Appendix E, Aquatic Resource Excel Sheet). The Whitewater River system is characterized by loose sandy soils and gravel that is mostly devoid of any vegetation within the streambed.

A desktop SDAM indicates that the subject reach of the Whitewater River is likely ephemeral. However, this Strahler reach of the Whitewater River receives flows from Garnet Wash and the San Gorgonio River upstream; these flows result in regular ponding within the maintained earthen flood control berms and basins located approximately 1.8 miles west of the project site. Recurring saturation is also visible throughout the Strahler reach on aerial imagery, and the Whitewater River exhibits a continuous surface connection to a TNW. Therefore, it is assumed that this portion of the Whitewater River is likely intermittent and subject to USACE jurisdiction. The APT results indicate that the site visits were conducted during normal conditions (Appendix F, *Stream Duration Assessment Method Data Sheets* and Appendix G, *Antecedent Precipitation Tool Results*).

The USACE and RWQCB jurisdictional width encompassed the lateral extent of the Whitewater River's OHWM within the study area. A total of 4.25 acres of USACE and RWQCB jurisdictional non-wetland waters of the U.S. are associated with the Whitewater River in the study area.

The CDFW jurisdictional width encompassed the lateral extent of the Whitewater River's top-of-bank in the study area. A total of 5.70 acres of CDFW jurisdiction, all of which would be considered unvegetated waters of the State, are associated with the Whitewater River in the study area.

Chino Creek

Chino Creek is an ephemeral channel which originates off-site, flowing from the San Jacinto Mountains east and overlapping both western and eastern boundaries. Chino Creek enters the western project boundary as several channels (CC1, CC2, CC3, and CC4), diffusing as it reaches the Indian Canyon Drive shoulder. Chino Creek continues flowing east as multiple channels on the east side of Indian Canyon Drive and continues out of the eastern boundary. Beyond the project boundary, Chino Creek continues flowing east for 1.5 miles before joining with the Whitewater River. No standing or flowing water was observed in association with Chino Creek or any of its channels. Chino Creek exhibited clear evidence of hydrology, and an OHWM ranging from 15 feet to 150 feet in width was observed on-site via geomorphic, vegetation, sediment, and ancillary indicators (Appendix D, OHWM Data Sheets and Appendix E, Aquatic Resource Excel Sheet). The Chino Creek system is characterized by loose sandy soils and gravel that supports sparse upland non-native vegetation such as Mediterranean grass, Fremont pincushion, fanleaf crinklemat, and Saharan mustard.

A desktop SDAM indicates that the subject reach of Chino Creek is likely ephemeral. However, recurring saturation is also visible throughout this Strahler reach of Chino Creek on aerial imagery, and Chino Creek exhibits a continuous surface connection to a TNW. Therefore, it is assumed that this portion of Chino Creek is likely intermittent and subject to USACE jurisdiction. The APT results indicate that the site visits were conducted during normal conditions (Appendix F, *Stream*

Duration Assessment Method Data Sheets and Appendix G, *Antecedent Precipitation Tool Results*).

The USACE and RWQCB jurisdictional width encompassed the lateral extent of Chino Creek's OHWM within the study area. A total of 0.78 acres of USACE and RWQCB jurisdictional non-wetland waters of the U.S. are associated with Chino Creek in the study area.

The CDFW jurisdictional width encompassed the lateral extent of Chino Creek's top-of-bank in the study area. A total of 0.78 acres of CDFW jurisdiction, all of which would be considered unvegetated waters of the State, are associated with Chino Creek in the study area.

3.2.3 Wetland Waters of the U.S./State

An area must exhibit all three wetland parameters described in the Regional Supplement to be considered a federal jurisdictional wetland. Based on the results of the field delineation, no aquatic resources met all three wetland parameters, including an unvegetated wetland water of the State. Therefore, no jurisdictional wetland features exist in the study area.

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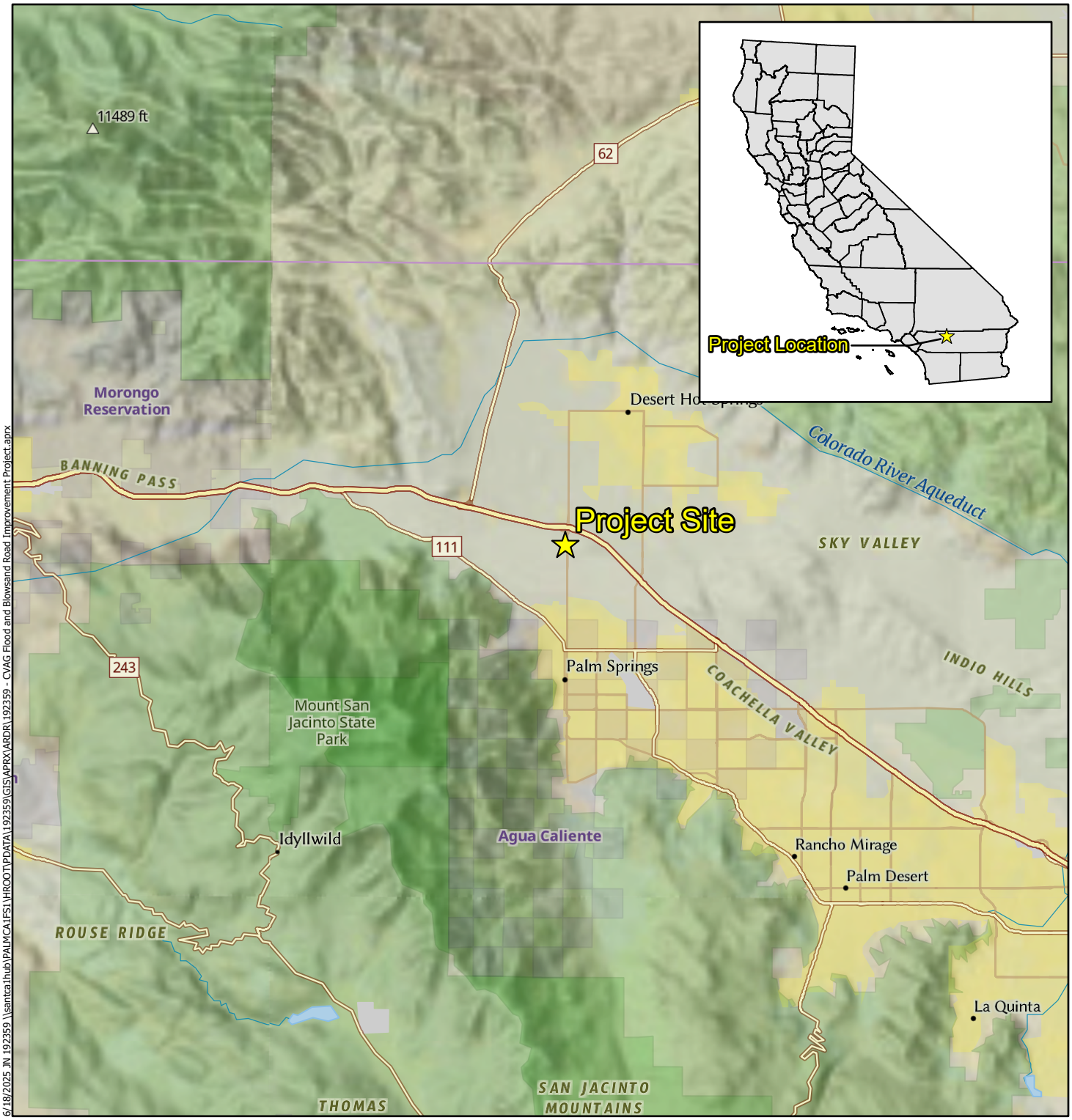
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Appendix A Figures



Legend

★ Project Site

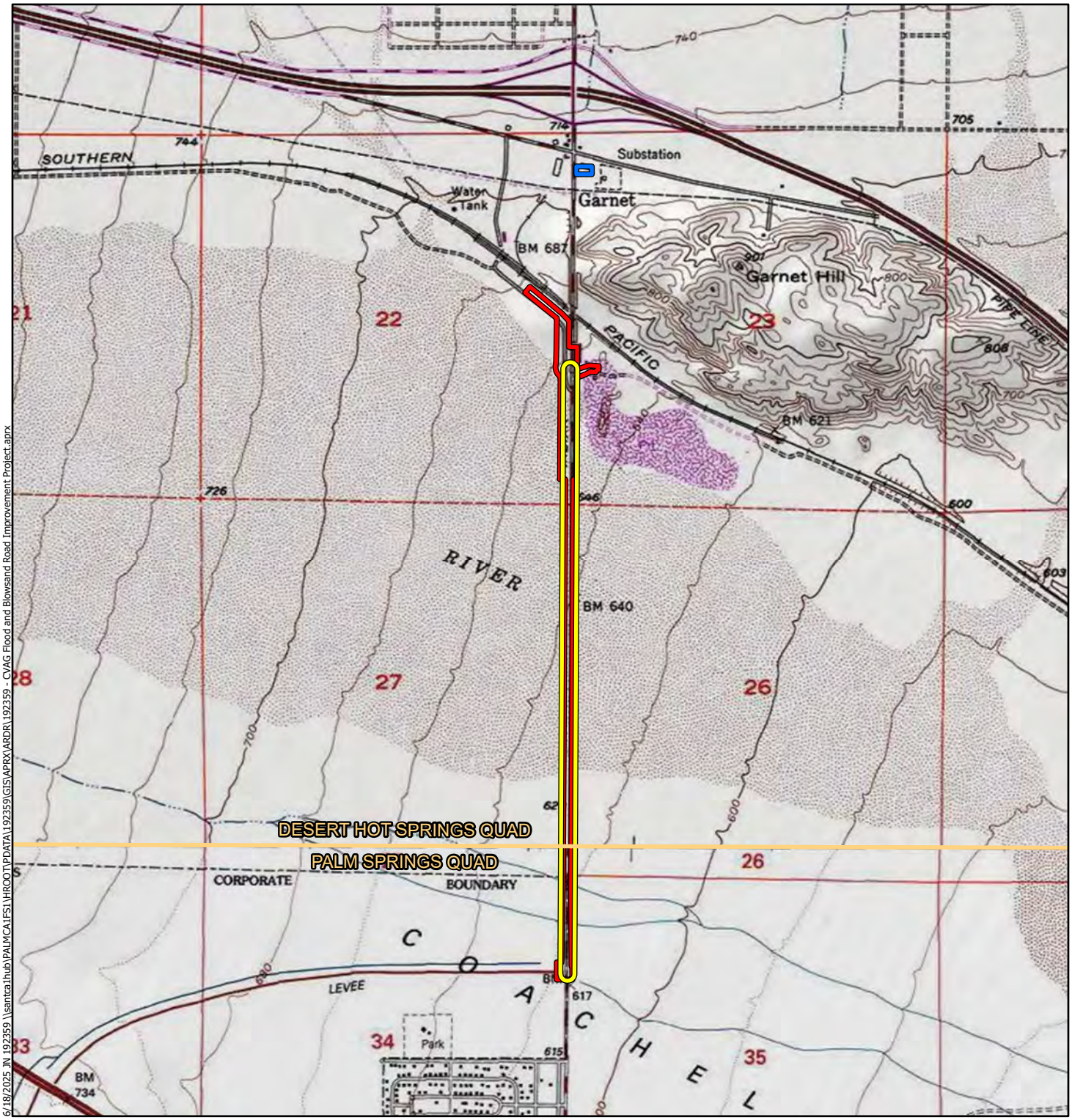
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Riverside County

Regional Vicinity

Figure 1



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\DATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area

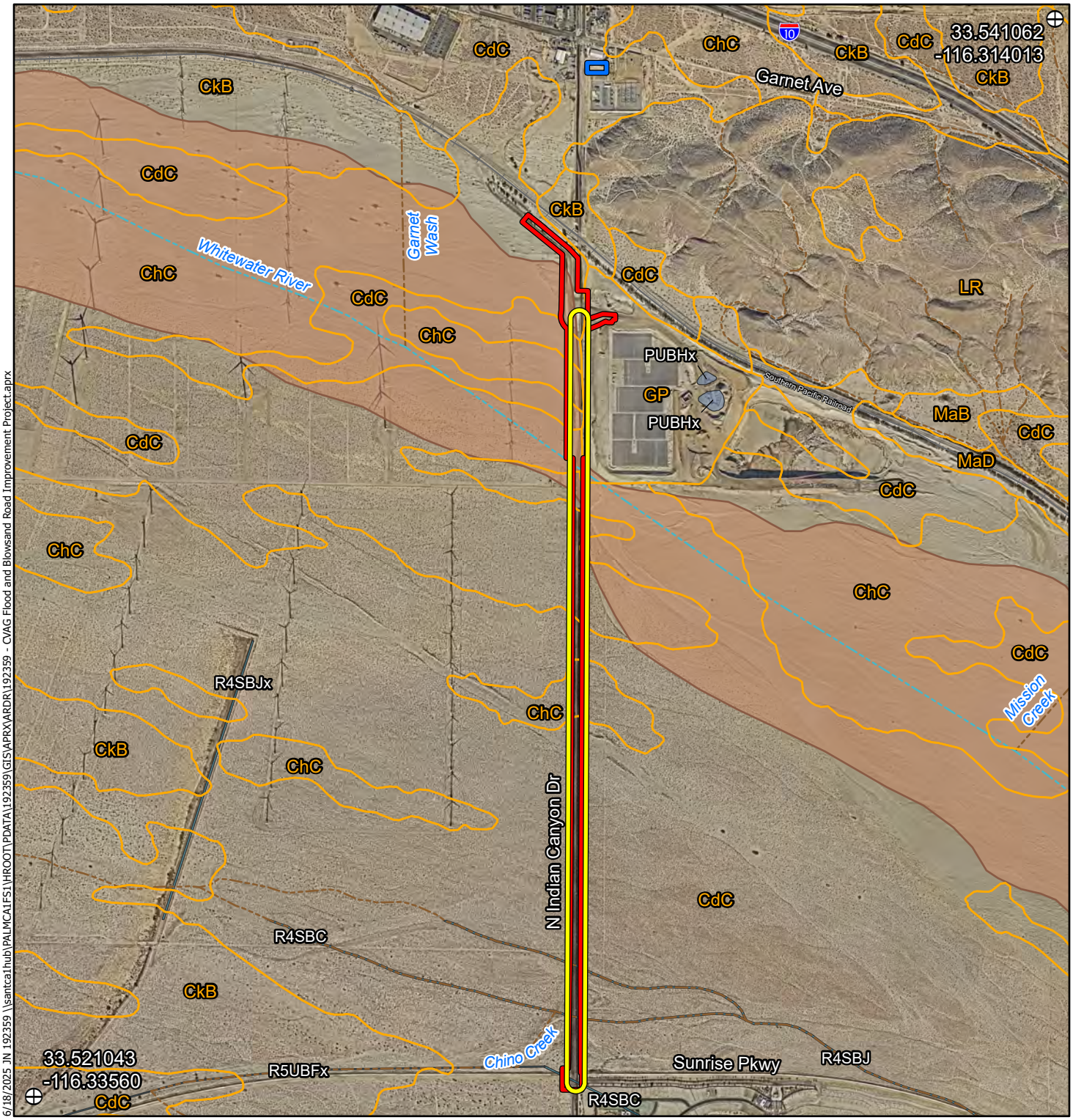
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 1,000 2,000
US Feet

Site Vicinity

Source: Esri, ArcGIS Online, Desert Hot Springs and Palm Springs USGS 7.5-Minute topographic quadrangle maps: *Palm Springs, California*

Figure 2



6/18/2025 JN 192359 \\santca1.hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- Reference Point
- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area
- Soils

National Hydrography Dataset (NHD)

- Stream/River= Ephemeral
- Stream/River= Intermittent
- Wash

National Wetlands Inventory (NWI)

- Freshwater Pond
- Riverine

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

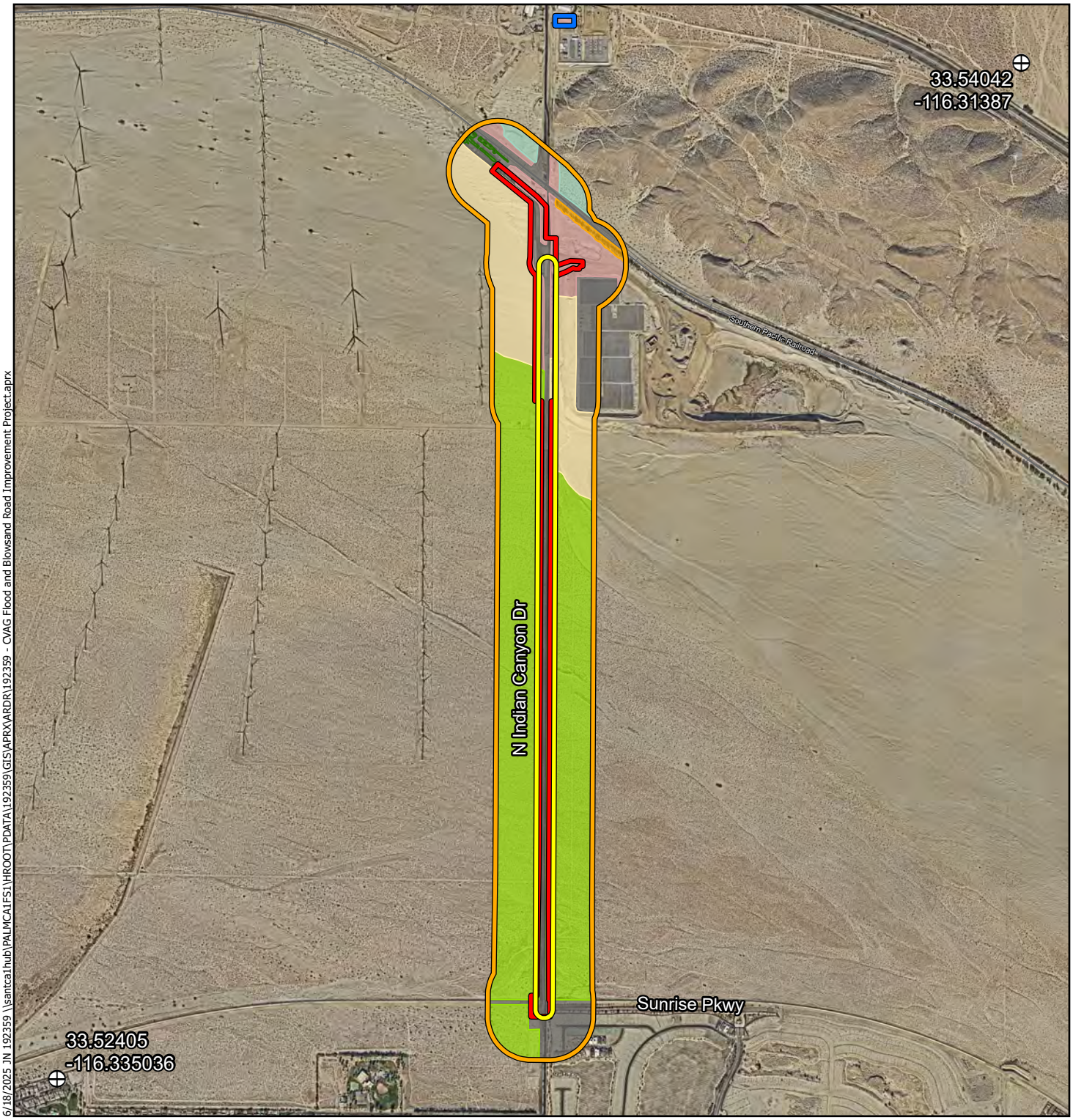
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 0.13 0.25 Miles

Proposed Project

Source: Esri, ArcGIS Online, USGS, USFWS, USDA, Riverside County, 2025 Nearmap Imagery

Figure 3



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- Reference Point
- 2023 Study Area
- 2025 Study Area
- 2025 Study Area (500ft Buffer)
- Potential Construction Staging Area

Vegetation Communities and Land Covers

- Developed (47.2 Acres)
- Disturbed (21.71 Acres)
- Disturbed *Ambrosia salsola - Bebbia juncea* Shrubland Alliance (Ambrosia salsola Association) (168.45 Acres)
- Disturbed Creosote Bush Scrub (5.29 Acres)
- Ephemeral Desert Sand Fields (47.83 Acres)
- Ornamental (0.75 Acres)
- Tamarisk Thickets (1.81 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

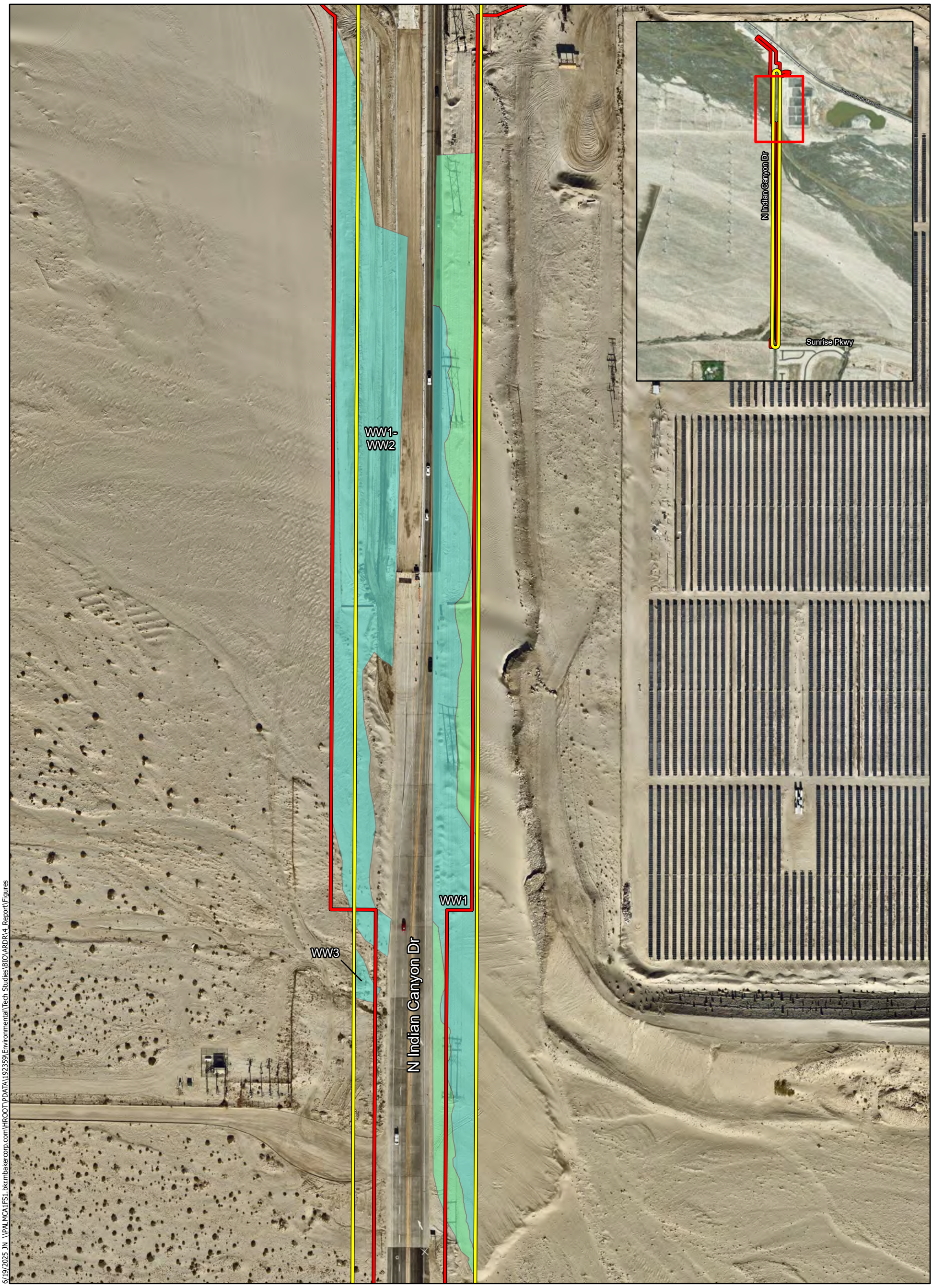
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 0.13 0.25 Miles

Vegetation Communities/Land Covers

Source: Esri, ArcGIS Online, Riverside County, 2025 Nearmap Imagery

Figure 4



6/19/2025 JN \\PALMCA1FS1.bkrmbakercorp.com\HROOT\PDATA\192359\Environmental\Tech Studies\BIO\ARDR\4_Report\Figures

Legend

2023 Study Area

2025 Study Area

Jurisdiction

USACE non-wetland WoUS / RWQCB non-wetland WoS / CDFW non-vegetated streambed (4.25 Acres)

CDFW non-vegetated streambed (1.45 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

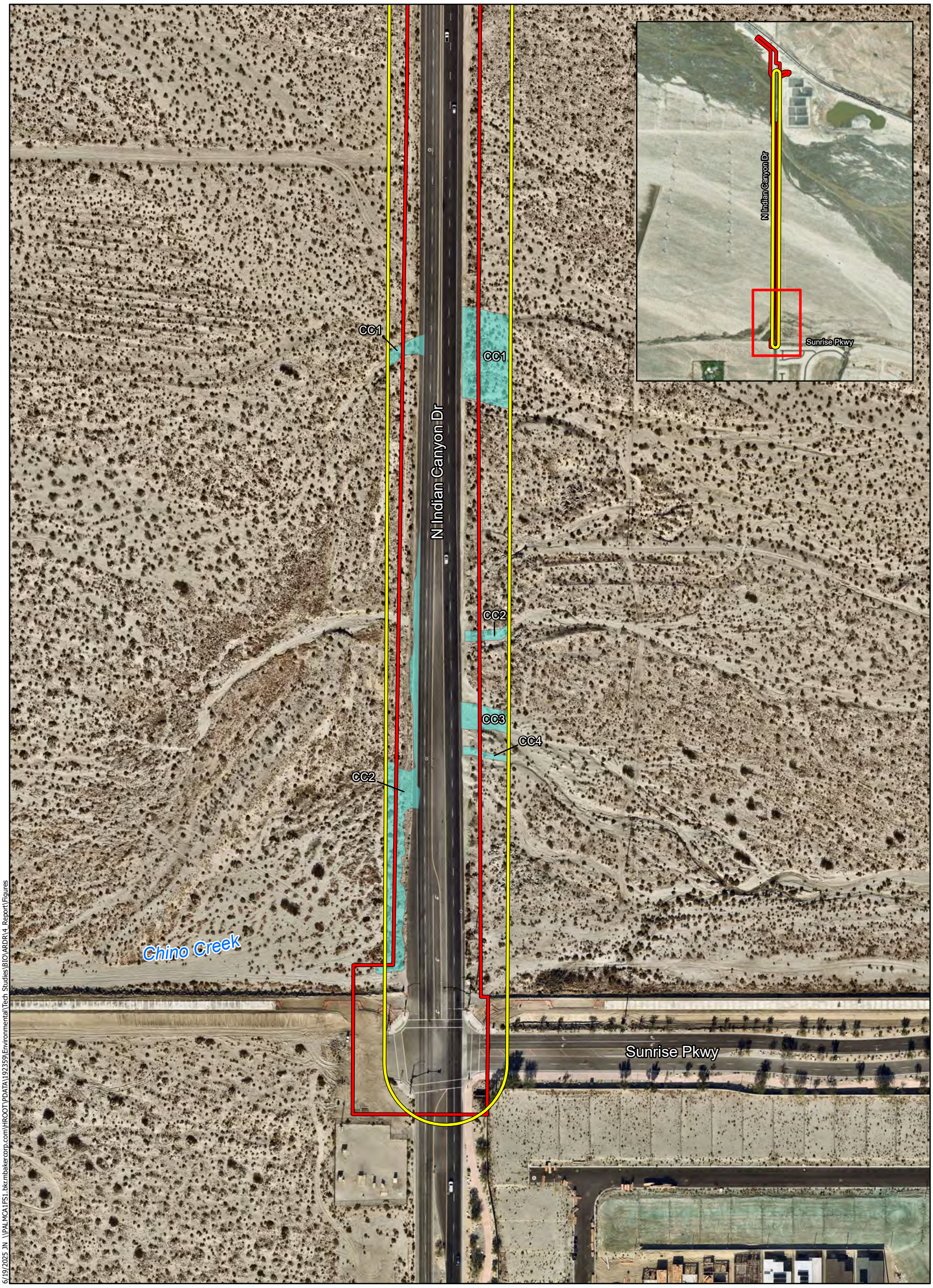
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 75 150 US Feet

Source: Esri, ArcGIS Online, USACE, CDFW, Riverside County, 2025 Nearmap Imagery

Jurisdictional Delineation Map

Figure 5a



6/19/2025 JN \\PALMCA1FS1.bkrmbakercorp.com\HROOT\PDATA\192359\Environmental\Tech Studies\BIO\ARDR\4_Report\Figures

Legend

2023 Study Area

2025 Study Area

Jurisdiction

USACE non-wetland WoUS / RWQCB non-wetland WoS / CDFW non-vegetated streambed (0.78 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

Jurisdictional Delineation Map

0 75 150 US Feet

Source: Esri, ArcGIS Online, USACE, CDFW, Riverside County, 2025 Nearmap Imagery

Figure 5b

Appendix B Site Photographs



Photograph 1: View of North Indian Canyon Drive facing southwest, taken from the intersection with Palm Springs Station Road within the northern portion of the BSA.



Photograph 2: View of North Indian Canyon Drive facing northwest, taken from the intersection with Palm Springs Station Road within the northern portion of the BSA.



Photograph 3: View of Whitewater River (WW1) facing northwest, taken from the upland sand deposits along North Indian Creek Drive.



Photograph 4: View of WW1 facing northeast, taken from the upland sand deposits along North Indian Creek Drive.



Photograph 5: View of WW1 at North Indian Canyon Drive facing northeast.



Photograph 6: View of WW1 along the east side of North Indian Canyon Drive facing upstream (northeast).



Photograph 7: View of WW1 along the east side of North Indian Canyon Drive facing downstream (southeast).



Photograph 8: View of Chino Creek Tributary 1 (CC1) facing upstream (west).



Photograph 9: View of CC1 facing downstream (east) towards North Indian Canyon Drive. Taken from within the center of CC1.



Photograph 10: View of CC1 on the east side of North Indian Canyon Drive facing downstream (east), away from the road. Taken from within the center of CC1.



Photograph 11: View of CC1 facing upstream (west), towards North Indian Canyon Drive. Taken from within the center of CC1.



Photograph 12: View of Chino Creek Tributary 2 (CC2) facing south along the east side of North Indian Canyon Drive.



Photograph 13: Overview of CC2 facing northwest, away from North Indian Canyon Drive. Taken from within the center of CC2.



Photograph 14: View of Chino Creek Tributary 2 (CC2) on the east side of North Indian Canyon Drive facing downstream (east), away from the road. Taken from within the center of CC2.



Photograph 15: View of Chino Creek Tributary 3 (CC3) on the east side of North Indian Canyon Drive facing northwest towards the road. Taken from within the center of CC3.



Photograph 16: View of Chino Creek Tributary 4 (CC4) on the east side of North Indian Canyon Drive facing west, towards the road. Taken from within the center of CC4.

Appendix C List of Plant Species

Plant Species	Arid West Indicator Status
VASCULAR SPECIES	
EUDICOTS	
ADOXACEAE—Muskroot Family	
Sambucus nigra ssp. caerulea—blue elderberry	FACU
ANACARDIACEAE—Sumac Or Cashew Family	
Schinus molle—Peruvian peppertree*	FACU
ASTERACEAE—Sunflower Family	
Acourtia microcephala—sacapellote	NI
Artemisia californica—California sagebrush	NI
Centaurea melitensis—Maltese star-thistle*	NI
Deinandra fasciculata—clustered tarweed	FACU
Deinandra paniculata—paniculate tarplant	FACU
Encelia californica—California brittle bush	NI
Eriophyllum confertiflorum—golden-yarrow	NI
Lasthenia gracilis—needle goldfields	NI
Sonchus asper—spiny sowthistle*	FAC
Oncosiphon pilulifer—stinknet*	FACU
BORAGINACEAE—Borage Family	
Eriodictyon crassifolium—thick leaf yerba santa	NI
Pectocarya linearis—sagebrush combseed	NI
BRASSICACEAE—Mustard Family	
Hirschfeldia incana—shortpod mustard*	NI
Lepidium didymum—lesser swinecress*	NI
Raphanus sativus—cultivated radish*	NI
CHENOPODIACEAE—Goosefoot Family	
Kochia scoparia—no common name*	FAC
Salsola tragus—prickly Russian thistle*	FACU
CRASSULACEAE—Stonecrop Family	
Crassula connata—sand pygmyweed	FAC
FABACEAE—Legume Family	
Acmispon strigosus—strigose bird's-foot trefoil	NI
Lupinus bicolor—miniature lupine	NI
Lupinus truncatus—collared annual lupine	NI
Melilotus indicus—annual yellow sweetclover*	FACU
Trifolium pratense—red clover*	FACU
GERANIACEAE—Geranium Family	
Erodium cicutarium—redstem stork's bill*	NI
LAMIACEAE—Mint Family	
Salvia mellifera—black sage	NI

Plant Species	Arid West Indicator Status
MALVACEAE—Mallow Family	
Malva parviflora—cheeseweed mallow*	NI
NYCTAGINACEAE—Four O'clock Family	
Mirabilis laevis var. crassifolia—California four o'clock	NI
OLEACEAE—Olive Family	
Olea europaea—olive*	NI
PHRYMACEAE—Lopseed Family	
Diplacus brevipes—widethroat yellow monkeyflower	NI
PLANTAGINACEAE—Plantain Family	
Keckiella antirrhinoides—bush penstemon	NI
Nuttallanthus texanus—Texas toadflax	NI
PLATANACEAE—Plane Tree, Sycamore Family	
Platanus racemosa—California sycamore	FAC
POLYGONACEAE—Buckwheat Family	
Eriogonum fasciculatum—California buckwheat	NI
Polygonum aviculare—prostrate knotweed*	FAC
RHAMNACEAE—Buckthorn Family	
Rhamnus crocea—redberry buckthorn	NI
SOLANACEAE—Nightshade Family	
Solanum xanti—Purple nightshade	NI
MONOCOTS	
JUNCACEAE—Rush Family	
Juncus bufonius—toad rush	FACW
LILIACEAE—Lily Family	
Calochortus splendens—splendid mariposa lily	NI
POACEAE—Grass Family	
Bromus diandrus—ripgut brome*	NI
Bromus hordeaceus—soft brome*	FACU
Bromus rubens—red brome*	UPL
Festuca myuros—rat-tail fescue*	FACU
Festuca perennis—perennial rye grass*	FAC
Hordeum murinum—mouse barley*	FACU
Hordeum vulgare—common barley*	NI
Phalaris aquatica—Harding grass*	FACU
Schismus barbatus—common Mediterranean grass*	NI
THEMIDACEAE—Brodiaea Family	
Dipterostemon capitatus—bluedicks	FACU

* Non-native species

Arid West Indicator Status

OBL Obligate Wetland – Almost always occur in wetlands (estimated probability of >99%)

FACW Facultative Wetland – Usually occur in wetlands (estimated probability of 67% to 99%)

FAC Facultative – Equally likely to occur in wetlands/non-wetlands (estimated probability of 34% to 66%)

FACU Facultative Upland – Usually occur in non-wetlands (estimated probability 67% to 99%)

UPL Obligate Upland – Almost always occur in non-wetlands (estimated probability >99%)

NI No Indicator – Species does not have an indicator status

Source: Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30: 1–17. Published 28 April 2016. ISSN 2153 733X. Accessed March 2020. http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/National/National_2016v2.pdf.

Appendix D OHWM Data Sheets

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: Flood and Blowsand Road	Site Name: Chino Creek	Date and Time: 05/24/2023, 10:45AM
Location (lat/long): 33.871304°, -116.545661°	Investigator(s): G. Chan, R. Henry, and A. Nakagawa	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [x] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Heavy rain year of 2023

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Chino Creek main stem - sandy channel bottom with dunes transitioning to gravel band at break in slope; devoid of vegetation. High winds and clear skies. Heavily trafficked road (North Indian Canyon Drive)

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* b
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [x] **Shelving:** a
  - [x] *shelf at top of bank:* x
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:* a
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [x] **Mudcracks:** b
- [x] **Changes in particle-sized distribution:** x
  - [x] *transition from* sand to gravel
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:** a

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [x] *vegetation absent to:* graminoids
  - [ ] *moss to:*
  - [x] *forbs to:* woody shrubs
  - [x] *graminoids to:* forbs
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:** a
- [x] **Presence of large wood:** a
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:

N/A

Project ID #: Flood and Blowsand Road

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

N/A

Step 5 Describe rationale for location of OHWM

Reviewed past and historical aerial imagery which aligns with the field determinations. Change in particle-sized distribution noted along the entire outer edge of the OHWM. Looser, finer sands were located within the channel bottom; larger gravel particles were deposited along the break in slope; and a mixture of gravel, loose sand, and compacted manipulated soils occur beyond the OHWM. Sandy dunes with large woody debris (possibly blown in) deposited throughout channel bed.

Additional observations or notes

An excavator was observed manipulating blowsands along northwestern roadside to maintain North Indian Canyon Drive, north of this assessment location.

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☒ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
DSCN9757	Upstream
DSCN9756	Downstream

OHWM Field Identification Datasheet Instructions and Field Procedure

Step 1 Site overview from remote and online resources **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on datasheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape.

a. **Note on the datasheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 Site conditions during the field assessment (assemble evidence)

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious man-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the datasheet** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a List evidence

Assemble evidence by checking the boxes next to each line of evidence:

a. If needed, use a separate scratch datasheet to check boxes next to possible indicators, or check boxes of possible indicators in pencil and use pen for final decision.
b. If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators	**Sediment and soil indicators**	**Vegetation Indicators**	**Ancillary indicators**
Where are the breaks in slope?	Where does evidence of soil formation appear?	Where are the significant transitions in vegetation species, density, and age?	Is there organic litter present?
Are there identifiable banks?		Is there vegetation growing on the channel bed?	
Is there an easily identifiable top of bank?	Are there mudcracks present?	If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?	Is there any leaf litter disturbed or washed away?
Are the banks actively eroding?			
Are the banks undercut?	Is there evidence of sediment sorting by grain size?	Where are the significant transitions in vegetation?	Is there large wood deposition?
Are the banks armored?			
Is the channel confined by the surrounding hillslopes?		Is the vegetation tolerant of flowing water?	Is there evidence of water staining?
Are there natural or man-made berms and levees?		Has any vegetation been flattened by flowing water?	
Are there fluvial terraces?			
Are there channel bars?			

Are the following features of fluvial transport present?
Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b **Weight each line of evidence and weigh body of evidence**

Weight each indicator by considering its importance based upon:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows?

Tips on how to assess the indicator relative to type of flow:

Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages? Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low flow indicator. The difference between high and extreme flow indicators can sometimes be difficult to determine.

***Landscape context from Step 1 can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***Information in Chapter 2 of the OHWM field manual provides information on specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.**

ii. Did recent extreme events and/or land use affect this indicator?

1. Recent floods may have left many extreme flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.
2. Droughts may cause field evidence of OHWM to be obscured, because there has been an extended time since the last high flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.
3. Both man-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can all alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provides specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describes each indicator in detail and provides examples of areas where indicators are difficult to interpret.

d. Weigh body of evidence:

i. Combine weights: integrate the weighted line of evidence (relevance, strength, reliability) of each indicator.

ii. For each of the observed indicators, which are more heavily weighted? Where do high value indicators co-occur along the stream reach? Do they co-occur at a similar elevation along the banks relative to water surface (or channel bed if there is no water).

iii. On datasheet, select the indicators used to identify the OHWM. Information in Chapter 2 of the OHWM field manual provides descriptions of specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.

e. Take photographs of indicators and attach a log using either page 2 of datasheet or another method of logging photos.

i. Annotate photos with descriptions of indicators.

Step 4 **Is additional information needed? Are other resources needed to support the lines of evidence observed in the field?**

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling, weighting, and weighing evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were needed to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the datasheet.

Step 5 **Describe rationale for location of OHWM:**

a. Why do the combination of indicators represent the OHWM?

b. If there are multiple possibilities for the OHWM, explain why there are two (or more) possibilities. Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the datasheet under Step 5.

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: Flood and Blowsand Road	Site Name: Whitewater River	Date and Time: 05/24/2023, 8:00 AM
Location (lat/long): 33.893352°/-116.545971°	Investigator(s): G. Chan, R. Henry, and A. Nakagawa	

Step 1 Site overview from remote and online resources
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [x] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?
Heavy rain year of 2023

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Main stem of Whitewater River - sandy channel bottom with dunes transitioning to gravel band at break in slope; devoid of vegetation. High winds and clear skies. Heavily trafficked road (North Indian Canyon Drive)

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* b
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [x] **Shelving:** a
  - [x] *shelf at top of bank:* x
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:* a
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [x] **Mudcracks:** b
- [x] **Changes in particle-sized distribution:** x
  - [x] *transition from* sand to gravel
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:** a

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [x] *vegetation absent to:* graminoids
  - [ ] *moss to:*
  - [x] *forbs to:* woody shrubs
  - [x] *graminoids to:* forbs
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [x] **Presence of large wood:** a
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:
N/A

Project ID #: Flood and Blowsand Road

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

N/A

Step 5 Describe rationale for location of OHWM

Reviewed past and historical aerial imagery which aligns with the field determinations. Change in particle-sized distribution noted along the entire outer edge of the OHWM. Looser, finer sands were located within the channel bottom; larger gravel particles were deposited along the break in slope; and a mixture of gravel, loose sand, and compacted manipulated soils occur beyond the OHWM. Sandy dunes with large woody debris (possibly blown in) deposited throughout channel bed.

Additional observations or notes

An excavator was observed manipulating blowsands along northwestern roadside to maintain North Indian Canyon Drive, adjacent to this assessment location.

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☒ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
DSCN9646	Upstream
DSCN9647	Downstream

OHWM Field Identification Datasheet Instructions and Field Procedure

Step 1 Site overview from remote and online resources **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on datasheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape.

a. **Note on the datasheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 Site conditions during the field assessment (assemble evidence)

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious man-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the datasheet** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a List evidence

Assemble evidence by checking the boxes next to each line of evidence:

a. If needed, use a separate scratch datasheet to check boxes next to possible indicators, or check boxes of possible indicators in pencil and use pen for final decision.
b. If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators	**Sediment and soil indicators**	**Vegetation Indicators**	**Ancillary indicators**
Where are the breaks in slope?	Where does evidence of soil formation appear?	Where are the significant transitions in vegetation species, density, and age?	Is there organic litter present?
Are there identifiable banks?		Is there vegetation growing on the channel bed?	
Is there an easily identifiable top of bank?	Are there mudcracks present?	If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?	Is there any leaf litter disturbed or washed away?
Are the banks actively eroding?			
Are the banks undercut?	Is there evidence of sediment sorting by grain size?	Where are the significant transitions in vegetation?	Is there large wood deposition?
Are the banks armored?			
Is the channel confined by the surrounding hillslopes?		Is the vegetation tolerant of flowing water?	Is there evidence of water staining?
Are there natural or man-made berms and levees?		Has any vegetation been flattened by flowing water?	
Are there fluvial terraces?			
Are there channel bars?			

Are the following features of fluvial transport present?
Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b **Weight each line of evidence and weigh body of evidence**

Weight each indicator by considering its importance based upon:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows?

Tips on how to assess the indicator relative to type of flow:

Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages? Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low flow indicator. The difference between high and extreme flow indicators can sometimes be difficult to determine.

***Landscape context from Step 1 can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***Information in Chapter 2 of the OHWM field manual provides information on specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.**

ii. Did recent extreme events and/or land use affect this indicator?

1. Recent floods may have left many extreme flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.
2. Droughts may cause field evidence of OHWM to be obscured, because there has been an extended time since the last high flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.
3. Both man-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can all alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provides specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describes each indicator in detail and provides examples of areas where indicators are difficult to interpret.

d. Weigh body of evidence:

i. Combine weights: integrate the weighted line of evidence (relevance, strength, reliability) of each indicator.

ii. For each of the observed indicators, which are more heavily weighted? Where do high value indicators co-occur along the stream reach? Do they co-occur at a similar elevation along the banks relative to water surface (or channel bed if there is no water).

iii. On datasheet, select the indicators used to identify the OHWM. Information in Chapter 2 of the OHWM field manual provides descriptions of specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.

e. Take photographs of indicators and attach a log using either page 2 of datasheet or another method of logging photos.

i. Annotate photos with descriptions of indicators.

Step 4 **Is additional information needed? Are other resources needed to support the lines of evidence observed in the field?**

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling, weighting, and weighing evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were needed to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the datasheet.

Step 5 **Describe rationale for location of OHWM:**

a. Why do the combination of indicators represent the OHWM?

b. If there are multiple possibilities for the OHWM, explain why there are two (or more) possibilities. Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the datasheet under Step 5.

Appendix E Aquatic Resource Excel Sheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Whitewater River	CALIFORNIA	R4SB	RIVERINE	Linear	285.28	FOOT	NRPW	33.89122	116.54578	Whitewater River
Chino Creek	CALIFORNIA	R4SB	RIVERINE	Linear	499.34	FOOT	NRPW	33.87300	116.54577	Whitewater River

Appendix F Stream Duration Assessment Method Sheets

Streamflow Duration Assessment Methods

SDAM Version 3.0.0 Release Date: June 2025

https://www.epa.gov/streamflow-duration-assessment

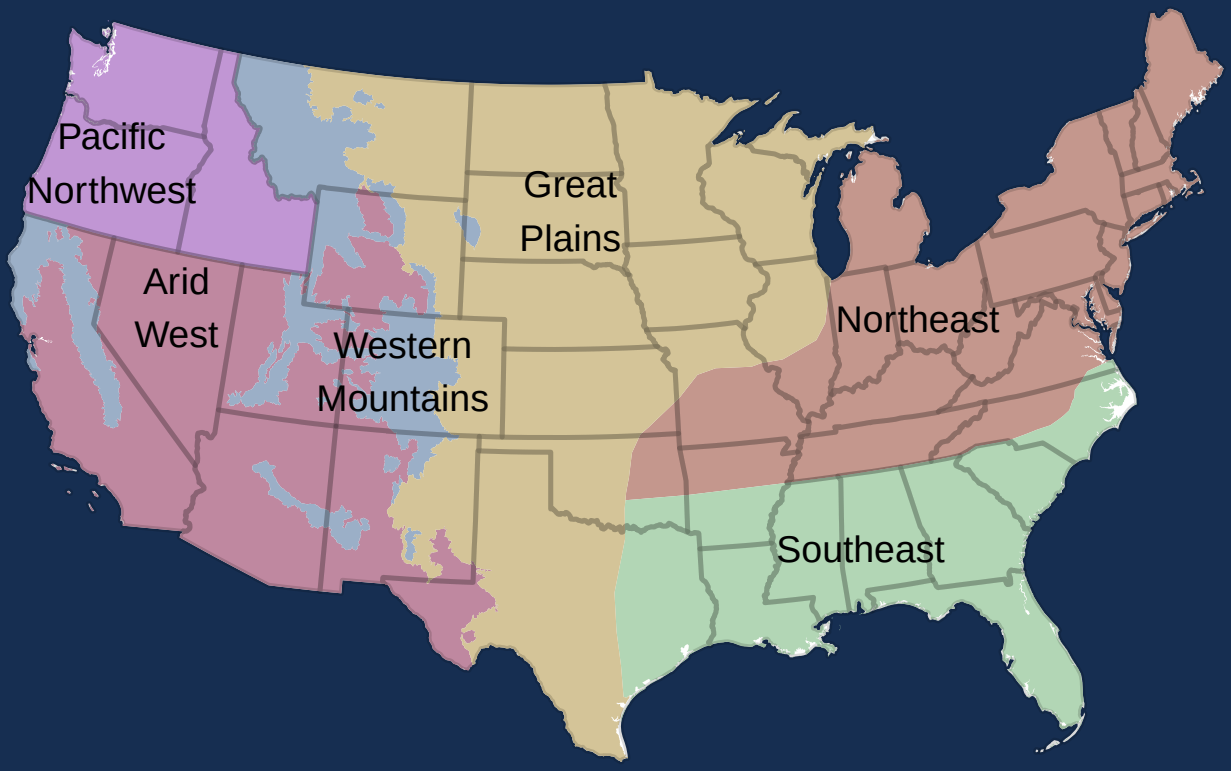
Visit date: 2025-06-20

Report generated date: 2025-06-20

Project name: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code: N INDIAN CANYON DRIVE - SDAM 1

Regional SDAM classification: EPHEMERAL



General site information

Project name or number: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code or identifier: N INDIAN CANYON DRIVE - SDAM 1

SDAM Region: Arid West

Adjacent SDAM Regions within 10 miles: Unknown

Assessor(s): A. Nakagawa

Waterway name: Whitewater River

Visit date: 2025-06-20

Current weather conditions: Clear/Sunny

Notes on current or recent weather conditions: Aerial imagery used for desktop SDAM was taken during Normal Conditions according to APT. Google Earth imagery dated 1/29/2025.

Location: Not provided

Surrounding land use within 100 m: Urban, industrial, or residential, Other

Notes on land use: Roadways, solar and wind farms, residential development

Description of reach boundaries: The SDAM was performed via desktop, therefore there were no constraints to reach length. The assessment reach begins approximately 510 meters south of where the Amtrak crosses beneath North Indian Canyon Drive, and ends approximately 80 meters upstream of where the Whitewater crosses over North Indian Canyon Drive

Assessment reach length (m): 200

Disturbed or difficult conditions: Stream modifications (e.g., channelization), Drought

Notes on disturbances or difficult site conditions: Note - assessment reach occurs downstream of a heavily managed and manipulated flood control system, and adjacent to a transportation corridor.

Observed hydrology

Percent of reach with surface flow: 0

Percent of reach with surface and sub-surface flows: 0

Number of isolated pools: 0

Notes on observed hydrology: Wash system generally lacking perennial flow or riffle-pool complex based on aerial imagery

Site photos

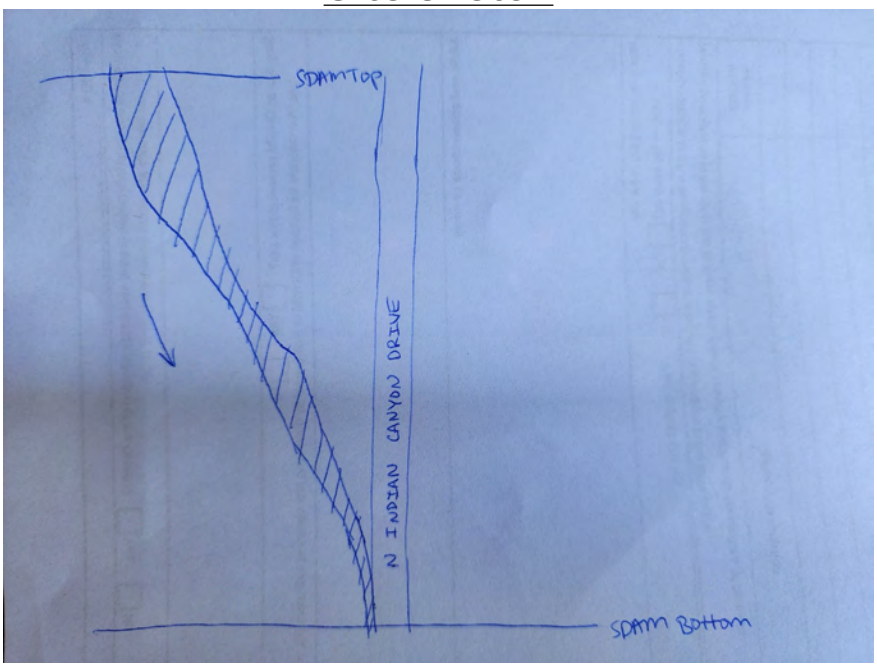
Top of reach looking downstream:

Middle of reach looking upstream:

Middle of reach looking downstream:

Bottom of reach looking upstream:

Site sketch



Indicators

Mean bankfull channel width (m): 15.4

Notes on mean bankfull channel width: Estimated widths via aerial image

Mean bankfull channel width photos and descriptions:

Perennial indicator taxa: No perennial indicator taxa detected

Aquatic macroinvertebrates in assessment area: Aquatic macroinvertebrates absent

Notes on aquatic macroinvertebrates:

Assumed

Macroinvertebrate photos and photo descriptions:

Slope (to the nearest half-percent): 0.5

Notes about slope:

Assumed

Slope photos and descriptions:

Number of hydrophytic plant species: 0

Vegetation in assessment area: vegetation absent

Notes on hydrophytic plants:

Assumed based on aerial imagery

Hydrophyte photos and photo descriptions:

Prevalence of upland rooted plants in streambed: 3 (Strong) Rooted upland plants are absent from the streambed/thalweg.

Notes about upland rooted plants:

Assumed based on aerial imagery

Upland rooted plants photos and descriptions:

Algal cover: Not Detected

Check here if algae exclusively appears to have been deposited from an upstream source, and no local growth is evident: Not checked

Notes about algal cover:

Assumed based on aerial imagery

Algal cover photos and descriptions:

Differences in vegetation: 0 (Poor) No compositional or density differences in vegetation are present between the banks and the adjacent uplands.

Notes about differences in vegetation:

Assumed based on aerial imagery

Vegetation differences photos and descriptions:

Riffle-pool sequence: 0 (Poor) No riffle-pool sequences observed.

Notes about riffle-pool sequence:

Assumed based on aerial imagery

Riffle-pool photos and descriptions:

Supplemental information

Additional notes about the assessment:

N/A

Supplemental information photos and descriptions:

Arid West Regional SDAM classification

EPHEMERAL

SDAM resources

End of Report

Streamflow Duration Assessment Methods

SDAM Version 3.0.0 Release Date: June 2025

https://www.epa.gov/streamflow-duration-assessment

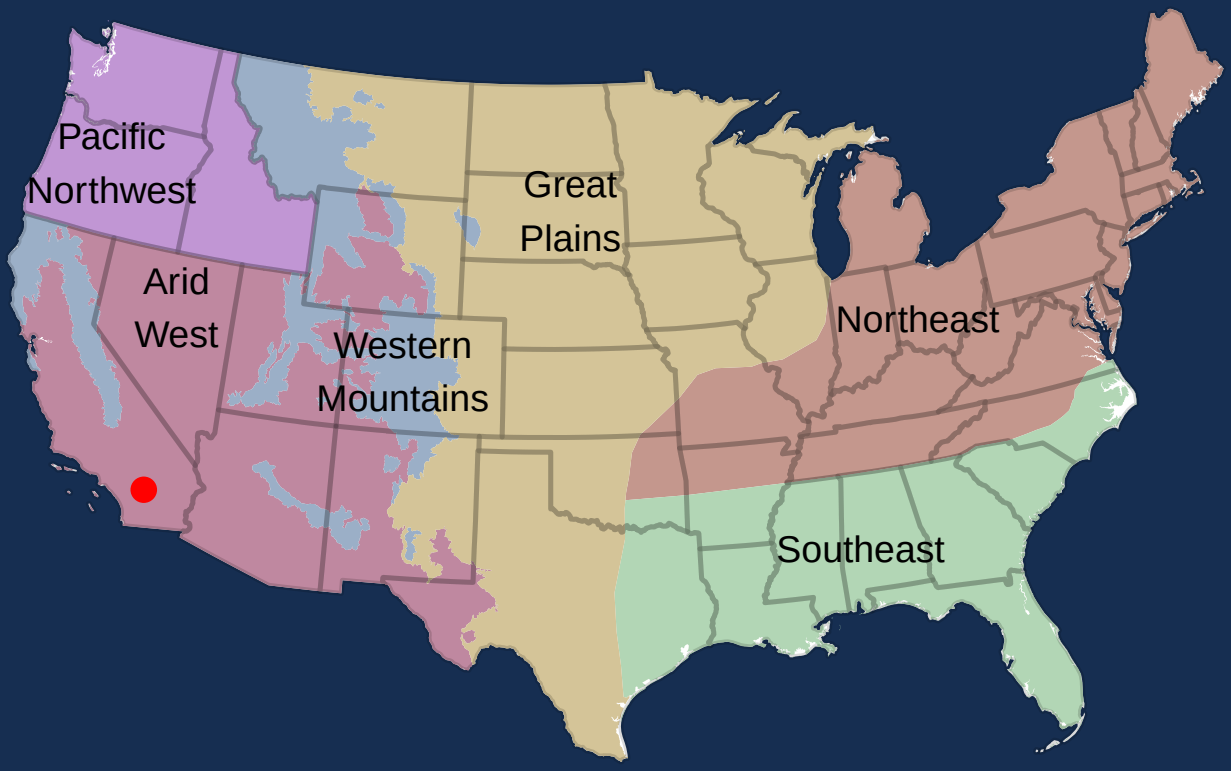
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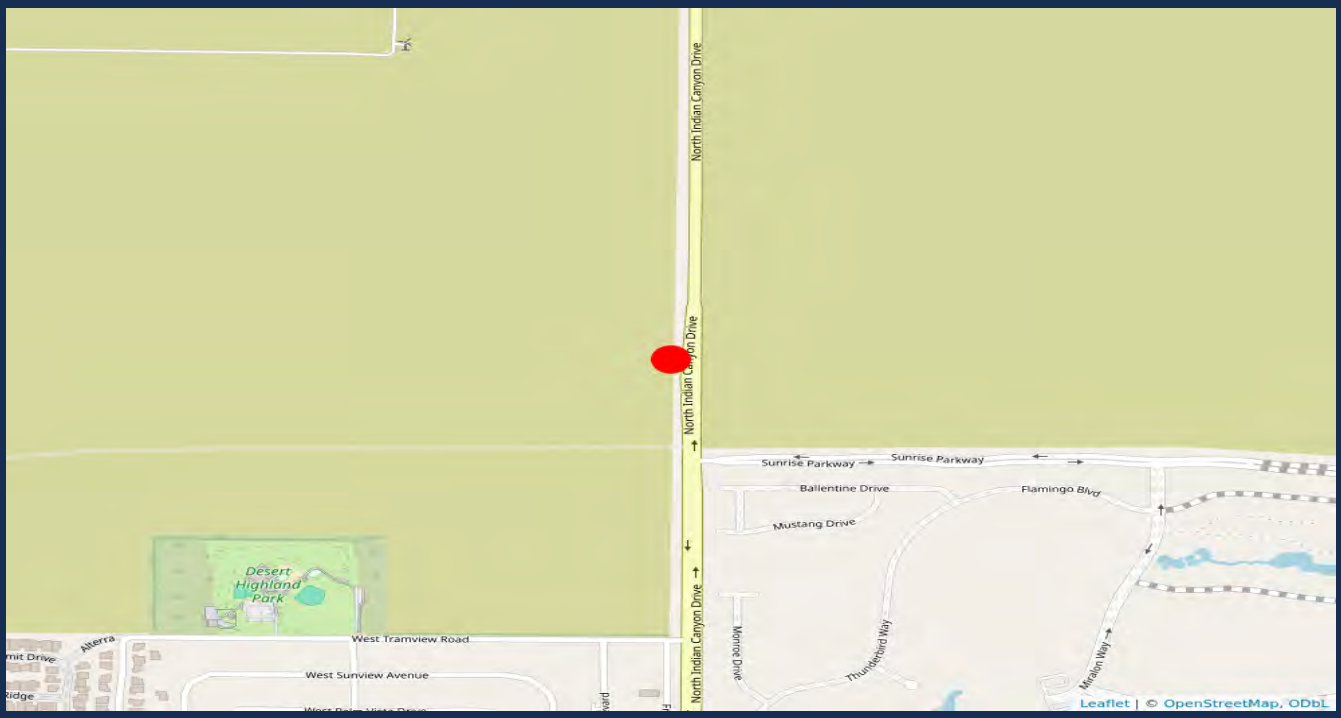
Report generated date: 2025-06-20

Project name: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code: N INDIAN CANYON DRIVE - SDAM 2

Regional SDAM classification: EPHEMERAL




North Indian Canyon Drive
North Indian Canyon Drive
Sunrise Parkway
Sunrise Parkway
Ballentine Drive
Flamingo Blvd
Mustang Drive
Desert Highland Park
West Tramview Road
West Sunview Avenue
Alterra
North Indian Canyon Drive
Monroe Drive
Thunderbird Way
Miralon Way
Leaflet | © OpenStreetMap, ODbL

General site information

Project name or number: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code or identifier: N INDIAN CANYON DRIVE - SDAM 2

SDAM Region: Arid West

Adjacent SDAM Regions within 10 miles: None

Assessor(s): A. Nakagawa

Waterway name: Chino Creek

Visit date:

Current weather conditions: Clear/Sunny

Notes on current or recent weather conditions: Aerial imagery used for desktop SDAM was taken during Normal Conditions according to APT. Google Earth imagery dated 1/29/2025.

Location: 33.871992 N, -116.545846 E

Surrounding land use within 100 m: Urban, industrial, or residential, Other

Notes on land use: Roadways, solar and wind farms, residential development

Description of reach boundaries: The SDAM was performed via desktop, therefore there were no constraints to reach length. The assessment reach begins approximately 200 meters northwest of the intersection of North Indian Canyon Drive and Sunrise Parkway, and ends approximately 15 meters west of North Indian Canyon Drive.

Assessment reach length (m): 200

Disturbed or difficult conditions: Stream modifications (e.g., channelization), Drought

Notes on disturbances or difficult site conditions: Note - assessment reach occurs downstream of a heavily managed and manipulated flood control system, and adjacent to a transportation corridor.

Observed hydrology

Percent of reach with surface flow: 0

Percent of reach with surface and sub-surface flows: 0

Number of isolated pools: 0

Notes on observed hydrology: Wash system generally lacking perennial flow or riffle-pool complex based on aerial imagery.

Site photos

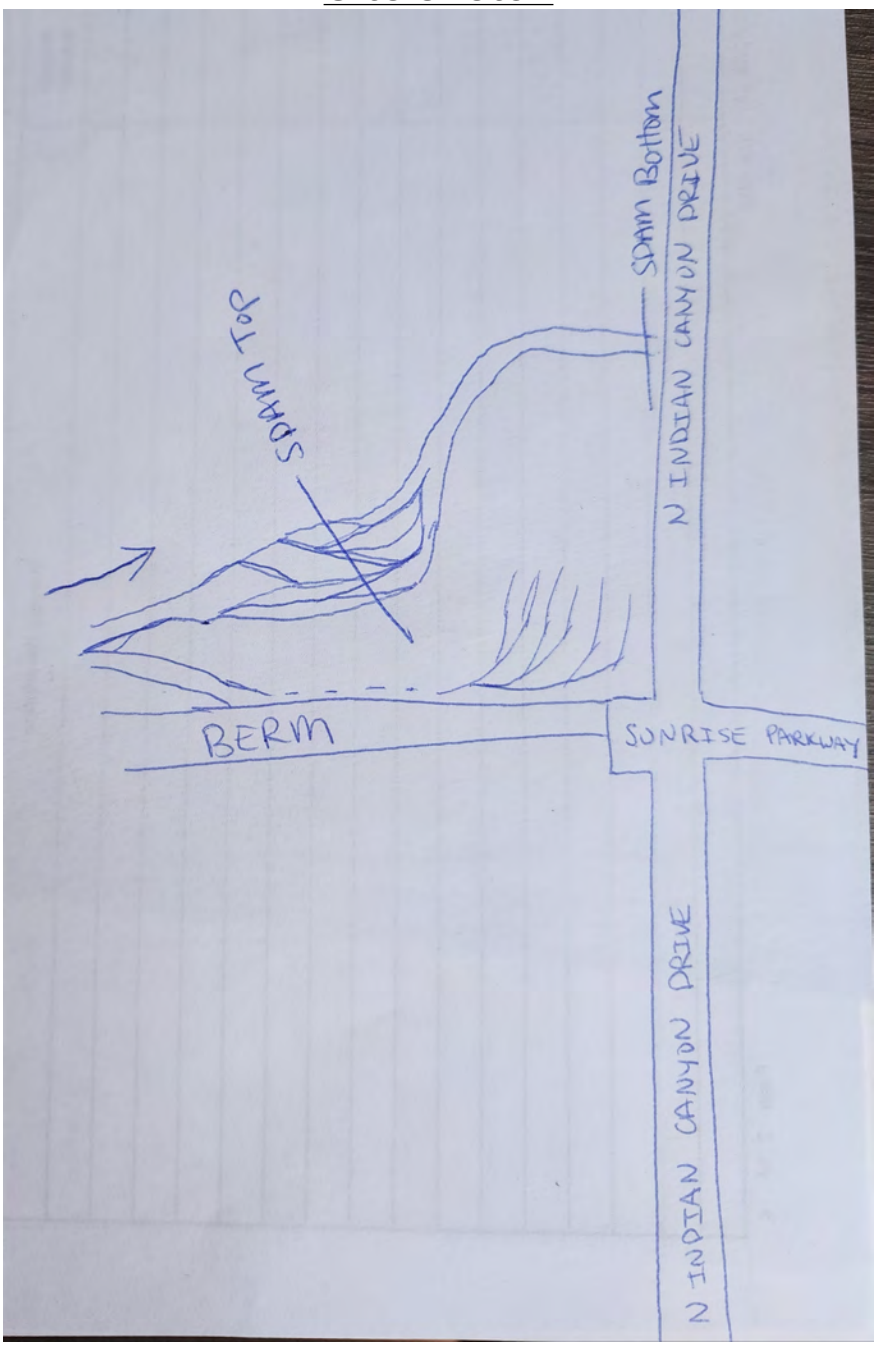
Top of reach looking downstream:

Middle of reach looking upstream:

Middle of reach looking downstream:

Bottom of reach looking upstream:

Site sketch


SDAM Bottom
SDAM Top
2 INDIAN CANYON DRIVE
BERM
SUNRISE PARKWAY
2 INDIAN CANYON DRIVE

Indicators

Mean bankfull channel width (m): 27.7

Notes on mean bankfull channel width: Estimated widths via aerial image

Mean bankfull channel width photos and descriptions:

Perennial indicator taxa: No perennial indicator taxa detected

Aquatic macroinvertebrates in assessment area: Aquatic macroinvertebrates absent

Notes on aquatic macroinvertebrates:

Assumed

Macroinvertebrate photos and photo descriptions:

Slope (to the nearest half-percent): 0.5

Notes about slope:

Assumed

Slope photos and descriptions:

Number of hydrophytic plant species: 0

Vegetation in assessment area: vegetation present

Notes on hydrophytic plants:

Assumed based on aerial imagery. Channel invert appears generally unvegetated.

Hydrophyte photos and photo descriptions:

Prevalence of upland rooted plants in streambed: 2.5

Notes about upland rooted plants:

Assumed based on aerial imagery

Upland rooted plants photos and descriptions:

Algal cover: Not Detected

Check here if algae exclusively appears to have been deposited from an upstream source, and no local growth is evident: Not checked

Notes about algal cover:

Assumed based on aerial imagery

Algal cover photos and descriptions:

Differences in vegetation: 0 (Poor) No compositional or density differences in vegetation are present between the banks and the adjacent uplands.

Notes about differences in vegetation:

Assumed based on aerial imagery

Vegetation differences photos and descriptions:

Riffle-pool sequence: 0 (Poor) No riffle-pool sequences observed.

Notes about riffle-pool sequence:

Assumed based on aerial imagery

Riffle-pool photos and descriptions:

Supplemental information

Additional notes about the assessment:

N/A

Supplemental information photos and descriptions:

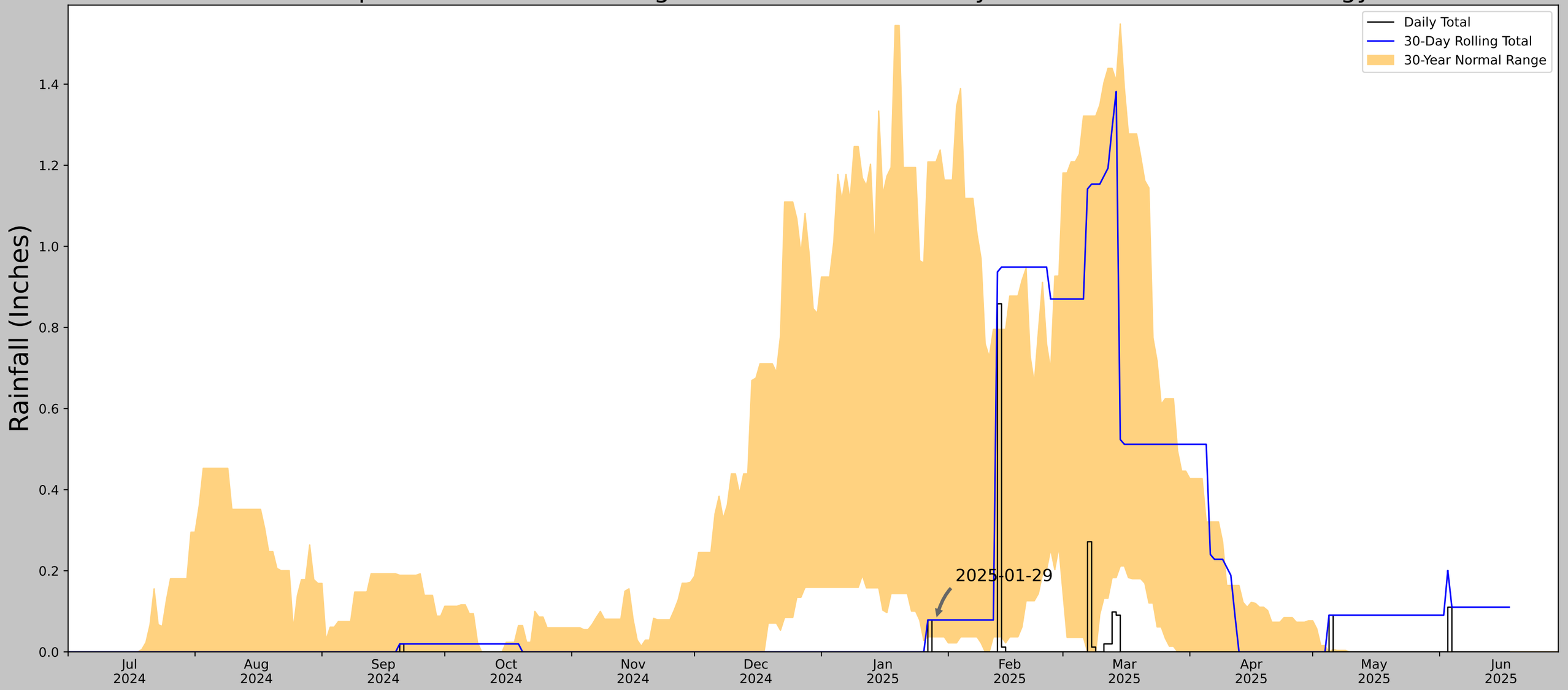
Arid West Regional SDAM classification

EPHEMERAL

SDAM resources

End of Report

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.889512, -116.545599
Observation Date	2025-01-29
Elevation (ft)	649.146
Drought Index (PDSI)	Severe drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-01-29	0.037008	1.208268	0.07874	Normal	2	3	6
2024-12-30	0.159055	0.846457	0.0	Dry	1	2	2
2024-11-30	0.0	0.171654	0.0	Normal	2	1	2
Result							Normal Conditions - 10

US Army Corps of Engineers

ERDC

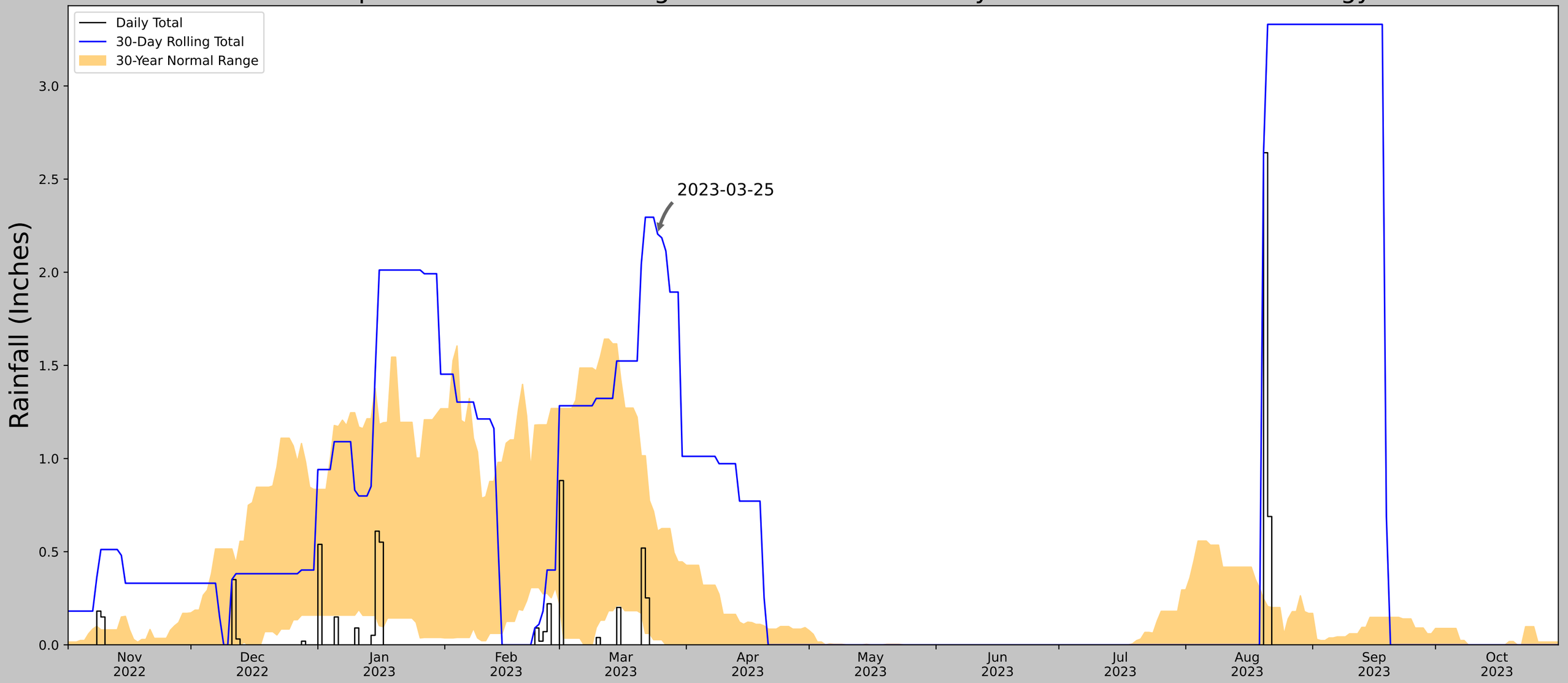
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PALM SPRINGS	33.8275, -116.5097	424.869	4.754	224.277	3.206	10870	90
PALM SPRINGS ASOS	33.8222, -116.5044	409.121	0.476	15.748	0.222	474	0
THOUSAND PALMS 0.7 W	33.8212, -116.3978	253.937	6.438	170.932	3.998	1	0
DEEP CANYON LAB	33.6514, -116.3764	1200.131	14.377	775.262	17.616	8	0

Appendix G Antecedent Precipitation Tool Results

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.871304, -116.545661
Observation Date	2023-05-24
Elevation (ft)	623.972
Drought Index (PDSI)	Moderate wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-05-24	0.0	0.0	0.0	Normal	2	3	6
2023-04-24	0.0	0.098425	0.0	Normal	2	2	4
2023-03-25	0.027559	0.61063	2.204724	Wet	3	1	3
Result							Normal Conditions - 13

US Army Corps of Engineers

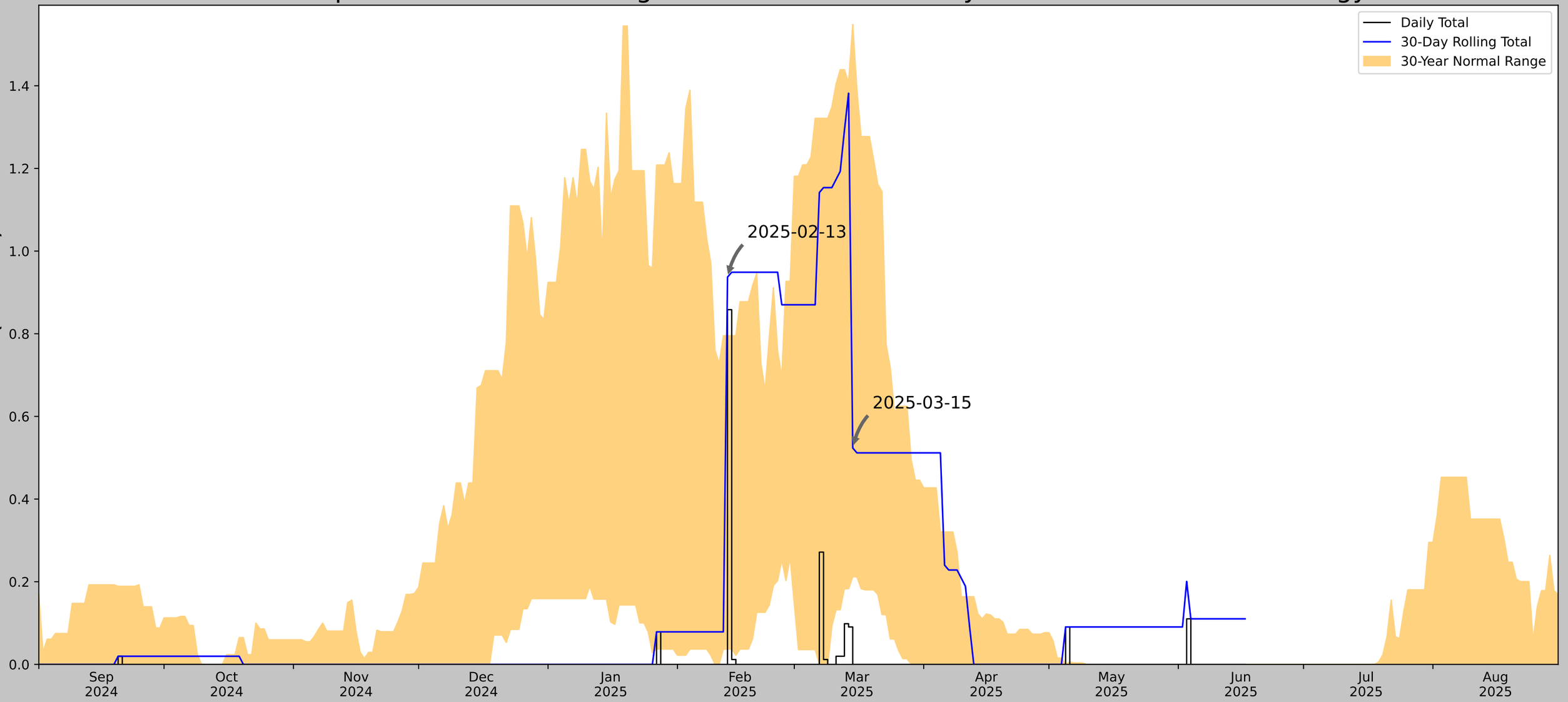
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PALM SPRINGS	33.8275, -116.5097	424.869	3.663	199.103	2.378	10840	90
PALM SPRINGS ASOS	33.8222, -116.5044	409.121	0.476	15.748	0.222	474	0
THOUSAND PALMS 0.7 W	33.8212, -116.3978	253.937	6.438	170.932	3.998	1	0
INDIO FIRE STN	33.7086, -116.2153	-20.997	18.799	445.866	16.841	30	0
DEEP CANYON LAB	33.6514, -116.3764	1200.131	14.377	775.262	17.616	8	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.871304, -116.545661
Observation Date	2025-04-14
Elevation (ft)	623.972
Drought Index (PDSI)	Extreme drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-04-14	0.0	0.122047	0.0	Normal	2	3	6
2025-03-15	0.211811	1.548425	0.523622	Normal	2	2	4
2025-02-13	0.037008	0.795276	0.937008	Wet	3	1	3
Result							Normal Conditions - 13

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PALM SPRINGS	33.8275, -116.5097	424.869	3.663	199.103	2.378	10870	90
PALM SPRINGS ASOS	33.8222, -116.5044	409.121	0.476	15.748	0.222	474	0
THOUSAND PALMS 0.7 W	33.8212, -116.3978	253.937	6.438	170.932	3.998	1	0
DEEP CANYON LAB	33.6514, -116.3764	1200.131	14.377	775.262	17.616	8	0

Appendix F – Site Photographs



Photograph 1: View of North Indian Canyon Drive facing southwest, taken from the intersection with Palm Springs Station Road within the northern portion of the BSA.



Photograph 2: View of North Indian Canyon Drive facing northwest, taken from the intersection with Palm Springs Station Road within the northern portion of the BSA.



Photograph 3: View of Whitewater River (WW1) facing northwest, taken from the upland sand deposits along North Indian Creek Drive.



Photograph 4: View of WW1 facing northeast, taken from the upland sand deposits along North Indian Creek Drive.



Photograph 5: View of WW1 at North Indian Canyon Drive facing northeast.



Photograph 6: View of WW1 along the east side of North Indian Canyon Drive facing upstream (northeast).



Photograph 7: View of WW1 along the east side of North Indian Canyon Drive facing downstream (southeast).



Photograph 8: View of Chino Creek Tributary 1 (CC1) facing upstream (west).



Photograph 9: View of CC1 facing downstream (east) towards North Indian Canyon Drive. Taken from within the center of CC1.



Photograph 10: View of CC1 on the east side of North Indian Canyon Drive facing downstream (east), away from the road. Taken from within the center of CC1.



Photograph 11: View of CC1 facing upstream (west), towards North Indian Canyon Drive. Taken from within the center of CC1.



Photograph 12: View of Chino Creek Tributary 2 (CC2) facing south along the east side of North Indian Canyon Drive.



Photograph 13: Overview of CC2 facing northwest, away from North Indian Canyon Drive. Taken from within the center of CC2.



Photograph 14: View of Chino Creek Tributary 2 (CC2) on the east side of North Indian Canyon Drive facing downstream (east), away from the road. Taken from within the center of CC2.



Photograph 15: View of Chino Creek Tributary 3 (CC3) on the east side of North Indian Canyon Drive facing northwest towards the road. Taken from within the center of CC3.



Photograph 16: View of Chino Creek Tributary 4 (CC4) on the east side of North Indian Canyon Drive facing west, towards the road. Taken from within the center of CC4.

Appendix G – Literature Review

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Catclaw Flat (3411616) OR Morongo Valley (3411615) OR Yucca Valley South (3411614) OR White Water (3311686) OR Desert Hot Springs (3311685) OR Seven Palms Valley (3311684) OR San Jacinto Peak (3311676) OR Palm Springs (3311675) OR Cathedral City (3311674))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia villosa var. aurita chaparral sand-verbena	PDNYC010P1	None	None	G5T2?	S2	1B.1
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Acmispon haydonii pygmy lotus	PDFAB2A0H0	None	None	G3	S3	1B.3
Aimophila ruficeps canescens southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S4	WL
Almutaster pauciflorus alkali marsh aster	PDASTEL010	None	None	G4	S1S2	2B.2
Ambrosia monogyra singlewhorl burrobrush	PDAST50010	None	None	G5	S2	2B.2
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC
Asio otus long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
Aspidoscelis hyperythra orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
Astragalus hornii var. hornii Horn's milk-vetch	PDFAB0F421	None	None	GUT1	S1	1B.1
Astragalus lentiginosus var. coachellae Coachella Valley milk-vetch	PDFAB0FB97	Endangered	None	G5T1	S1	1B.2
Astragalus tricarinatus triple-ribbed milk-vetch	PDFAB0F920	Endangered	None	G2	S2	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Ayenia compacta California ayenia	PDSTE01020	None	None	G4	S3	2B.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Boechera johnstonii Johnston's rockcress	PDBRA060Y0	None	None	G1	S1	1B.2
Boechera lincolnensis Lincoln rockcress	PDBRA061M3	None	None	G4G5	S3	2B.3
Boechera parishii Parish's rockcress	PDBRA061C0	None	None	G2	S2	1B.2
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
Bombus crotchii Crotch's bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus pensylvanicus American bumble bee	IIHYM24260	None	None	G3G4	S2	
Calileptoneta oasa Andreas Canyon leptonetid spider	ILARAU6020	None	None	G1	S1	
Calochortus palmeri var. munzii San Jacinto mariposa-lily	PMLIL0D121	None	None	G3T3	S3	1B.2
Calochortus palmeri var. palmeri Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
Carex occidentalis western sedge	PMCYP039M0	None	None	G4	S3	2B.3
Castilleja lasiorhyncha San Bernardino Mountains owl's-clover	PDSCR0D410	None	None	G2?	S2?	1B.2
Caulanthus simulans Payson's jewelflower	PDBRA0M0H0	None	None	G4	S4	4.2
Chaenactis parishii Parish's chaenactis	PDAST200D0	None	None	G3G4	S3	1B.3
Chaetodipus fallax pallidus pallid San Diego pocket mouse	AMAFD05032	None	None	G5T3T4	S3S4	
Charina umbratica southern rubber boa	ARADA01011	None	Threatened	G2G3	S2	
Chorizanthe parryi var. parryi Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
Chorizanthe xanti var. leucotheca white-bracted spineflower	PDPGN040Z1	None	None	G4T3	S3	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Crotalus ruber red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC
Cypseloides niger black swift	ABNUA01010	None	None	G4	S3	SSC
Deinandra mohavensis Mojave tarplant	PDAST4R0K0	None	Endangered	G3	S3	1B.3

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Desert Fan Palm Oasis Woodland	CTT62300CA	None	None	G3	S3.2	
Desert Fan Palm Oasis Woodland						
Dinacoma caseyi	IICOLX5010	Endangered	None	G1	S1	
Casey's June beetle						
Dodecahema leptoceras	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
slender-horned spineflower						
Draba saxosa	PDBRA110Q2	None	None	G2G3	S2S3	1B.3
Southern California rock draba						
Ensatina eschscholtzii klauberi	AAAAD04013	None	None	G5T2?	S3	WL
large-blotched salamander						
Eremarionta morongoana	IMGASB9070	None	None	G1G3	S1	
Morongo (=Colorado) desertsnail						
Eriastrum harwoodii	PDPLM030B1	None	None	G2	S2	1B.2
Harwood's eriastrum						
Erigeron parishii	PDAST3M310	Threatened	None	G2	S2	1B.1
Parish's daisy						
Euphorbia arizonica	PDEUP0D060	None	None	G5	S3	2B.3
Arizona spurge						
Euphorbia misera	PDEUP0Q1B0	None	None	G5	S2	2B.2
cliff spurge						
Euphorbia platysperma	PDEUP0D1X0	None	None	G3	S1	1B.2
flat-seeded spurge						
Falco mexicanus	ABNKD06090	None	None	G5	S4	WL
prairie falcon						
Galium angustifolium ssp. jacinticum	PDRUB0N04C	None	None	G5T2?	S2?	1B.3
San Jacinto Mountains bedstraw						
Glaucomys oregonensis californicus	AMAFB09021	None	None	G5T1T2	S1S2	SSC
San Bernardino flying squirrel						
Gopherus agassizii	ARAAF01012	Threatened	Threatened	G3	S2S3	
desert tortoise						
Halictus harmonius	IIHYM75010	None	None	G3	S3	
haromonius halictid bee						
Heuchera hirsutissima	PDSAX0E0J0	None	None	G3	S3	1B.3
shaggy-haired alumroot						
Heuchera parishii	PDSAX0E1F0	None	None	G3	S3	1B.3
Parish's alumroot						
Icteria virens	ABPBX24010	None	None	G5	S4	SSC
yellow-breasted chat						
Imperata brevifolia	PMPOA3D020	None	None	G3	S3	2B.1
California satintail						
Ivesia argyrocoma var. argyrocoma	PDROS0X021	None	None	G2T2	S2	1B.2
silver-haired ivesia						

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ivesia callida Tahquitz ivesia	PDROS0X040	None	Rare	G1	S1	1B.3
Keckiella rothrockii var. jacintensis San Jacinto Mountains keckiella	PDSCR0T061	None	None	G4T2T3	S2S3	1B.3
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G4G5	S3	SSC
Lilium parryi lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
Linanthus jaegeri San Jacinto linanthus	PDPLM08030	None	None	G2	S2	1B.2
Linanthus maculatus ssp. maculatus Little San Bernardino Mtns. linanthus	PDPLM041Y1	None	None	G2T2	S2	1B.2
Macrobaenetes valgum Coachella giant sand treader cricket	IIORT22020	None	None	G1G2	S2	
Malaxis monophyllos var. brachypoda white bog adder's-mouth	PMORC1R010	None	None	G5T5	S1	2B.1
Meesia uliginosa broad-nerved hump moss	NBMUS4L030	None	None	G5	S3	2B.2
Mentzelia tricuspis spiny-hair blazing star	PDLOA031T0	None	None	G4	S2	2B.1
Mesquite Bosque Mesquite Bosque	CTT61820CA	None	None	G3	S2.1	
Mojave Riparian Forest Mojave Riparian Forest	CTT61700CA	None	None	G1	S1.1	
Monardella nana ssp. leptosiphon San Felipe monardella	PDLAM180F2	None	None	G4G5T2Q	S2	1B.2
Monardella robisonii Robison's monardella	PDLAM180K0	None	None	G3	S3	1B.3
Myiarchus tyrannulus brown-crested flycatcher	ABPAE43080	None	None	G5	S3	WL
Nemacaulis denudata var. gracilis slender cottonheads	PDPGN0G012	None	None	G3G4T3?	S2	2B.2
Neotamias speciosus speciosus lodgepole chipmunk	AMAFB02172	None	None	G4T3T4	S2	
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nyctinomops femorosaccus pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ovis canadensis nelsoni desert bighorn sheep	AMALE04013	None	None	G4T3	S3	FP
Ovis canadensis nelsoni pop. 2 Peninsular bighorn sheep DPS	AMALE04012	Endangered	Threatened	G4T3Q	S2	FP
Paranomada californica California cuckoo bee	IIHYM82010	None	None	G1	S1	
Parnopes borregoensis Borrego parnopes cuckoo wasp	IIHYM73010	None	None	G1G2	S1S2	
Pelazoneuron puberulum var. sonorense Sonoran maiden fern	PPTHE05192	None	None	G5T4	S2	2B.2
Penstemon pseudospectabilis ssp. pseudospectabilis desert beardtongue	PDSCR1L562	None	None	G4G5T4	S3	2B.2
Perognathus longimembris bangsi Palm Springs pocket mouse	AMAFD01043	None	None	G5T2	S1	SSC
Perognathus longimembris brevinasus Los Angeles pocket mouse	AMAFD01041	None	None	G5T2	S1S2	SSC
Petalonyx linearis narrow-leaf sandpaper-plant	PDLOA04010	None	None	G4	S3?	2B.3
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G4	S4	SSC
Phrynosoma mcallii flat-tailed horned lizard	ARACF12040	None	None	G3	S3	SSC
Piranga rubra summer tanager	ABPBX45030	None	None	G5	S1	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
Polioptila melanura black-tailed gnatcatcher	ABPBJ08030	None	None	G5	S3S4	WL
Potentilla rimicola cliff cinquefoil	PDROS1B2G0	None	None	G2	S1	2B.3
Psiloscops flammeolus flammulated owl	ABNSB01020	None	None	G4	S2S4	
Pyrocephalus rubinus vermilion flycatcher	ABPAE36010	None	None	G5	S2S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S2	WL
Saltugilia latimeri Latimer's woodland-gilia	PDPLM0H010	None	None	G3	S3	1B.2
Selaginella eremophila desert spike-moss	PPSEL010G0	None	None	G4	S2S3	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Setophaga petechia yellow warbler	ABPBX03010	None	None	G5	S3	SSC
Sidotheca emarginata white-margined oxytheca	PDPGN0J030	None	None	G3	S3	1B.3
Southern Riparian Forest Southern Riparian Forest	CTT61300CA	None	None	G4	S4	
Stemodia durantifolia purple stemodia	PDSCR1U010	None	None	G5	S2	2B.1
Stenopelmatus cahuilaensis Coachella Valley jerusalem cricket	IIORT26010	None	None	G1G2	S2	
Streptanthus bernardinus Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
Streptanthus campestris southern jewelflower	PDBRA2G0B0	None	None	G3	S3	1B.3
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Texella deserticola Whitewater Canyon harvestman	ILARA25160	None	None	G1	S1	
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Toxostoma crissale Crissal thrasher	ABPBK06090	None	None	G5	S2	SSC
Toxostoma lecontei Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
Trichostema austromontanum ssp. compactum Hidden Lake bluecurls	PDLAM22022	Delisted	None	G3G4T1	S1	1B.1
Uma inornata Coachella Valley fringe-toed lizard	ARACF15010	Threatened	Endangered	G1Q	S1	
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S3	
Xerospermophilus tereticaudus chlorus Palm Springs round-tailed ground squirrel	AMAFB05161	None	None	G5T2	S2	SSC
Xylorhiza cognata Mecca-aster	PDASTA1010	None	None	G2	S2	1B.2

Record Count: 120

United States Department of the Interior

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

In Reply Refer To: 06/02/2025 21:41:21 UTC
Project Code: 2025-0060256
Project Name: Indian Canyon Drive, Palm Springs

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

To Whom It May Concern:

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

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

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

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

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

https://www.fws.gov/service/esa-section-7-consultation

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

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

This species list is provided by:

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

PROJECT SUMMARY

Project Code: 2025-0060256
Project Name: Indian Canyon Drive, Palm Springs
Project Type: Bridge - New Construction
Project Description: Improvements to Indian Canyon Drive to address floodwater and blowsand events that frequently close the road.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.88299015,-116.54545796135619,14z



Counties: Riverside County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 threatened, endangered, or candidate species on this species list.

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

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

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

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

MAMMALS

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

BIRDS

NAME	STATUS
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

REPTILES

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

AMPHIBIANS

NAME	STATUS
Mountain Yellow-legged Frog *Rana muscosa* Population: Southern California DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8037	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Coachella Valley Milk-vetch *Astragalus lentiginosus var. coachellae* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7426	Endangered
Slender-horned Spineflower *Dodecahema leptoceras* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4007	Endangered
Triple-ribbed Milk-vetch *Astragalus tricarinatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3370	Endangered

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Coachella Valley Milk-vetch *Astragalus lentiginosus var. coachellae* https://ecos.fws.gov/ecp/species/7426#crithab	Final

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Kristin Szabo
Address: 40810 County Center Drive
Address Line 2: Suite 200
City: Temecula
State: CA
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LEAD AGENCY CONTACT INFORMATION

Lead Agency: California Department of Transportation District 8

Appendix H – Wildlife Compendium

WILDLIFE COMPENDIUM

***SCIURIDAE* —SQUIRRELS**

***Ammospermophilus leucurus* —white-tailed antelope squirrel**

***CORVIDAE* —CROWS & JAYS**

***Corvus brachyrhynchos* —American crow**

***Corvus corax* —common raven**

***PHRYNOSOMATIDAE* —IGUANID LIZARDS**

***Callisaurus draconoides* —zebra-tailed lizard**

***Phrynosoma platyrhinos* —desert horned lizard**

***COLUMBIDAE* —PIGEONS & DOVES**

Columba livia* —rock pigeon (rock dove)

***Zenaida macroura* —mourning dove**

***TYRANNIDAE* —TYRANT FLYCATCHERS**

***Tyrannus vociferans* —Cassin's kingbird**

***IGUANIDAE* —IGUANAS**

***Dipsosaurus dorsalis* —desert iguana**

***LEPORIDAE* —HARES & RABBITS**

***Lepus californicus* —black-tailed jackrabbit**

***MIMIDAE* —MOCKINGBIRDS & THRASHERS**

Mimus polyglottos —northern mockingbird

*signifies introduced (non-native) species

Appendix I – Potential to Occur Table

Appendix I, Table 1: Listed, Proposed Species, Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur in the Project Area.

Common Name	Scientific Name	Status[1] FED/STATE/CNPS/ CVMSHCP	General Habitat Description[2]	Habitat Present/ Absent in the BSA[1]	Rationale
			Plants		
chaparral sand-verbena	*Abronia villosa var. aurita*	None/None/1B.1/None	Chaparral, Coastal scrub, Desert dunes; Sandy/annual herb/(Jan)Mar–Sep/245–5250	HA	Although soils in the study area are sandy, no dune habitat is present in the study area. The species is not expected.
pygmy lotus	*Acmispon haydonii*	None/None/1B.3/None	Pinyon and juniper woodland, Sonoran desert scrub; Rocky/perennial herb/Jan–June/1705–3935	HA	Study area occurs outside of species elevation and geographic range.
alkali marsh aster	*Almutaster pauciflorus*	None/None/2B.2/None	Meadows and seeps; Alkaline/perennial herb/June – Oct/785–2625	HA	The study area lacks appropriate soils or habitat characteristics. The species is not expected.
Wright's beebrush	*Aloysia wrightii*	None/None/4.3/None	Joshua tree "woodland", Pinyon and juniper woodland; Carbonate (often), Rocky/perennial evergreen shrub/Apr–Oct/2955–5250	HA	Study area occurs outside of species elevation and geographic range.
singlewhorl burrobrush	*Ambrosia monogyra*	None/None/2B.2/None	Chaparral, Sonoran desert scrub; Sandy/perennial shrub/Aug–Nov/35–1640	HA	Suitable habitat is present in the study area, however the species would have been detectible during focused studies and was absent from the study area.

Horn's milk-vetch	*Astragalus hornii var. hornii*	None/None/1B.1/None	Meadows and seeps, Playas; Alkaline, Lake Margins/annual herb/May–Oct/195–2790	HA	The study area lacks appropriate soils or habitat characteristics. The species is not expected.
Borrego milk-vetch	*Astragalus lentiginosus var. borreganus*	None/None/4.3/None	Mojavean desert scrub, Sonoran desert scrub; Sandy/annual herb/Feb–May/100–2935	HA	The species is associated with sand dune habitat in Mojavean/ Sonoran desert scrub which are absent from the study area. The species is not expected.
Coachella Valley milk-vetch	*Astragalus lentiginosus var. coachellae*	FE/None/1B.2/ CVMSHCP	Desert dunes, Sonoran desert scrub (sandy)/annual/perennial herb/Feb–May/130–2150	A/ CH	The study area provides suitable habitat for this species. A CNDDB occurrence record indicated that this species was detected within the study area in 2014 (Record # PDFAB0FB97). But the species was not found during 2023 and 2025 rare plant focused surveys, and is presumed Absent from the BSA. The study area overlaps critical habitat for this species.
triple-ribbed milk-vetch	*Astragalus tricarinatus*	FE/None/1B.2/ CVMSHCP	Joshua tree "woodland", Sonoran desert scrub; Gravelly (sometimes), Sandy (sometimes)/perennial herb/Feb–May/1475–3905	HA	The study area occurs outside of the species elevation range and habitat onsite is not suitable for this species.
Parish's brittlescale	*Atriplex parishii*	None/None/1B.1/None	Chenopod scrub, Playas, Vernal pools; Alkaline/annual herb/June–Oct/80–6235	HA	Project site lacks chenopod scrub or vernal/alkaline habitat. Not expected to occur.
California ayenia	*Ayenia compacta*	None/None/2B.3/None	Mojavean desert scrub, Sonoran desert scrub; Rocky/perennial herb/Mar–Apr/490–3595	HA	Species associated with rocky environs within desert scrub which are not present in the study area. Species is not expected.

Johnston's rockcress	*Boechera johnstonii*	None/None/1B.2/None	Chaparral, Lower montane coniferous forest; Clay/perennial herb/Feb–June/4430–7055	HA	Study area occurs outside of species elevation and geographic range.
Lincoln rockcress	*Boechera lincolnensis*	None/None/2B.3/None	Chenopod scrub, Mojavean desert scrub; Carbonate/ perennial herb/Mar–May/3610–8875	HA	Study area occurs outside of species elevation and geographic range.
Parish's rockcress	*Boechera parishii*	None/None/1B.2/None	Pebble (Pavement) plain, Pinyon and juniper woodland, Upper montane coniferous forest; Carbonate (sometimes), Rocky/perennial herb/Apr–May/5805–9810	HA	Study area occurs outside of species elevation and geographic range.
San Jacinto mariposa-lily	*Calochortus palmeri var. munzii*	None/None/1B.2/None	Chaparral, Lower montane coniferous forest, Meadows and seeps/perennial bulbiferous herb/Apr–July/2805–7220	HA	Study area occurs outside of species elevation and geographic range.
Palmer's mariposa-lily	*Calochortus palmeri var. palmeri*	None/None/1B.2/None	Chaparral, Lower montane coniferous forest, Meadows and seeps; Mesic/perennial bulbiferous herb/Apr–July/2330–7840	HA	Study area occurs outside of species elevation and geographic range.
western sedge	*Carex occidentalis*	None/None/2B.3/None	Lower montane coniferous forest, Meadows and seeps/perennial rhizomatous herb/June–Aug/5395–10285	HA	Study area occurs outside of species elevation and geographic range.
San Bernardino Mountains owl's-clover	*Castilleja lasiorhyncha*	None/None/1B.2/None	Chaparral, Meadows and seeps, Pebble (Pavement) plain, Riparian woodland, Upper montane coniferous forest;	HA	Study area occurs outside of species elevation and geographic range.

			Mesic/annual herb (hemiparasitic)/May–Aug/4265–7840		
Payson's jewelflower	*Caulanthus simulans*	None/None/4.2/None	Chaparral, Coastal scrub; Granitic, Sandy/annual herb/(Feb)Mar–May(June)/295–7220	HA	No suitable chaparral or scrub habitat on the study area. Species is not expected.
Parish's chaenactis	*Chaenactis parishii*	None/None/1B.3/None	Chaparral (rocky)/perennial herb/May–July/4265–8205	HA	Study area occurs outside of species elevation and geographic range.
Peninsular spineflower	*Chorizanthe leptotheca*	None/None/4.2/None	Chaparral, Coastal scrub, Lower montane coniferous forest; Granitic/annual herb/May–Aug/985–6235	HA	No suitable chaparral or scrub habitat on the study area. Species is not expected.
Parry's spineflower	*Chorizanthe parryi var. parryi*	None/None/1B.1/None	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Openings, Rocky (sometimes), Sandy (sometimes)/annual herb/Apr–June/900–4005	HA	No suitable chaparral, scrub, or other habitat is present on the study area. Species is not expected.
white-bracted spineflower	*Chorizanthe xanti var. leucotheca*	None/None/1B.2/None	Coastal scrub (alluvial fans), Mojavean desert scrub, Pinyon and juniper woodland; Gravelly (sometimes), Sandy (sometimes)/annual herb/Apr–June/985–3935	HA	Study area occurs outside of species elevation for this species, therefore it is not expected.

desert bird's-beak	*Cordylanthus eremicus ssp. eremicus*	None/None/4.3/None	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland/annual herb (hemiparasitic)/July–Oct/3280–9845	HA	Study area occurs outside of species elevation and geographic range.
pointed dodder	*Cuscuta californica var. apiculata*	None/None/3/None	Mojavean desert scrub, Sonoran desert scrub; Sandy/annual vine (parasitic)/Feb–Aug/0–1640	A	Study area contains suitable habitat (Sonoran Desert Scrub and sandy soils). This species was not observed during focused studies
Mojave tarplant	*Deinandra mohavensis*	None/SE/1B.3/None	Chaparral, Coastal scrub, Riparian scrub; Mesic/annual herb/(Jan–May)June–Oct/2100–5250	HA	Study area occurs outside of species elevation and geographic range.
Johnston's monkeyflower	*Diplacus johnstonii*	None/None/4.3/None	Lower montane coniferous forest (disturbed areas, gravelly, roadsides, rocky, scree)/annual herb/May–Aug/3200–9580	HA	Study area occurs outside of species elevation and geographic range.
slender-horned spineflower	*Dodecahema leptoceras*	FE/SE/1B.1/None	Chaparral, Cismontane woodland, Coastal scrub (alluvial fans); Sandy/annual herb/Apr–June/655–2495	HA	The study area does not have suitable scrub or chaparral habitat that would support this species. Not expected to occur.
Southern California rock draba	*Draba saxosa*	None/None/1B.3/None	Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest; Rocky/perennial herb/June–Sep/8005–11810	HA	Study area occurs outside of species elevation and geographic range.
Harwood's eriastrum	*Eriastrum harwoodii*	None/None/1B.2/None	Desert dunes/annual herb/Mar–June/410–3000	HA	No desert dunes are present on the study area.

San Jacinto Mountains daisy	*Erigeron breweri var. jacinteus*	None/None/4.3/None	Subalpine coniferous forest, Upper montane coniferous forest; Rocky/perennial rhizomatous herb/June–Sep/8860–9515	HA	Study area occurs outside of species elevation and geographic range.
Parish's daisy	*Erigeron parishii*	FT/None/1B.1/None	Mojavean desert scrub, Pinyon and juniper woodland; Carbonate (usually), Granitic (sometimes)/perennial herb/May–Aug/2625–6560	HA	Study area occurs outside of species elevation and geographic range.
Palomar monkeyflower	*Erythranthe diffusa*	None/None/4.3/None	Chaparral, Lower montane coniferous forest; Gravelly (sometimes), Sandy (sometimes)/annual herb/Apr–June/4005–6005	HA	Study area occurs outside of species elevation and geographic range.
Joshua Tree poppy	*Eschscholzia androuxii*	None/None/4.3/None	Joshua tree "woodland", Mojavean desert scrub; Flats, Gravelly, Rocky, Sandy, Slopes, Washes/annual herb/Feb–May(June)/1920–5530	HA	Study area occurs outside of species elevation range. No suitable habitat is present.
Arizona spurge	*Euphorbia arizonica*	None/None/2B.3/None	Sonoran desert scrub (sandy)/perennial herb/Mar–Apr/165–985	A	Suitable habitat is present within portions of the study area, however this species was not documented during focused surveys when it would have been identifiable. This species is not present.
cliff spurge	*Euphorbia misera*	None/None/2B.2/None	Coastal bluff scrub, Coastal scrub, Mojavean desert scrub; Rocky/perennial shrub/(Oct)Dec–Aug/35–1640	HA	Species requires a rocky microhabitat, and this is not present on the study area; thus the species is not expected.

flat-seeded spurge	*Euphorbia platysperma*	None/None/1B.2/None	Desert dunes, Sonoran desert scrub (sandy)/annual herb/Feb–Sep/215–330	A	Suitable habitat is present within portions of the study area, however this species was not documented during focused surveys when it would have been identifiable. This species is not present.
San Antonio Canyon bedstraw	*Galium angustifolium ssp. gabrielense*	None/None/4.3/None	Chaparral, Lower montane coniferous forest; Granitic, Rocky (sometimes), Sandy (sometimes)/perennial herb/Apr–Aug/3935–8695	HA	Study area occurs outside of species elevation and geographic range.
slender bedstraw	*Galium angustifolium ssp. gracillimum*	None/None/4.2/None	Joshua tree "woodland", Sonoran desert scrub; Granitic, Rocky/perennial herb/Apr–June(July)/425–5085	HA	The study area lacks rocky substrates for this species and thus the desert scrub is not suitable for the species.
San Jacinto Mountains bedstraw	*Galium angustifolium ssp. jacinticum*	None/None/1B.3/None	Lower montane coniferous forest/perennial herb/June–Aug/4430–6890	HA	Study area occurs outside of species elevation and geographic range.
Jepson's bedstraw	*Galium jepsonii*	None/None/4.3/None	Lower montane coniferous forest, Upper montane coniferous forest; Granitic, Gravelly (sometimes), Rocky (sometimes)/perennial rhizomatous herb/July–Aug/5055–8205	HA	Study area occurs outside of species elevation and geographic range.
Johnston's bedstraw	*Galium johnstonii*	None/None/4.3/None	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland, Riparian woodland/perennial herb/June–July/4005–7545	HA	Study area occurs outside of species elevation and geographic range.

shaggy-haired alumroot	*Heuchera hirsutissima*	None/None/1B.3/None	Subalpine coniferous forest, Upper montane coniferous forest; Granitic, Rocky/perennial rhizomatous herb/(May)June–July/4985–11485	HA	Study area occurs outside of species elevation and geographic range.
Parish's alumroot	*Heuchera parishii*	None/None/1B.3/None	Alpine boulder and rock field, Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest; Carbonate (sometimes), Rocky/perennial rhizomatous herb/June–Aug/4920–12470	HA	Study area occurs outside of species elevation and geographic range.
Newberry's velvet-mallow	*Horsfordia newberryi*	None/None/4.3/None	Sonoran desert scrub (rocky)/perennial shrub/Feb–Dec/10–2625	HA	The study area lacks rocky substrates for this species and thus the desert scrub is not suitable for the species.
beautiful hulsea	*Hulsea vestita ssp. callicarpha*	None/None/4.2/None	Chaparral, Lower montane coniferous forest; Granitic, Gravelly (sometimes), Rocky (sometimes)/perennial herb/May–Oct/3000–10005	HA	Study area occurs outside of species elevation and geographic range.
Parry's sunflower	*Hulsea vestita ssp. parryi*	None/None/4.3/None	Lower montane coniferous forest, Pinyon and juniper woodland, Upper montane coniferous forest; Carbonate (sometimes), Granitic (sometimes), Openings, Rocky/perennial herb/Apr–Aug/4495–9500	HA	Study area occurs outside of species elevation and geographic range.

California satintail	*Imperata brevifolia*	None/None/2B.1/None	Chaparral, Coastal scrub, Meadows and seeps (often alkali), Mojavean desert scrub, Riparian scrub; Mesic/perennial rhizomatous herb/Sep–May/0–3985	HA	The study area does not provide mesic conditions or suitable habitat for this species.
silver-haired ivesia	*Ivesia argyrocoma var. argyrocoma*	None/None/1B.2/None	Meadows and seeps (alkaline), Pebble (Pavement) plain, Upper montane coniferous forest/perennial herb/June–Aug/4800–9710	HA	Study area occurs outside of species elevation and geographic range.
Tahquitz ivesia	*Ivesia callida*	None/SR/1B.3/None	Upper montane coniferous forest (granitic, rocky)/perennial herb/July–Sep/7905–8040	HA	Study area occurs outside of species elevation and geographic range.
ribbed cryptantha	*Johnstonella costata*	None/None/4.3/None	Desert dunes, Mojavean desert scrub, Sonoran desert scrub; Sandy/annual herb/Feb–May/-195–1640	HA	Portions of the study area may be suitable for the species, however the species was not found during rare plant focused surveys; therefore it is not present.
winged cryptantha	*Johnstonella holoptera*	None/None/4.3/None	Mojavean desert scrub, Sonoran desert scrub/annual herb/Mar–Apr/330–5545	A	Portions of the study area may be suitable for the species, however the species was not found during rare plant focused surveys; therefore it is not present.
southwestern spiny rush	*Juncus acutus ssp. leopoldii*	None/None/4.2/None	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps (alkaline seeps)/perennial rhizomatous herb/(Mar)May–June/10–2955	HA	The study area lacks appropriate soils or habitat characteristics. The species is not expected.

Duran's rush	*Juncus duranii*	None/None/4.3/None	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest; Mesic/perennial rhizomatous herb/July–Aug/5800–9200	HA	Study area occurs outside of species elevation and geographic range.
San Jacinto Mountains keckiella	*Keckiella rothrockii var. jacintensis*	None/None/1B.3/None	Upper montane coniferous forest; Granitic/perennial shrub/(June) July–Aug (Sep)/7300–9825	HA	Study area occurs outside of species elevation and geographic range.
lemon lily	*Lilium parryi*	None/None/1B.2/None	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest; Mesic/perennial bulbiferous herb/July–Aug/4005–9005	HA	Study area occurs outside of species elevation and geographic range.
San Jacinto linanthus	*Linanthus jaegeri*	None/None/1B.2/None	Subalpine coniferous forest, Upper montane coniferous forest; Granitic, Rocky/perennial herb/July–Sep/7200–10005	HA	Study area occurs outside of species elevation and geographic range.
Little San Bernardino Mtns. linanthus	*Linanthus maculatus ssp. maculatus*	None/None/1B.2/ CVMSHCP	Desert dunes, Joshua tree "woodland", Mojavean desert scrub, Sonoran desert scrub; Sandy/annual herb/Mar–May/460–4005	A	Suitable habitat is present within the Sonoran desert scrub. There are no recent records for this species in the regional vicinity (species found in vicinity over 100 years ago), and the species was not found during the focused survey; therefore it is considered absent.
Torrey's box-thorn	*Lycium torreyi*	None/None/4.2/None	Mojavean desert scrub, Sonoran desert scrub; Rocky,	A	Portions of the study area may be suitable for the species, however

			Sandy, Streambanks, Washes/perennial shrub/(Jan–Feb) Mar–June(Sep–Nov)/-165–4005		the species was not found during rare plant focused surveys; therefore it is not present.
white bog adder's-mouth	*Malaxis monophyllos var. brachypoda*	None/None/2B.1/None	Bogs and fens, Meadows and seeps, Upper montane coniferous forest; Mesic/perennial bulbiferous herb/June–Aug/7220–9000	HA	Study area occurs outside of species elevation and geographic range.
three-ranked hump moss	*Meesia triquetra*	None/None/4.2/None	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest (mesic)/moss/July/4265–9690	HA	Study area occurs outside of species elevation and geographic range.
broad-nerved hump moss	*Meesia uliginosa*	None/None/2B.2/None	Bogs and fens, Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest/moss/July–Oct/3970–9200	HA	Study area occurs outside of species elevation and geographic range.
spiny-hair blazing star	*Mentzelia tricuspis*	None/None/2B.1/None	Mojavean desert scrub; Gravelly, Sandy, Slopes, Washes/annual herb/Mar–May/490–4200	HA	The project occurs outside of the species geographic range , thus no suitable habitat is present.
San Felipe monardella	*Monardella nana ssp. leptosiphon*	None/None/1B.2/None	Chaparral, Lower montane coniferous forest/perennial rhizomatous herb/June–July/3935–6085	HA	The study area occurs outside of species elevation and geographic range.

Robison's monardella	*Monardella robisonii*	None/None/1B.3/None	Pinyon and juniper woodland/perennial rhizomatous herb/(Feb)Apr–Sep(Oct)/2000–4920	HA	The study area does not provide woodland habitat, thus no suitable habitat is present.
California muhly	*Muhlenbergia californica*	None/None/4.3/None	Chaparral, Coastal scrub, Lower montane coniferous forest, Meadows and seeps; Mesic, Seeps, Streambanks/perennial rhizomatous herb/June–Sep/330–6560	HA	There is not suitable habitat within the study area
slender cottonheads	*Nemacaulis denudata var. gracilis*	None/None/2B.2/None	Coastal dunes, Desert dunes, Sonoran desert scrub/annual herb/(Mar)Apr–May/-165–1310	A	Suitable habitat is present within the project site. Species was not found during the focused survey.
Sonoran maiden fern	*Pelazoneuron puberulum var. sonorense*	None/None/2B.2/None	Meadows and seeps (seeps, streams)/perennial rhizomatous herb/Jan–Sep/165–2000	HA	The study area lacks appropriate habitat characteristics. The species is not expected.
San Jacinto beardtongue	*Penstemon clevelandii var. connatus*	None/None/4.3/None	Chaparral, Pinyon and juniper woodland, Sonoran desert scrub; Rocky/perennial herb/Mar–May/1310–4920	HA	No suitable habitat is present on the study area and project occurs outside of species geographic range.
desert beardtongue	*Penstemon pseudospectabilis ssp. pseudospectabilis*	None/None/2B.2/None	Mojavean desert scrub, Sonoran desert scrub; Rocky (sometimes), Sandy (often), Washes (often)/perennial herb/Jan–May/260–6350	A	Habitat present but species absent since it wasn't detected during the survey. The species is presumed absent.
narrow-leaf sandpaper-plant	*Petalonyx linearis*	None/None/2B.3/None	Mojavean desert scrub, Sonoran desert scrub; Rocky (sometimes), Sandy (sometimes)/perennial	A	Habitat present but species absent since it wasn't detected during the survey. No nearby records.

			shrub/(Jan–Feb)Mar–May(June–Dec)/-80–3660		
cliff cinquefoil	*Potentilla rimicola*	None/None/2B.3/None	Subalpine coniferous forest, Upper montane coniferous forest; Granitic, Rocky/perennial herb/July–Sep/7875–9185	HA	Study area occurs outside of species elevation and geographic range.
Latimer's woodland-gilia	*Saltugilia latimeri*	None/None/1B.2/None	Chaparral, Mojavean desert scrub, Pinyon and juniper woodland; Granitic (often), Rocky (sometimes), Sandy (sometimes), Washes (sometimes)/annual herb/Mar–June/1310–6235	HA	Study area occurs outside of species elevation and geographic range.
Davidson's stonecrop	*Sedum niveum*	None/None/4.2/None	Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest; Rocky/perennial rhizomatous herb/June–Aug/6810–9845	HA	Study area occurs outside of species elevation and geographic range.
bluish spike-moss	*Selaginella asprella*	None/None/4.3/None	Cismontane woodland, Lower montane coniferous forest, Pinyon and juniper woodland, Subalpine coniferous forest, Upper montane coniferous forest; Granitic, Rocky/perennial rhizomatous herb/July/5250–8860	HA	Study area occurs outside of species elevation and geographic range.
desert spike-moss	*Selaginella eremophila*	None/None/2B.2/None	Chaparral, Sonoran desert scrub (gravelly, rocky)/perennial rhizomatous herb/(May)June(July)/655–4250	HA	Study area lacks gravel/rocky microhabitat required for species, thus no suitable habitat is present.

chickweed oxytheca	*Sidotheca caryophylloides*	None/None/4.3/None	Lower montane coniferous forest (sandy)/annual herb/July–Sep(Oct)/3655–8530	HA	Study area occurs outside of species elevation and geographic range.
white-margined oxytheca	*Sidotheca emarginata*	None/None/1B.3/None	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland/annual herb/(Feb)Apr–July(Aug)/3935–8205	HA	Study area occurs outside of species elevation and geographic range.
purple stemodia	*Stemodia durantifolia*	None/None/2B.1/None	Sonoran desert scrub (often mesic, sandy)/perennial herb/(Jan) Apr–Dec/590–985	HP	Suitable habitat is present in the study area.
Laguna Mountains jewelflower	*Streptanthus bernardinus*	None/None/4.3/None	Chaparral, Lower montane coniferous forest/perennial herb/May–Aug/2200–8205	HA	Study area occurs outside of species elevation and geographic range.
southern jewelflower	*Streptanthus campestris*	None/None/1B.3/None	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland; Rocky/perennial herb/(Apr)May–July/2955–7545	HA	No suitable habitat is present on the study area and project occurs outside of species geographic range.
San Bernardino aster	*Symphyotrichum defoliatum*	None/None/1B.2/None	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Valley and foothill grassland (vernally mesic); Streambanks/perennial rhizomatous herb/July–Nov/5–6695	HA	No suitable habitat is present on the study area and project occurs outside of species geographic range.

Lemmon's syntrichopappus	*Syntrichopappus lemmonii*	None/None/4.3/None	Chaparral, Joshua tree "woodland", Pinyon and juniper woodland; Gravelly (sometimes), Sandy (sometimes)/annual herb/Apr–May(June)/1640–6005	HA	There is not woodland habitat in the study area, this species would not occur.
Hall's tetracoccus	*Tetracoccus hallii*	None/None/4.3/None	Mojavean desert scrub, Sonoran desert scrub/perennial deciduous shrub/Jan–May/100–3935	A	Suitable habitat present in the desert scrub in the study area. This deciduous shrub would have been observed during the rare plant focused survey, therefore it is deemed absent.
Hidden Lake bluecurls	*Trichostema austromontanum ssp. compactum*	FD/None/1B.1/None	Upper montane coniferous forest (seasonally submerged lake margins)/annual herb/July–Sep/7875–8795	HA	Study area occurs outside of species elevation and geographic range.
Mecca-aster	*Xylorhiza cognata*	None/None/1B.2/CVMSHCP	Sonoran desert scrub/perennial herb/Jan–June/65–1310	HP	Suitable habitat is present in the study area. Species was not documented during the focused survey.
Amphibians					
California red-legged frog	*Rana draytonii*	FT / SSC/ None/ None	Aquatic | Artificial flowing waters | Artificial standing waters | Freshwater marsh | Marsh & swamp | Riparian forest | Riparian scrub | Riparian woodland | Sacramento/San Joaquin flowing waters | Sacramento/San Joaquin standing waters | South coast	HA	Study area is outside of species geographic range. No suitable habitat present.

			flow; Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.		
southern mountain yellow-legged frog	*Rana muscosa*	FE / SE/ None/ None	Aquatic; 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.	HA	Study area is outside of species geographic range. No suitable habitat present.
Birds					
golden eagle	*Aquila chrysaetos*	BGEPA / FP /None / None	Broadleaved upland forest | Cismontane woodland | Coastal prairie | Great Basin grassland | Great Basin scrub | Lower montane coniferous forest | Pinon & juniper woodlands | Upper montane coniferous forest | Valley & foothill grassland; Rolling foothills, mountain areas, sage-juniper flats, and desert.	HP (foraging only)	This species could potentially forage over the study area. No suitable breeding habitat is present.
long-eared owl	*Asio otus*	None / SSC/ None /None	Cismontane woodland | Great Basin scrub | Riparian forest | Riparian woodland | Upper montane coniferous forest;	HA	No riparian habitat is present within the study area. Species not expected to occur.

			Riparian bottomlands grown to tall willows and cottonwoods; also, belts of live oak paralleling stream courses.		
burrowing owl	*Athene cunicularia*	None / SCE, SSC / None/ CVMSHCP	Coastal prairie | Coastal scrub | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Sonoran desert scrub | Valley & foothill grassland; Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	HP	Suitable foraging habitat was present throughout the study area. A few potential burrows were documented in the study area and the focused survey determined the species was absent. An occupied burrow was documented west of the study area.
black swift	*Cypseloides niger*	None / SSC/None / None	Nests in moist crevices, caves, and cliffs behind or adjacent to waterfalls in deep canyons; forages over a wide range of habitats; Coastal belt of Santa Cruz and Monterey counties; central and southern Sierra Nevada; San Bernardino and San Jacinto mountains.	HA	No nesting habitat is present in the study area. There is a potential for individuals to forage in the project vicinity.
yellow-breasted chat	*Icteria virens*	None / SSC/ None/ CVMSHCP	Riparian forest | Riparian scrub | Riparian woodland; Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses.	HA	No riparian habitat is present within the study area. Species not expected to occur.
loggerhead shrike	*Lanius ludovicianus*	None / SSC/ None / None	Broadleaved upland forest | Desert wash | Joshua tree woodland | Mojavean desert scrub | Pinon & juniper	HP (Foraging only)	No suitable breeding habitat or large shrubs/woodlands for breeding are present. There is a potential for individuals to migrate

			woodlands | Riparian woodland | Sonoran desert scrub; Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes.		through the study area and forage, however the habitat is low quality.
summer tanager	*Piranga rubra*	None / SSC/ None / CVMSHCP	Riparian forest; Summer resident of desert riparian along lower Colorado River, and locally elsewhere in California deserts.	HA	No riparian habitat is present within the study area. Species not expected to occur.
coastal California gnatcatcher	*Polioptila californica californica*	FT / SSC/ None / None	Coastal bluff scrub | Coastal scrub; Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California.	HA	No coastal sage scrub habitat is present within the study area. Species not expected to occur.
vermilion flycatcher	*Pyrocephalus rubinus*	None / SSC/ None / None	Marsh & swamp | Riparian forest | Riparian scrub | Riparian woodland | Wetland; During nesting, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, and other open, mesic areas.	HA	No riparian habitat is present within the study area. Species not expected to occur.
yellow warbler	*Setophaga petechia*	None /SSC/ None / CVMSHCP	Riparian forest | Riparian scrub | Riparian woodland; Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open	HA	No riparian habitat is present within the study area. Species not expected to occur.

			conifer forests in Cascades and Sierra Nevada.		
Crissal thrasher	*Toxostoma crissale*	None /SSC/ None / CVMSHCP	Riparian woodland; Resident of southeastern deserts in desert riparian and desert wash habitats.	HA	No riparian habitat is present within the study area. Species not expected to occur.
Le Conte's thrasher	*Toxostoma lecontei*	None / SSC/ None / CVMSHCP	Desert wash | Mojavean desert scrub | Sonoran desert scrub; Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats.	HP	
least Bell's vireo	*Vireo bellii pusillus*	FE / SE / None/ CVMSHCP	Riparian forest | Riparian scrub | Riparian woodland; Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft.	HA	No riparian habitat is present within the study area. Species not expected to occur.
Invertebrates					
Crotch's bumble bee	*Bombus crotchii*	None / SCE / None /None	Open grassland and scrub communities supporting suitable floral resources. Coastal California east to the Sierra-Cascade crest and south into Mexico.	HP	Native shrubs in the study area may provide suitable foraging habitat for this species.
Monarch (overwintering population)	*Danaus plexippus plexippus*	FPT / None / None / None	Closed-cone coniferous forest; Winter roost sites extend along the coast from northern	HA	Individual monarch butterflies may forage on nectar resources within the BSA; however, the BSA does

			Mendocino to Baja California, Mexico.		not support breeding (milkweed species) or overwintering habitat.
Casey's June beetle	*Dinacoma caseyi*	FE / None / None/ None	Desert wash | Mojavean desert scrub; Found only in two populations in a small area of southern Palm Springs.	HP	Study area occurs outside of species known range, it is not expected to occur.
Coachella giant sand treader cricket	*Macrobaenetes valgum*	None / None / None/ CVMSHCP	Desert dunes; Known from the sand dune ridges in the vicinity of Coachella Valley.	HA	No dune habitat is present in the study area. Not expected to occur.
Coachella Valley Jerusalem cricket	*Stenopelmatus cahuilaensis*	None / None / None/ CVMSHCP	Desert dunes; Inhabits a small segment of the sand and dune areas of the Coachella Valley, in the vicinity of Palm Springs.	HA	No dune habitat is present in the study area. Not expected to occur.
Mammals					
pallid bat	*Antrozous pallidus*	None / SSC/ None/ None	Chaparral | Coastal scrub | Desert wash | Great Basin grassland | Great Basin scrub | Mojavean desert scrub | Riparian woodland | Sonoran desert scrub | Upper montane coniferous forest | Valley & foothill grassland; Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	HP (foraging only)	Species would potentially forage over the study area. No rock outcrops or potential roost sites in the study area.
Townsend's big-eared bat	*Corynorhinus townsendii*	None / SSC/ None/ None	Broadleaved upland forest | Chaparral | Chenopod scrub | Great Basin grassland | Great Basin scrub | Joshua tree	HP (foraging only)	Species would potentially forage over the study area. No suitable roosts in the study area.

			woodland | Lower montane coniferous forest | Meadow & seep | Mojavean desert scrub | Riparian forest | Riparian woodland | Sonoran desert scrub; Throughout California in a wide variety of habitats. Most common in mesic sites.		
San Bernardino flying squirrel	*Glaucomys oregonensis californicus*	None / SSC/ None / None	Broadleaved upland forest | Lower montane coniferous forest; 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.	HA	Study area occurs outside of species range and no suitable habitat present.
western yellow bat	*Lasiurus xanthinus*	None / SSC/ None / None	Desert wash; Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats.	HP (foraging only)	This species could potentially forage in the study area. Study area lacks roost habitat such as trees.
San Diego desert woodrat	*Neotoma lepida intermedia*	None / SSC/ None / None	Coastal scrub; Coastal scrub of Southern California from San Diego County to San Luis Obispo County.	HA	No suitable habitat is present in the study area.
pocketed free-tailed bat	*Nyctinomops femorosaccus*	None / SSC/ None / None	Joshua tree woodland | Pinon & juniper woodlands | Riparian scrub | Sonoran desert scrub; Variety of arid areas in Southern California; pine-juniper woodlands, desert	HP (foraging only)	This species could potentially forage in the study area. Study area lacks roost habitat such as cliff crevices and rocky outcrops.

			scrub, palm oasis, desert wash, desert riparian, etc.		
big free-tailed bat	*Nyctinomops macrotis*	None / SSC / None / None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water; Low-lying arid areas in Southern California.	HA	The study area lacks suitable foraging and roosting habitat. No rock outcrops or cliffs are present.
desert bighorn sheep	*Ovis canadensis nelsoni*	None / FP / None / None	Alpine | Alpine dwarf scrub | Chaparral | Chenopod scrub | Great Basin scrub | Mojavean desert scrub | Montane dwarf scrub | Pinon & juniper woodlands | Riparian woodland | Sonoran desert scrub; Widely distributed from the White Mtns in Mono Co. to the Chocolate Mts in Imperial Co.	HA	The species is found on desert slopes which are not present. Species is not expected.
Peninsular bighorn sheep DPS	*Ovis canadensis nelsoni pop. 2*	FE / ST, FP / None / CVMSHCP	Alpine | Alpine dwarf scrub | Chaparral | Chenopod scrub | Great Basin scrub | Mojavean desert scrub | Montane dwarf scrub | Pinon & juniper woodlands | Riparian woodland | Sonoran desert scrub; Eastern slopes of the Peninsular Ranges below 4,600 ft elevation. This DPS of the subspecies inhabits the Peninsular Ranges in southern California from the San Jacinto	HA	The species is found on desert slopes which are not present in the study area. Species is not expected.

			Mountains south to the US-Mexico International Border.		
Palm Springs pocket mouse	*Perognathus longimembris bangsi*	None / SSC / None / CVMSHCP	Desert wash | Sonoran desert scrub; Desert riparian, desert scrub, desert wash and sagebrush habitats. Most common in creosote-dominated desert scrub.	HP	Suitable habitat is present in the study area. This species is fully covered under the CVMSHCP.
Los Angeles pocket mouse	*Perognathus longimembris brevinasus*	None / SSC/ None / None	Coastal scrub; Lower elevation grasslands and coastal sage communities in and around the Los Angeles Basin.	HA	There is not suitable scrub habitat in the study area.
American badger	*Taxidea taxus*	None / SSC/ None/ None	Alkali marsh | Alkali playa | Alpine | Alpine dwarf scrub | Bog & fen | Brackish marsh | Broadleaved upland forest | Chaparral | Chenopod scrub | Cismontane woodland | Closed-cone coniferous forest | Coastal bluff scrub | Coastal dunes | Coastal prairie; Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	HA	Study area lacks suitable habitat and there are no suitable burrows were observed in the study area. Species is not expected to occur.
Coachella Valley round-tailed ground squirrel	*Xerospermophilus tereticaudus chlorus*	None / SSC/ None / CVMSHCP	Chenopod scrub | Sonoran desert scrub; Restricted to the Coachella Valley. Prefers desert succulent scrub, desert wash, desert scrub, alkali scrub, and levees.	HP	Suitable habitat is present at the southern and northern extent of the study area outside of the aeolian sand area. Ground squirrel burrows observed in the study area.

Reptiles					
Southern California legless lizard	*Anniella stebbinsi*	None / SSC/ None / None	Broadleaved upland forest | Chaparral | Coastal dunes | Coastal scrub; 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.	HA	Although the study area has sandy soils, there is no suitable scrub or dune habitat in the study area.
California glossy snake	*Arizona elegans occidentalis*	None / SSC/ None / None	Arid scrub, rocky washes, grasslands, chaparral, open areas with loose soil; Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California.	HP	Suitable habitat is present within open sandy areas in the study area.
southern rubber boa	*Charina umbratica*	None / ST/ None/ None	Meadow & seep | Riparian forest | Riparian woodland | Upper montane coniferous forest | Wetland; 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	HA	No suitable riparian habitat is present in the study area.

			Sierra Nevada are southern rubber boa.		
red-diamond rattlesnake	*Crotalus ruber*	None / SSC/ None /None	Chaparral | Mojavean desert scrub | Sonoran desert scrub; Chaparral, woodland, grassland, and desert areas from coastal San Diego County to the eastern slopes of the mountains.	HA	Although desert scrub is present, this species is associated with dense scrub and/or rock outcrops which was not present.
desert tortoise	*Gopherus agassizii*	FT / ST / None/ CVMSHCP	Joshua tree woodland | Mojavean desert scrub | Sonoran desert scrub; Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat.	HA	The project site occurs outside of the species known range. In addition, no suitable burrows were observed in the study area during the habitat assessment and focused surveys for burrowing owl.
coast horned lizard	*Phrynosoma blainvillii*	None / SSC/ None / None	Chaparral | Cismontane woodland | Coastal bluff scrub | Coastal scrub | Desert wash | Pinon & juniper woodlands | Riparian scrub | Riparian woodland | Valley & foothill grassland; Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	HP	There is suitable habitat within the desert wash portion of the study area.
flat-tailed horned lizard	*Phrynosoma mcallii*	None / SSC/ None / CVMSHCP	Desert dunes | Mojavean desert scrub | Sonoran desert scrub; Restricted to desert washes and desert flats in	HP	There is suitable habitat within the desert wash portion of the study area.

			central Riverside, eastern San Diego, and Imperial counties.		
two-striped gartersnake	*Thamnophis hammondii*	None / SSC/ None / None	Marsh & swamp | Riparian scrub | Riparian woodland | Wetland; Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation.	HA	No suitable riparian habitat is present and species would not occur.
Coachella Valley fringe-toed lizard	*Uma inornata*	FT / SE / None/CVMSHCP	Desert dunes | Desert wash; Limited to sandy areas in the Coachella Valley, Riverside County.	HP	No desert dunes are present in the study area, however suitable habitat occurs within the desert wash. Species has been documented in the vicinity within the last 10 years.
Vegetation Communities					
Desert Fan Palm Oasis Woodland				HA	This vegetation community is not present in the study area.
Mesquite Bosque				HA	This vegetation community is not present in the study area.
Mojave Riparian Forest				HA	No riparian habitat is present in the study area.
Southern Riparian Forest				HA	No riparian habitat is present in the study area.

[a] **Status Codes**	**CNPS Rare Plant Rank (CRPR)**	[b] **Habitat Presence/Absence Codes**
Federal E = Federally listed; Endangered T = Federally listed; Threatened	1A = Plants presumed extinct in California 1B = Plants rare, threatened, or endangered in California and elsewhere	P= The species is present and was observed during survey efforts. A= The species was confirmed absent.

FPT- Federal Proposed ThreatenedFC = Federal Candidate for Listing **State** E = State listed; Endangered CE = Candidate Endangered T = State listed; Threatened SSC = California Species of Special Concern CFP = California Fully Protected Species	2B = Plants rare, threatened, or endangered in California, but not elsewhere 3 = Plants about which we need more information 4 = Limited distribution (Watch List) **CNPS CRPR Threat Codes** 0.1 = Seriously endangered in California 0.2 = Fairly endangered in California 0.3 = Not very endangered in California **CVMSHCP** Code = species covered under the Plan such that if impacted, the Plan would provide mitigation for impacts.	HP=Habitat is or may be present within Project footprint. The species may potentially be present. Focused survey is warranted. HA=No habitat present and no further work needed. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Gray Highlight= No potential to occur in the BSA or no potential for species to pose a constraint to the project.

Appendix B2

Special Status Plant Survey

Michael Baker INTERNATIONAL

We Make a Difference

June 20, 2025 JN 192359

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
Attn: Mr. Amir Modarressi, CVAG PM-Transportation
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92236

RE: Focused Special-Status Plant Survey Report for the Western Coachella Valley Flood and Blowsand Road Improvement Project-Phase One, Indian Canyon Drive, City of Palm Springs, Riverside County, California

Dear Amir Modarressi:

Michael Baker International, Inc. conducted a focused special-status plant survey for the Western Coachella Valley Flood and Blowsand Road Improvement Project (the project) located in the City of Palm Springs, Riverside County, California.[1] The Coachella Valley Association of Governments (CVAG) proposes to implement road improvements along a 1.6-mile portion of Indian Canyon Road, which supports potential habitat for special-status plants. The 2023 focused survey effort encompassed the proposed limits of disturbance from Palm Springs Station Road south to Sunrise Parkway plus a 100-foot buffer (2023 biological study area [BSA]) for a total of 40.16 acres. In 2025, a focused survey effort was conducted within an added area that includes the Amtrak station and a proposed construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue (2025 BSA). This report includes the methods, results, and conclusion/recommendations for future actions based on the 2023 and 2025 survey results.

PROJECT LOCATION

The project site is in the northern portion of the City of Palm Springs and includes a portion of Indian Canyon Drive south of Interstate 10 between Palm Springs Station Road and Sunrise Parkway (Attachment A, Figure 1, Regional Vicinity). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm Springs U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (Attachment A, Figure 2, Site Vicinity). Specifically, the project site includes Assessor's Parcel Numbers 669-080-002, 669-240-006, 669-240-004, and 669-100-008. The project site is located within the Whitewater Floodplain Conservation Area of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP; CVAG 2007).

[1] As used in this report, "special-status" refers to plant species that are federal or State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank by the California Native Plant Society; and State/locally rare plant species.

75-410 Gerald Ford Drive, Suite 100 | Palm Desert, CA 92211
Office: 760-346-7481

PROJECT DESCRIPTION

Frequent and prolonged road closures on Indian Canyon Drive due to flood and blowsand events strain the region's transportation system. The proposed project will build road improvements along Indian Canyon Drive and a bridge system that spans a portion of the Whitewater River to mitigate the adverse impacts of flood and blowsand events.

The project's limits of disturbance encompass approximately 1.6 miles of Indian Canyon Drive from Palm Springs Station Road to Sunrise Parkway. Primary improvements will occur within the Indian Canyon Drive right-of-way. Project development will occur in six phases over 24 months and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Staging would occur along the project alignment and southeast of the intersection of Indian Canyon Drive and Garnet Avenue with construction vehicles utilizing Indian Canyon Drive south of Garnet Avenue to access the project site.

EXISTING CONDITIONS

The study area currently consists of a 1.6-mile-long portion of Indian Canyon Drive, an Amtrak station, and undeveloped areas for a majority of the land within a 100-foot buffer outside of the road. The center of the study area and the southernmost end consists of developed land associated with Indian Canyon Road, Sunrise Parkway, and a partially constructed residential development. The study area is generally flat and elevation ranges from approximately 620-680 feet above mean sea level (amsl).

Based on a review of Google Earth Pro aerial imagery from 1985 to 2023 (Google 2023) and results from the field surveys, it was determined that the study area previously consisted of vacant and developed land.

Vegetation Communities/Land Covers

Vegetation communities and land covers occurring in the study area utilized the natural community descriptions provided in the CVMSHCP as a basis for the mapping efforts (Attachment A, Figure 3, CVMSHCP Natural Communities Map). Natural community descriptions were updated with appropriate alliances defined in *A Manual of California Vegetation* [MCV; California Native Plant Society (CNPS) 2023] when possible. Table 1 summarizes the extent of each vegetation community or land cover. Attachment A, Figure 4, illustrates the location of the vegetation communities and land cover types that occur in the study area. Descriptions of each are provided below.

TABLE 1. VEGETATION COMMUNITIES AND LAND COVERS IN THE STUDY AREA

Vegetation Communities and Land Covers	Type	Acres
Natural Vegetation Communities		
Disturbed cheesebush – sweetbush scrub (*Ambrosia salsola – Bebbia juncea* Shrubland Alliance)	Vegetation Community/Land Cover (MCV)	19.90
Ephemeral Desert Sand Fields	Natural Community (CVMSHCP)	2.44
	Subtotal Natural Vegetation Community	*22.34*
Land Covers		
Developed	--	18.54
Disturbed	--	7.25
Ornamental	--	0.01
	Subtotal Land Covers	*25.80*
	TOTAL	**48.14**

Natural Vegetation Communities

Disturbed Cheesebush – Sweetbush Scrub

Approximately 19.90 acres of Disturbed Cheesebush – Sweetbush Scrub (*Ambrosia salsola – Bebbia juncea shrubland alliance*) are located to the east and west of much of the study area along Indian Canyon Drive. Cheesebush (*Ambrosia salsola*) dominates this vegetation community. In addition, common Mediterranean grass (*Schismus barbatus*), Fremont pincushion (*Chaenactis fremontii*), fanleaf crinklemat (*Tiquilia plicata*), and a mixed shrub cover of sweetbush (*Bebbia juncea*), Emory's indigo bush (*Psorothamnus emoryi*), and white bursage (*Ambrosia dumosa*) occur at lower densities. This vegetation community was defined using the MCV.

Ephemeral Desert Sand Fields

Approximately 2.44 acres of Ephemeral Desert Sand Fields are located along the northern section of the study area. These areas are primarily unvegetated due to surface flows, frequently shifting sandy soils due to high velocity winds, and anthropogenic activities (e.g. frequent disturbance from vehicle traffic and illegal dumping). Vegetation that is present primarily consists of sparsely growing or ruderal plant species including desert twinbugs (*Dicoria canescens*) and Saharan mustard (*Brassica tournefortii*), and infrequent patches of scalebroom (*Lepidospartum squamatum*). This vegetation community was defined utilizing the CVMSHCP as it did not meet any membership rules outlined in the MCV.

Land Covers

Developed

Developed areas comprise approximately 18.54 acres of the project site and consist of areas that have been constructed upon or physically altered to a degree that natural soil substrates and native vegetation are no longer supported. Developed portions of the study area include Indian Canyon Drive, a small portion of Palm Springs Station Road where it meets Indian Canyon Drive in the extreme north of the study area, and a small portion of Sunrise Parkway where meets Indian Canyon Drive in the extreme south of the study area.

Disturbed

Disturbed areas are associated with the construction work occurring along Palm Springs Station Road, dirt parking lots, and the quarry east of Indian Canyon Drive within 7.25 acres in the north end of the BSA.

Ornamental

Ornamental plantings, characterized by a diverse array of decorative flora, including California fan palm (*Washingtonia filifera*), blue palo verde (*Parkinsonia florida*), spoon yucca (*Dasylirion wheeleri*), and other native and non-native species are present at the Amtrak station. The purpose of these plantings is to add aesthetic value and contribute to the overall landscaping design of the area. Ornamental plantings cover approximately 0.01 acres of the study area.

Soils Review

According to the US Department of Agriculture (USDA) Web Soil Survey (USDA 2023), the project site is mapped as containing the following soil mapping units: Carsitas gravelly sand, 0 to 9 percent slopes (CdC); Carsitas cobbly sand, 2 to 9 percent slopes, (ChC); Carsitas fine sand, 0 to 5 percent slopes (CkB); and Gravel pits and dumps (GP).

METHODS

Literature and Data Review

Michael Baker conducted a literature and data search of special-status plant species records in a 5-mile buffer of the project site. Sources reviewed included the California Department of Fish and Wildlife's (CDFW) *California Natural Diversity Database RareFind 5* (CNDDB; CDFW 2025a), CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2025), and U.S. Fish and Wildlife Service's *Information for Planning and Conservation Report* (USFWS 2025a). Other sources reviewed included the CVMSHCP (CVAG 2007), the Jepson Herbarium eFlora database (Jepson 2025), and the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2023).

Current conservation status of species was verified through lists and resources provided by the CDFW, specifically the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2025b) and the *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFW

2025c). In addition, Michael Baker reviewed previously prepared reports, survey results, and literature, as available, detailing special-status plants previously observed on or within the vicinity of the project site to gain an understanding of existing site conditions.

Focused Survey

Prior to conducting the 2023 survey, Michael Baker biologists conducted a review of a known reference site to determine whether the target species was identifiable at the time of the survey and to obtain a visual image of the target species, associated habitat, and associated natural community. An additional reference site visit was attempted in 2025, but Michael Baker biologists were unable to access the reference site location due to fencing restricting access to the area.

The focused botanical survey was conducted on April 21 and May 19, 2023, and April 30, May 15, and June 12, 2025 by Michael Baker biologists Trina Ming and Ryan Phaneuf. Site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, and condition of on-site vegetation communities and land covers were noted. The surveys were conducted to document the presence and location(s) of individual special-status plants or populations (if present). The special-status plant surveys were conducted consistent with guidelines provided by the CNPS (2001), U.S. Fish and Wildlife Service (2000), and CDFW (2018). The study area was assessed systematically on foot by walking transects that varied between approximately 10 and 50 feet apart depending on plant density and visibility to allow for 100 percent coverage necessary to inventory plant species. The surveys were floristic in nature, meaning that species encountered were identified to the taxonomic level necessary to determine rarity and listing status.

Plant nomenclature used in this memorandum follows the Jepson eFlora (Jepson 2025) and scientific names are provided immediately following common names of plant species (first reference only). If present, special-status plant populations were documented by counting the total number of individual occurrences and recording their locations with a GPS unit.

Geographic information systems (GIS) ArcGIS Pro software was then used to digitize the vegetation communities and display the data onto an aerial photograph.

RESULTS

Based on the results of the literature review and database searches, Michael Baker botanists identified 40 special-status plant species as potentially occurring in the region surrounding the study area. Of these, 36 species are not expected to occur due to the absence of suitable habitat or because the study area is outside the known range of the species; and 3 species are considered to have low potential to occur based on the presence of low-quality habitat. These species were not analyzed further, thereby refining the analysis to the remaining 1 species with potential to occur in the study area.

No species were determined to have a moderate potential to occur in the study area based on the soils, vegetation communities (habitat) present, elevation range, and previous known locations based on the CNDDB, IPaC, and CNPS Inventory. One species, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*), was previously recorded in the CNDDB in 2014 within the study area and therefore determined to have a high potential to occur in the study area.

The potentials for special-status species to occur within the survey area were determined based on known occurrence records and the following:

- **Present**: Species was observed or detected within the survey area during the field survey.
- **High**: Occurrence records (within 20 years) indicate that the species has been known to occur on or within 1 mile of the survey area and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the survey area and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate**: Occurrence records (within 20 years) indicate that the species has been known to occur within 1 mile of the survey area and the site is within the normal expected range of this species. There is suitable habitat within the survey area, but the site is ecologically isolated from any local known extant populations or sightings.
- **Low**: Occurrence records (within 20 years) indicate that the species has been known to occur within 5 miles of the survey area, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the survey area.
- **Not Expected**: There are no occurrence records of the species within 5 miles of the survey area, there is no suitable habitat within the survey area, and/or the survey area is outside of the normal expected range for the species.

Special-status species observed or with a high potential to occur are summarized in Table 2.

TABLE 2. SPECIAL-STATUS PLANT SPECIES OBSERVED OR WITH A HIGH POTENTIAL TO OCCUR IN THE STUDY AREA

Scientific Name	Common Name	Federal/State/CRPR	Habitat Preferences and Distribution Affinities	Potential to Occur
Astragalus lentiginosus var. *coachellae*	Coachella Valley milk-vetch	FE/None/1B.2	Annual/perennial herb. Habitats include desert dunes and Sonoran desert scrub (sandy). Found at elevations ranging from 130 to 2,150 feet amsl. Blooming period is February through May.	High: The project site provides suitable habitat for this species. A CNDDB occurrence record indicated that this species was detected within the study area in 2014.

Source: CDFW 2025a; CNPS 2025; USFWS 2025a.
Status Legend
Federal
FE: Federally listed as endangered

State
CRPR (California Rare Plant Rank)
List 1B: Plants rare, threatened, or endangered in California and elsewhere
Threat Rank:
.2 Fairly endangered in California (20% to 80% of occurrences threatened)

The study area is located within USFWS-designated critical habitat for Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) (USFWS 2023b). A site visit to a known reference population of Coachella Valley milk-vetch located within approximately 3.6 miles of the study area was conducted on April 21, 2023. Coachella Valley milk-vetch was detected during the reference site visit indicating that it would be identifiable if present in the study area.

No mapped vegetation communities were considered special-status on the *California Sensitive Natural Communities* (CDFW 2023d) document.

No special-status plants were detected in the study area during the focused botanical field surveys. A total of 43 species of native or naturalized plants, 33 native (77%) and 10 non-native (23%), were recorded in the study area. Table 3 summarizes the survey dates, timing, surveyors, and weather conditions for each of the surveys. A complete list of plant species detected during the focused surveys is provided in Attachment C.

TABLE 3. SUMMARY OF SURVEY CONDITIONS

Date	Survey	Biologists	Time	Conditions (Temp / Cloud Cover / Wind)
04/21/2023	Focused Survey #1	RP, TM	0630 - 1130	74.5°F/CC/1.9 mph
05/19/2023	Focused Survey #2	RP, TM	0610 - 0905	80.8°F/Clear/1 mph
04/30/2025	Focused Survey #1	RP, TM	0615 - 0945	73.5°F/Clear/2.9 mph
05/15/2025	Focused Survey #2	RP, TM	0925 - 1000	74.1°F/Clear/3.0 mph
06/12/2025	Focused Survey #3	RP, TM	1030 - 1052	97.5°F/Clear/1.3 mph

Biologists: RP-Ryan Phaneuf and TM-Trina Ming

Conditions: F-Fahrenheit, CC-cloud cover, mph-miles per hour

CONCLUSIONS AND RECOMMENDATIONS

Based on results of the focused botanical surveys, no special-status plants were detected in the study area. As a result, these species are not expected to occur and no further measures are required.

Please do not hesitate to contact me at (949) 330-4184 or ryan.phaneuf@mbakerintl.com or Trina Ming at (949) 472-3495 or trina.ming@mbakerintl.com should you have any questions or require further information.

Sincerely,

Ryan Phaneuf
Biologist
Natural Resources

Trina Ming
Biologist
Natural Resources

Attachments:

Attachment A. Figures
Attachment B. Site Photographs
Attachment C. Species Compendium

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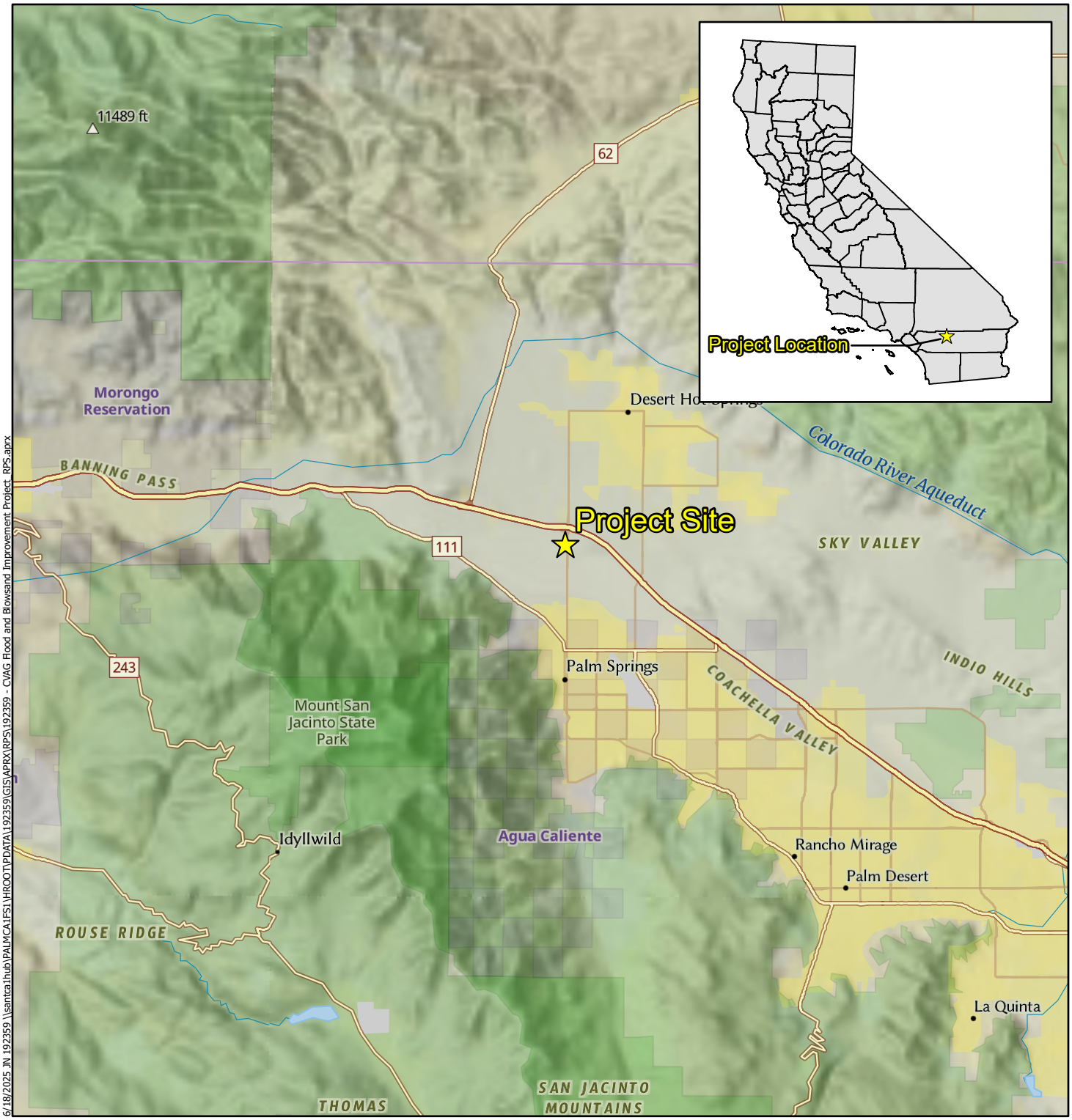
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Michael Baker
INTERNATIONAL

ATTACHMENT A.
FIGURES

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Legend

★ Project Site

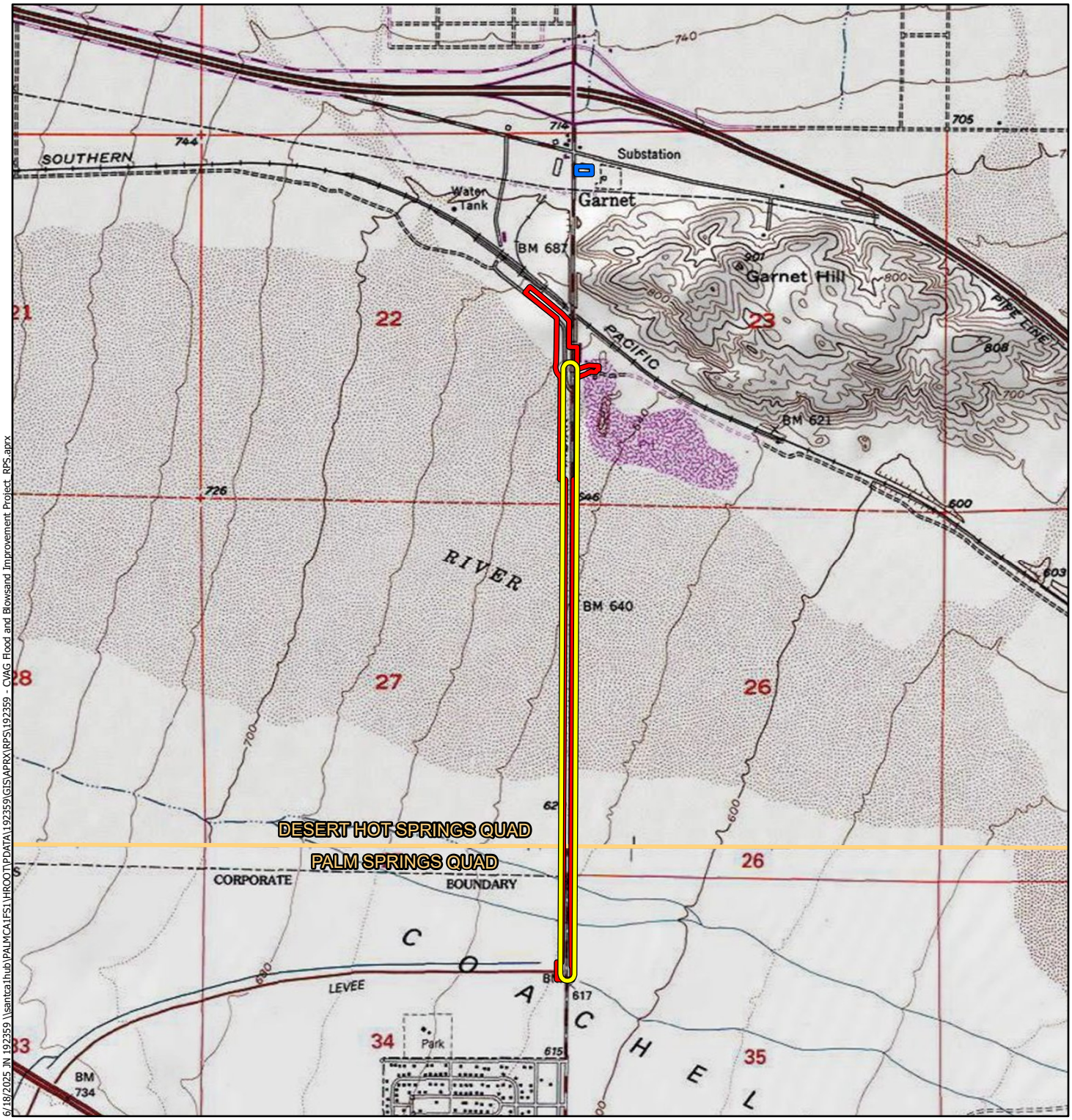
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Riverside County

Regional Vicinity

Figure 1



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\RPS\192359 - CVAG Flood and Blowsand Improvement Project_RPS.aprx

Legend

- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

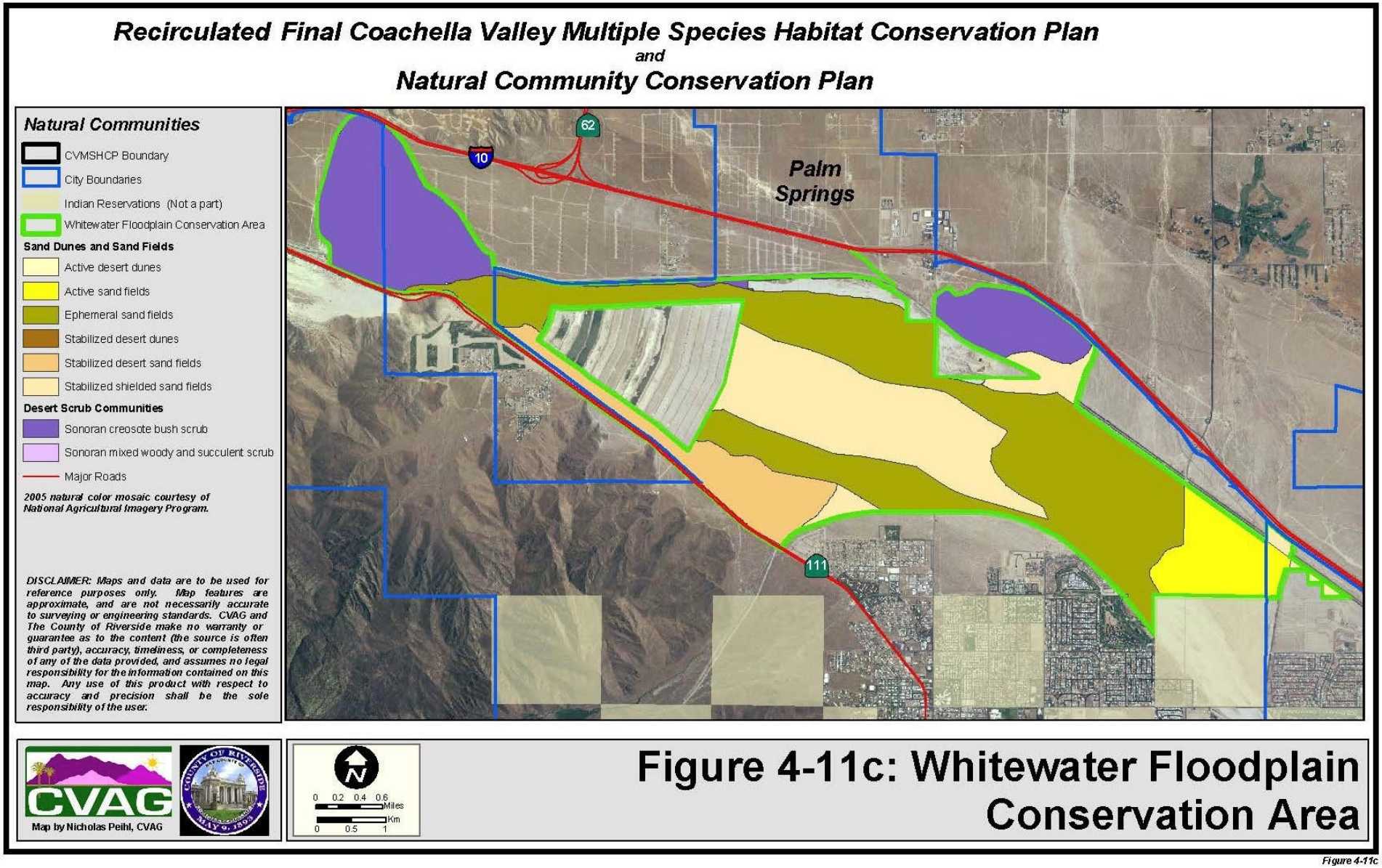
0 1,000 2,000
US Feet

Site Vicinity

Source: Esri, ArcGIS Online, Desert Hot Springs and Palm Springs USGS 7.5-Minute topographic quadrangle maps: *Palm Springs, California*

Figure 2

6/19/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\RPS\192359 - CVAG Flood and Blowsand Improvement Project_RPS.aprx



CVMSHCP Natural Communities Map

Source: Michael Baker Intl, CVCC, Riverside County



6/20/2025 JN \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX

Legend

- Reference Point
- Limits of Disturbance
- Potential Construction Staging Area
- Study Area (2023)

Vegetation Communities and Land Cover Types

- *Disturbed Ambrosia salsola - Bebbia juncea Shrubland* Alliance (*Ambrosia salsola* Association; 19.90 acres)
- Ephemeral Desert Sand Fields (2.44 acres)
- Developed (18.54 acres)
- Disturbed (7.25 acres)
- Ornamental (0.01 acres)

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

0 0.15 0.3 Miles

Vegetation Communities and Land Cover Types

Source: Esri, ArcGIS Online, Riverside County, 2025 Nearmap Imagery

Figure 4

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ATTACHMENT B.
SITE PHOTOGRAPHS

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Photograph 1: View of the Ephemeral Desert Sand Fields along the northeastern portion of the study area, facing south (2023).



Photograph 2: View taken from the northeastern portion of study area, taken south of Photograph 1 and facing southwest (2023).



Photograph 3: View of the Ephemeral Desert Sand Fields
in the northwestern section of the site, facing southeast (2023).



Photograph 4: View of the northern section of the site, facing north (2023).



Photograph 5: View of the Disturbed Cheesebush – Sweetbush Scrub within the central portion of the study area, facing southwest (2023).



Photograph 6: Representative view of the conditions within the southern sections of the study area. Photograph depicts Disturbed Cheesebush – Sweetbush Scrub along the margins of Indian Canyon Drive (2023).



Photograph 7: View of the southern portion of the study area, taken south of Photograph 6 (2023).



Photograph 8: View taken at the southernmost section of the study area, facing north (2023).



Photograph 9: View of the northern portion of the additional area added to the study area in 2025, looking northwest along Palm Springs Station Road (2025).



Photograph 10: View looking west toward Indian Canyon Drive within the proposed construction staging area (2025).



Photograph 11: View of the northern portion of the additional area added to the study area in 2025, looking south along Palm Springs Station Road (2025).



Photograph 10: View of the northern portion of the additional area added to the study area in 2025, looking north along Palm Springs Station Road (2025).

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SPECIES COMPENDIUM

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VASCULAR SPECIES

EUDICOTS

ASPARAGACEAE—Asparagus Family
- *Dasylirion wheeleri*—spoon yucca*

ASTERACEAE—Sunflower Family
- *Ambrosia dumosa*—white bursage
- *Ambrosia salsola*—cheesebush
- *Bebbia juncea*—sweetbush
- *Chaenactis fremontii*—pincushion flower
- *Dicoria canescens*—desert twinbugs
- *Encelia farinosa*—brittle bush
- *Ericameria paniculata*—black-stem rabbitbrush
- *Lepidospartum squamatum*—scale broom
- *Logfia depressa*—dwarf cottonrose
- *Malacothrix glabrata*—smooth desertdandelion
- *Palafoxia arida* var. *arida*—desert palafox
- *Psathyrotes ramosissima*—velvet turtleback
- *Stephanomeria pauciflora*—brownplume wirelettuce
- *Oncosiphon pilulifer*—stinknet*

BORAGINACEAE—Borage Family
- *Cryptantha angustifolia*—Panamint cryptantha
- *Phacelia* sp.—phacelia
- *Tiquilia plicata*—fanleaf crinklemat

BRASSICACEAE—Mustard Family
- *Brassica tournefortii*—Tournefort's mustard*
- *Hirschfeldia incana*—shortpod mustard*

CHENOPODIACEAE—Goosefoot Family
- *Atriplex canescens*—fourwing saltbush
- *Salsola tragus*—prickly Russian thistle*

EUPHORBIACEAE—Spurge Family
- *Croton californicus*—California croton
- *Euphorbia polycarpa*—smallseed sandmat

FABACEAE—Legume Family
- *Lupinus concinnus*—bajada lupine
- *Neltuma odorata*—honey mesquite
- *Psorothamnus emoryi*—dyebush

GERANIACEAE—Geranium Family
- *Erodium cicutarium*—redstem stork's bill*

LOASACEAE—Loasa Family
- *Petalonyx thurberi* ssp. *thurberi* —Thurber's sandpaper plant

NYCTAGINACEAE—Four O'clock Family

VASCULAR SPECIES

Abronia villosa var. *villosa*—desert sand verbena
ONAGRACEAE—Evening Primrose Family
Camissoniopsis pallida—paleyellow suncup
Chylismia claviformis—browneyes
PLANTAGINACEAE—Plantain Family
Plantago patagonica—woolly plantain
POLYGONACEAE—Buckwheat Family
Eriogonum thomasii—Thomas' buckwheat
SOLANACEAE—Nightshade Family
Datura wrightii—sacred datura
ZYGOPHYLLACEAE—Caltrop Family
Larrea tridentata—creosote bush
Tribulus terrestris—puncturevine*

GYMNOSPERMS AND GNETOPHYTES

EPHEDRACEAE—Ephedra Family
Ephedra nevadesis—Nevada joint fir

MONOCOTS

ARECACEAE—Palm Family
Washingtonia filifera—California fan palm
POACEAE—Grass Family
Hilaria rigida—big galleta
Hordeum murinum—wall barley*
Pennisetum setaceum—crimson fountain grass*
Schismus barbatus—common Mediterranean grass*

Appendix B3

Burrowing Owl Survey Report

Michael Baker INTERNATIONAL

We Make a Difference

May 30, 2025 JN 192359

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
Attn: Mr. Amir Modarressi, CVAG PM-Transportation
73-710 Fred Waring Drive, Suite 200
Palm Desert, California 92236

RE: Burrowing Owl Survey Report for the Western Coachella Valley Flood and Blowsand Road Improvement Project-Phase One, Indian Canyon Drive, City of Palm Springs, Riverside County, California

Dear Amir Modarressi:

Michael Baker International, Inc. conducted a focused burrowing owl (*Athene cunicularia*; BUOW) survey during the 2023 breeding season for the Western Coachella Valley Flood and Blowsand Road Improvement Project (the project) located in the City of Palm Springs, Riverside County, California. The Coachella Valley Association of Governments (CVAG) proposes to implement road improvements along a 1.6-mile portion of Indian Canyon Road, which supports potential habitat for the BUOW. The 2023 focused survey effort encompassed the proposed limits of disturbance from Palm Springs Station Road south to Sunrise Parkway plus a 500-foot buffer (2023 biological study area[BSA]). In 2025, a BUOW habitat assessment was conducted within an added area that includes the Amtrak station and a proposed construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue (2025 BSA). This report includes the methods, results, and conclusions/recommendations for future actions based on the 2023 and 2025 survey results.

PROJECT LOCATION

The project site is in the northern portion of the City of Palm Springs and includes a portion of Indian Canyon Drive south of Interstate 10 between Palm Springs Station Road and Sunrise Parkway (Attachment A, Figure 1, Regional Vicinity). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm Springs U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (Attachment A, Figure 2, Site Vicinity). Specifically, the project site includes Assessor's Parcel Numbers 669-080-002, 669-240-006, 669-240-004, and 669-100-008. The project site is located within the Whitewater Floodplain Conservation Area of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP, CVAG 2007).

PROJECT DESCRIPTION

Frequent and prolonged road closures on Indian Canyon Drive due to flood and blowsand events strain the region's transportation system. The proposed project will build road improvements along Indian Canyon Drive and a bridge system that spans a portion of the Whitewater River to mitigate the adverse impacts of flood and blowsand events.

The project's limits of disturbance encompass approximately 1.6 miles of Indian Canyon Drive from Palm Springs Station Road to Sunrise Parkway. Primary improvements will occur within the Indian Canyon Drive right-of-way. Project development will occur in six phases over 24 months and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Staging would occur along the project alignment and southeast of the intersection of Indian Canyon Drive and Garnet Avenue with construction vehicles utilizing Indian Canyon Drive south of Garnet Avenue to access the project site.

Vegetation Communities/Land Covers

Vegetation communities and land cover mapping was conducted by Michael Baker in 2023 and 2025 using the California Department of Fish and Wildlife's (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) and *California Natural Communities List* (CDFW 2025). Table 1 summarizes the extent and Attachment A, Figure 3, illustrates the location of the vegetation communities and land cover types that occur in the survey area and that are suitable for BUOW. Descriptions of each are provided below.

TABLE 1. VEGETATION COMMUNITIES IN THE SURVEY AREA

Vegetation Communities	Acres
Disturbed cheesebush – sweetbush scrub (*Ambrosia salsola – Bebbia juncea* Shrubland Alliance)	168.45
Ephemeral Desert Sand Fields	5.65
Tamarisk Thickets (*Tamarix* spp. Shrubland Semi-Natural Alliance)	1.81
Disturbed Creosote Bush Scrub (*Larrea tridentata*- Shrubland Alliance)	5.29
Developed	14.89
Disturbed	21.71
Ornamental	0.75
TOTAL	293.03

Disturbed Cheesebush – Sweetbush Scrub

The disturbed cheesebush-sweetbush Scrub (*Ambrosia salsola-Bebbia juncea shrubland alliance*) is located to the east and west of much of the proposed project site along Indian Canyon Drive. Cheesebush (*Ambrosia salsola*) dominates this vegetation community. In addition, common Mediterranean grass (*Schismus barbatus*), Fremont pincushion (*Chaenactis fremontii*), and fanleaf crinklemat (*Tiquilia plicata*), and a mixed shrub cover of sweetbush (*Bebbia juncea*), Emory's indigo bush (*Psorothamnus emoryi*), and white bursage (*Ambrosia dumosa*) occur at lower densities. This community generally provides both breeding and foraging habitat for BUOW.

Ephemeral Desert Sand Fields

Ephemeral Desert Sand Fields are located along the northern section of the BSA. This land cover is primarily unvegetated due to surface flows, frequently shifting sandy soils due to high velocity winds, and anthropogenic activities (e.g., frequent disturbance from vehicle traffic and illegal dumping). Vegetation that is present primarily consists of sparsely growing or ruderal plant species including desert twinbugs (*Dicoria canescens*) and Saharan mustard (Brassica tournefortii), and infrequent patches of scalebroom (*Lepidospartum squamatum*). Due to the soft sands (blowsands) that dominate this community, it generally only provides foraging habitat for BUOW as the sands are too friable to support burrows.

Tamarisk Thickets

Tamarisk Thickets (*Tamarix spp.* Shrubland Semi-Natural Alliance) occurs as a monotypic stand of tamarisk (*Tamarix aphylla*) along the southern right-of-way of the Union Pacific Railroad. This vegetation community was planted along linear infrastructure routes throughout the Coachella Valley as a windbreak but is considered a highly invasive community. This vegetation community was defined utilizing the MCV.

Disturbed Creosote Bush Scrub

The Disturbed Creosote Bush Scrub (*Larrea tridentata* shrubland scrub) is located north of the Union Pacific Railroad on both sides of Indian Canyon Drive. This area is sparsely vegetated primarily with creosote bush (*Larrea tridentata*), with cheesebush, Saharan mustard, and Mediterranean schismus present sporadically, and occurs in an area that has been disturbed by off-road vehicles. This vegetation community was defined utilizing the MCV.

Developed

Developed areas consist of areas that have been constructed upon or physically altered to a degree that natural soil substrates and native vegetation are no longer supported. Developed

portions of the study area include Indian Canyon Drive, Palm Springs Station Road, and Sunrise Parkway, the Amtrak station, and commercial development.

Disturbed

Disturbed areas are associated with the construction work occurring along Palm Springs Station Road, dirt parking lots, and the quarry east of Indian Canyon Drive on the north end of the BSA.

Ornamental

Ornamental plantings, characterized by a diverse array of decorative flora, including California fan palm (*Washingtonia filifera*), blue palo verde (*Parkinsonia florida*), spoon yucca (*Dasylirion wheeleri*), and other native and non-native species, are present at the Amtrak station. The purpose of these plantings is to add aesthetic value and contribute to the overall landscaping design of the area.

METHODS

2023 Survey

Michael Baker biologists conducted a focused habitat assessment and burrowing owl surveys following the guidelines contained in the *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game [CDFG] 2012). The 2023 survey area extended along Indian Canyon Drive (including a 500-foot buffer from the centerline of the road) from Palm Springs Station Road south to Sunrise Parkway. The guidelines recommend conducting a habitat assessment to determine if suitable habitat for BUOW exists on the project site and surrounding buffer zone, followed by four separate surveys to determine presence/absence of the species during the breeding season. At least one survey must occur between February 15 and April 15, while the remaining three surveys are recommended to occur at least three weeks apart between April 15 and July 15, with at least one survey occurring after June 15. The guidelines recommend avoiding surveys when wind speeds exceed 20 kilometers per hour (approximately 12.4 miles per hour) or if there is precipitation or dense fog. All surveys were conducted between morning civil twilight and 1000 to provide the highest detection probabilities per the guidelines (CDFG 2012).

The habitat assessment and first focused survey were attempted on April 14, 2023 during the first survey window. However, strong winds and closure of Indian Canyon Drive due to blowsand prevented the survey team from completing the survey. As a result, a second attempt was required, which Michael Baker biologists accomplished the following week on April 21, 2023. Similarly, a second attempt was required for the third survey conducted on

June 9, 2023 due to high winds. Survey dates, times, biologists, and conditions are summarized in Table 2.

TABLE 2. SUMMARY OF SURVEY CONDITIONS

Date	Survey	Biologists	Time (start-end)	Temperature °F/Cloud Cover/Wind (start-end)
04/14/2023	Habitat Assessment and Focused Survey #1	AJ, JP, MF, TM1	0600-0800	51-58/0% cc/8-14 mph (survey cancelled - road closure)
04/21/2023	Focused Survey #1	AJ, RP, TM1, TM2	0630-1000	61-87/0-100% cc/1-3 mph
05/19/2023	Focused Survey #2	RP, TM2, MB, SM	0600-0830	64-75/0% cc/5-8 mph
06/09/2023	Focused Survey #3	TM1	0645-0823	66-74/0% cc/14-25 mph (survey cancelled - high winds)
06/13/2023	Focused Survey #3	TM1, SM	0635-0945	66-74/0% cc/3-9 mph
07/07/2023	Focused Survey #4	KP, MF, SM	0600-0850	78-89/0% cc/7-10 mph
04/14/2025	Habitat Assessment	JP	1015-1115	80-84/50% cc/1-8 mph

Biologists: AJ-Anna Jullie, JP-John Parent, KP-Krista Perine, MB-Margaret Bornyasz, MF-Marisa Flores, RP-Ryan Phaneuf, SM-Samantha Martinez, TM1-Tom Millington, and TM2-Trina Ming

Conditions: F-Fahrenheit, CC-cloud cover, mph-miles per hour

During the surveys, Michael Baker biologists walked meandering transects (spaced approximately 20 to 60 feet apart) across the survey area in search of natural and modified habitats for nesting and foraging. BUOW habitat includes, but is not limited to, native and non-native grassland, interstitial grassland within shrub lands, shrub lands with low density shrub cover, golf courses, drainage ditches, earthen berms, unpaved airfields, pastureland, dairies, fallow fields, and agricultural use areas. Locations with suitable habitat, burrows, or species detections in the survey area were recorded with a GPS receiver and on field maps. Some areas at the far northern and far southern ends of the survey area on both sides of Indian Canyon Drive were fenced and could only be surveyed from the exterior with binoculars.

Methods to detect the presence of BUOW included direct observation, aural detection, and signs of presence including pellets, whitewash, feathers, or prey remains. All suitable burrows/nest sites were thoroughly examined for signs of presence and all burrows, if encountered, were examined for shape, scat, pellets, feathers, tracks, and prey remains. Binoculars were used to scan areas that were inaccessible due to lack of right-of-entry to observe and identify distant birds; identify any suitable, occupied, and remnant burrows consisting of natural and non-natural substrates; and identify any activity around potential suitable habitat for BUOW.

2025 Survey

Michael Baker biologist, John Parent, conducted a focused habitat assessment on April 14, 2025 in and around the Amtrak station and at the proposed construction staging area southeast of the intersection of Indian Canyon Drive and Garnet Avenue (Attachment A, Figure 3). Methods employed mirror those described above for the 2023 habitat assessment. Survey details are included in Table 2.

SURVEY RESULTS

2023 Survey Results

No BUOW individuals or BUOW sign (i.e., pellets, whitewash, feathers, or prey remains) were observed in the BSA during any of the four focused surveys conducted in 2023. Suitable foraging habitat and line of sight opportunities were observed throughout the survey area, as well as one suitable burrow located just west of Indian Canyon Drive (but which had no BUOW sign present; Attachment A, Figure 3). The soils located throughout the northernmost portion of the survey area were friable and did not contain suitable substrate to support burrows or nesting/roosting opportunities for BUOW. However, this area would still be suitable for BUOW to forage in if present and BUOW could still occur across the rest of the survey area. An occupied burrow with two adults and up to seven juveniles was found approximately 300-feet to the west of the survey area, or approximately 800-feet west of Indian Canyon Drive (Attachment A, Figure 3).

2025 Survey Results

No burrows or potential burrows were observed during the 2025 habitat assessment. Active construction for the building of a new bridge across the railroad tracks was occurring in the area along approximately 0.5 miles of Indian Canyon Drive from Garnet Avenue south to the intersection of Indian Canyon Drive and Palm Springs Station Road. Wind-blown sand was covering several places along Palm Springs Station Road and in and around the Amtrak station. A small staging area is being used on the west side of Indian Canyon Drive at Sunrise Parkway. Due to development, construction activity, and presence of blowsand, BUOW are not expected to occur within the 2025 BSA.

CONCLUSIONS AND RECOMMENDATIONS

No BUOWs, sign, occupied burrows, or remnant BUOW burrows were observed in the survey area. Therefore, project-related activities are not expected to result in any direct or indirect impacts to BUOW or occupied burrows in the survey area.

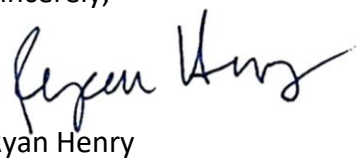
Although BUOWs were not observed in the survey area during the focused survey, portions of the survey area support suitable foraging and nesting habitat for BUOW. Additionally, as many as nine BUOW were observed approximately 300 feet west of the survey area at a burrow. According to the California Natural Diversity Data Base (CNDDB 2025), the nearest occurrence record of BUOW prior to this survey was approximately 0.5 miles northwest of the survey area along Garnet Avenue.

Due to the presence of suitable foraging habitat for BUOW and the proximity of the survey area to existing occurrence records for BUOW, pre-construction BUOW clearance surveys should be conducted by a qualified biologist to ensure that BUOWs remain absent from the project site and impacts to BUOWs do not occur. If a suitable burrow is located, the biologist will determine if an owl is present in the burrow in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Two surveys will be conducted to clear the area: the first one will take place 14-30 days before, and the second one 24 hours before any vegetation removal or ground-disturbing activities. If the approved Biologist determines the burrow is occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season or a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No construction activities will be permitted within the buffer until the young are no longer dependent on the burrow as determined by the Acceptable Biologist. Following completion of the clearance survey, the qualified biologist should prepare and submit a final report documenting the methods and results of the survey.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the construction activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

Please do not hesitate to contact me at ryan.henry@mbakerintl.com should you have any questions or require further information about this report or survey effort.

Sincerely,



Ryan Henry
Natural Resources Manager

Attachments:

Attachment A. Figures
Attachment B. Site Photographs
Attachment C. Species Compendium

References

CDFG (California Department of Fish and Game). 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency, Department of Fish and Game.

CDFW (California Department of Fish and Wildlife). 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*

CDFW (California Department of Fish and Wildlife). 2023. RareFind 5, California Natural Diversity Data Base, California.

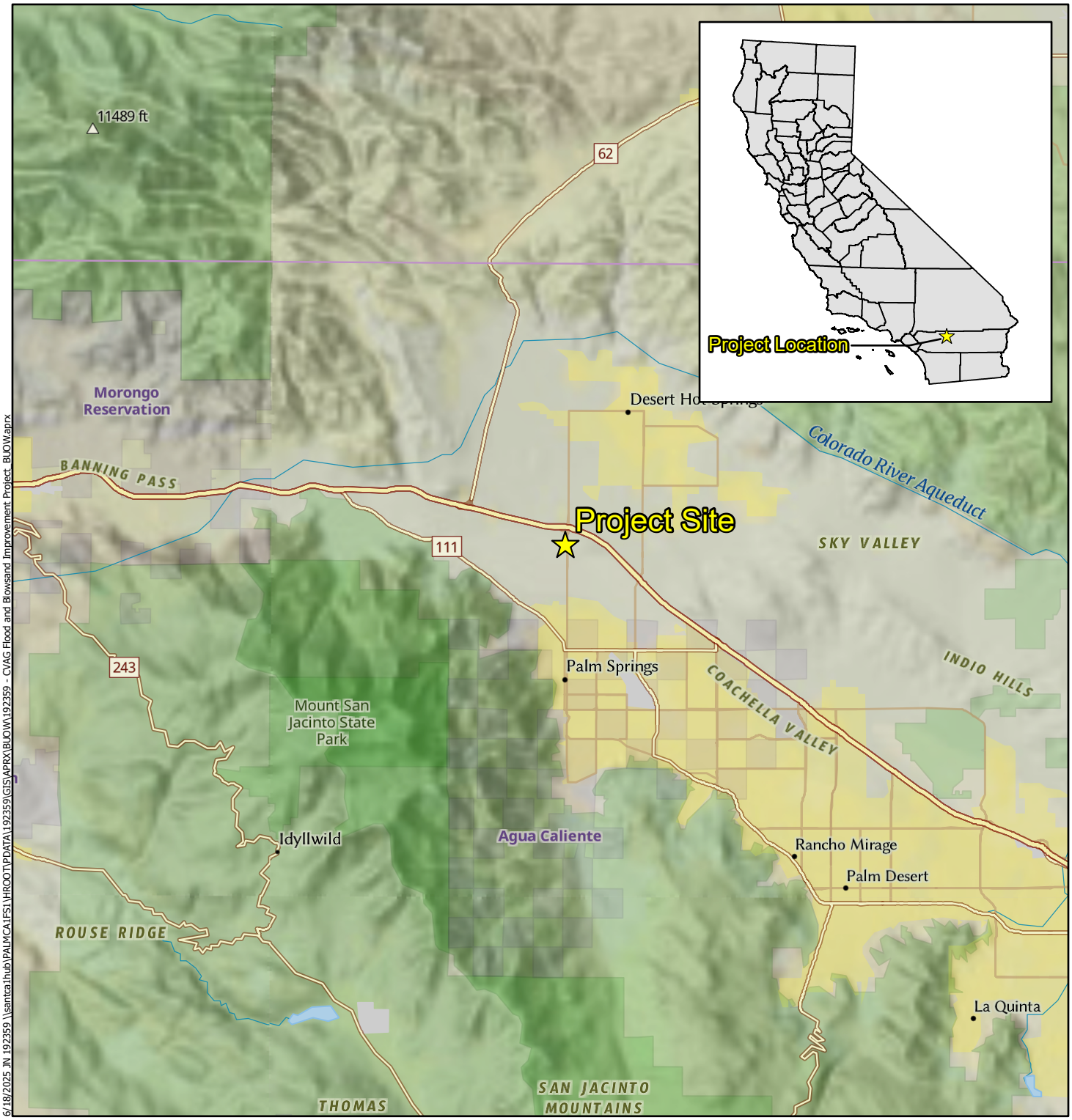
CDFW (California Department of Fish and Wildlife). 2025. California Natural Community List.

CVAG (Coachella Valley Association of Governments). 2007. *Coachella Valley Multiple Species Habitat Conservation Plan*. Accessed online at: http://www.cvmshcp.org/.

Michael Baker
INTERNATIONAL

ATTACHMENT A.
FIGURES

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Legend

★ Project Site

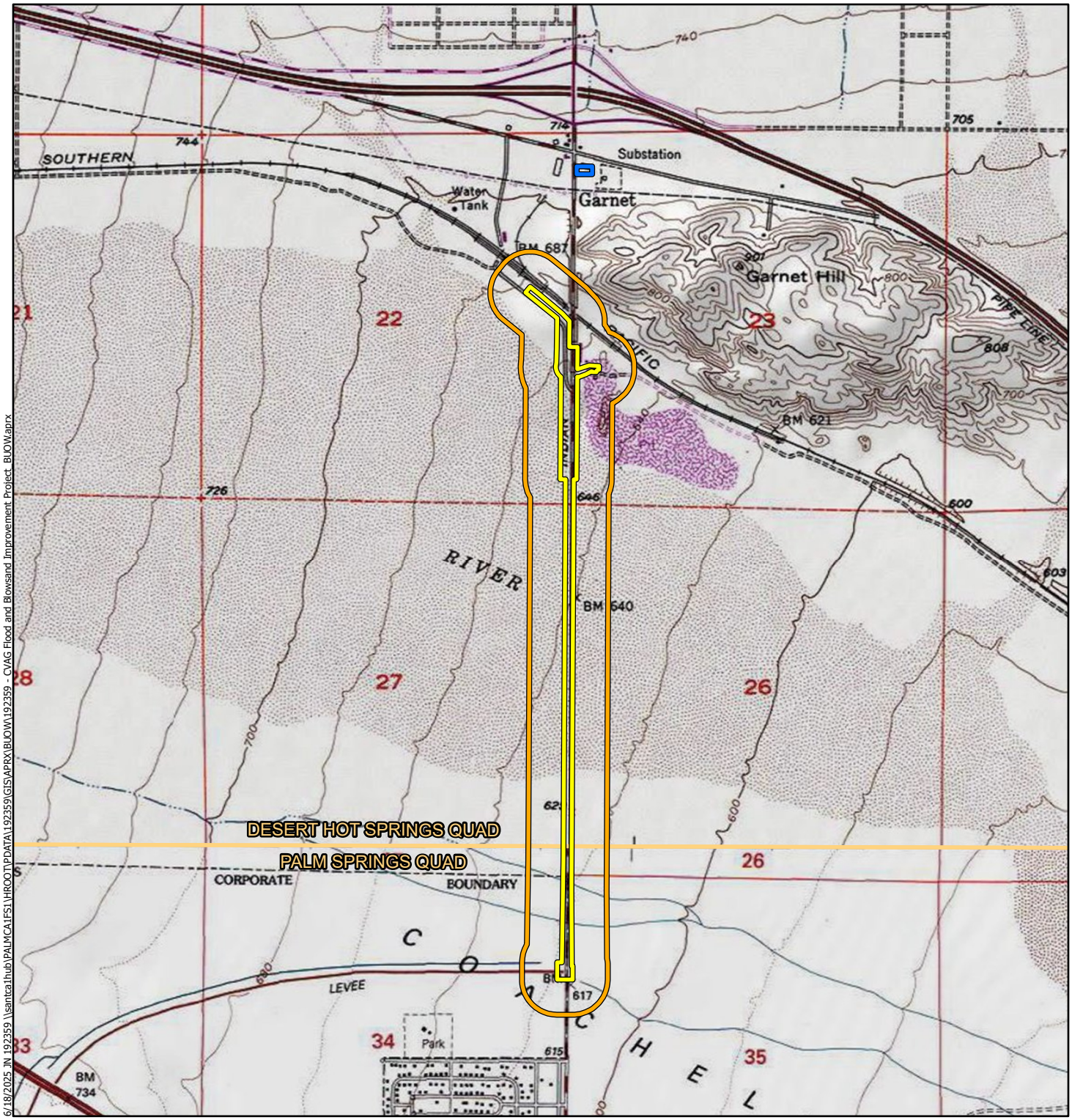
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
BURROWING OWL SURVEY REPORT

0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Riverside County

Regional Vicinity

Figure 1



Legend

- Limits of Disturbance
- Study Area (500ft Buffer)
- Potential Construction Staging Area

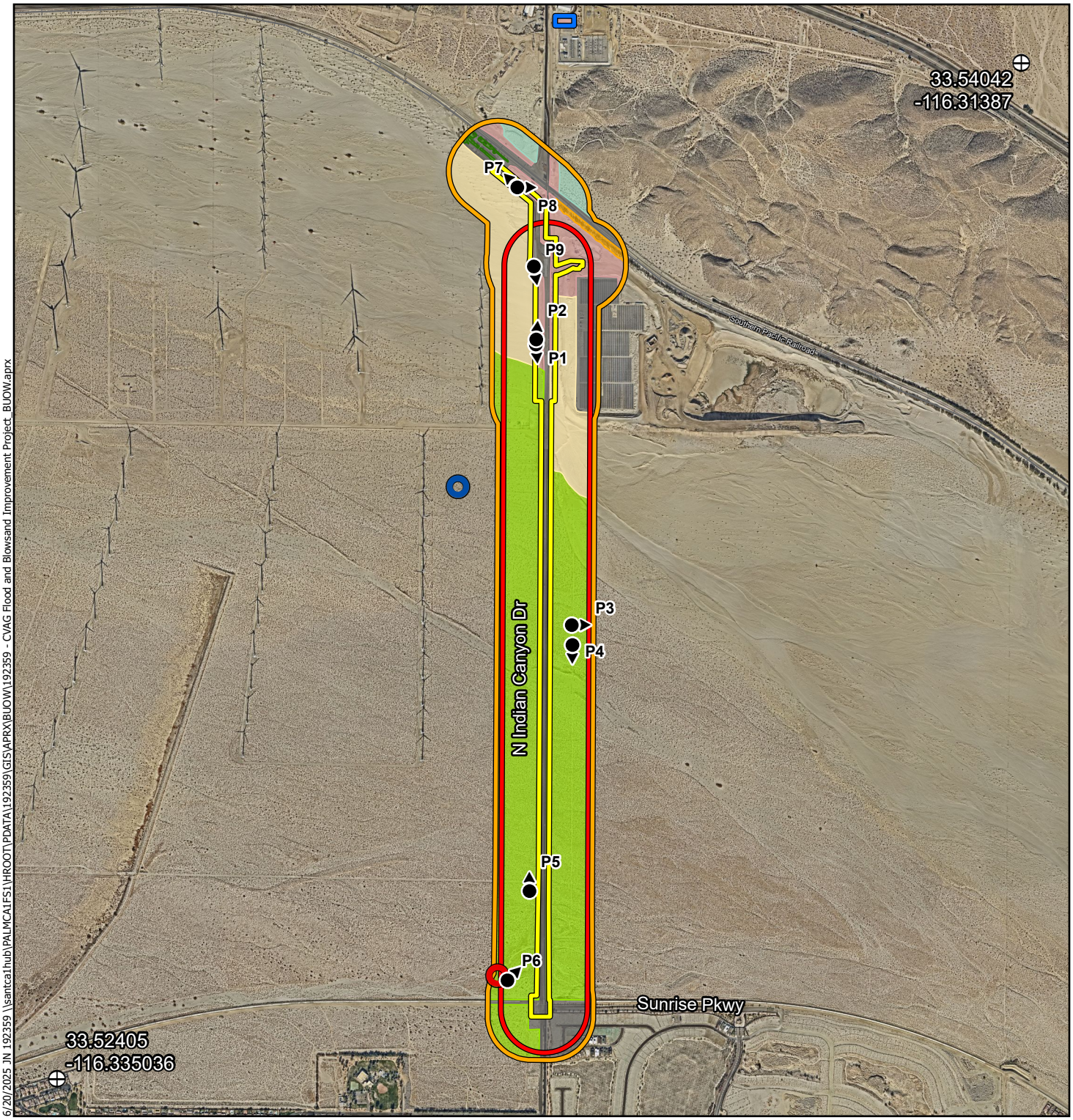
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
BURROWING OWL SURVEY REPORT

0 1,000 2,000
US Feet

Site Vicinity

Source: Esri, ArcGIS Online, Desert Hot Springs and Palm Springs USGS 7.5-Minute topographic quadrangle maps: *Palm Springs, California*

Figure 2



6/20/2025 JN 192359 \\santca1.hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\BUOW\192359 - CVAG Flood and Blowsand Improvement Project_BUOW.aprx

Legend

- Reference Point
- Photograph Point and Direction
- Occupied Burrow
- Unoccupied Burrow
- Limits of Disturbance
- 2023 Study Area (500ft Buffer)
- 2025 Study Area (500ft Buffer)
- Potential Construction Staging Area

Vegetation Communities and Land Covers

- Developed (47.2 Acres)
- Disturbed (21.71 Acres)
- Disturbed *Ambrosia salsola - Bebbia juncea* Shrubland Alliance (Ambrosia salsola Association) (168.45 Acres)
- Disturbed Creosote Bush Scrub (5.29 Acres)
- Ephemeral Desert Sand Fields (47.83 Acres)
- Ornamental (0.75 Acres)
- Tamarisk Thickets (1.81 Acres)

Note: The biological study area established for the burrowing owl survey is a 500-foot buffer off the centerline of N. Indian Canyon Road.

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
BURROWING OWL SURVEY REPORT

0 0.13 0.25 Miles

Source: Esri, ArcGIS Online, Riverside County, 2025 Nearmap Imagery

Survey Results

Figure 3

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Michael Baker
INTERNATIONAL

ATTACHMENT B.
SITE PHOTOGRAPHS

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(insert photographs)



Photograph 1: View looking south from the west side of Indian Canyon Drive near Palm Springs Station Road (May 19, 2023).



Photograph 2: View looking north from west side of Indian Canyon Drive (April 21, 2023).



Photograph 3: View looking east from the east side of Indian Canyon Drive near the central portion of the survey area (June 13, 2023).



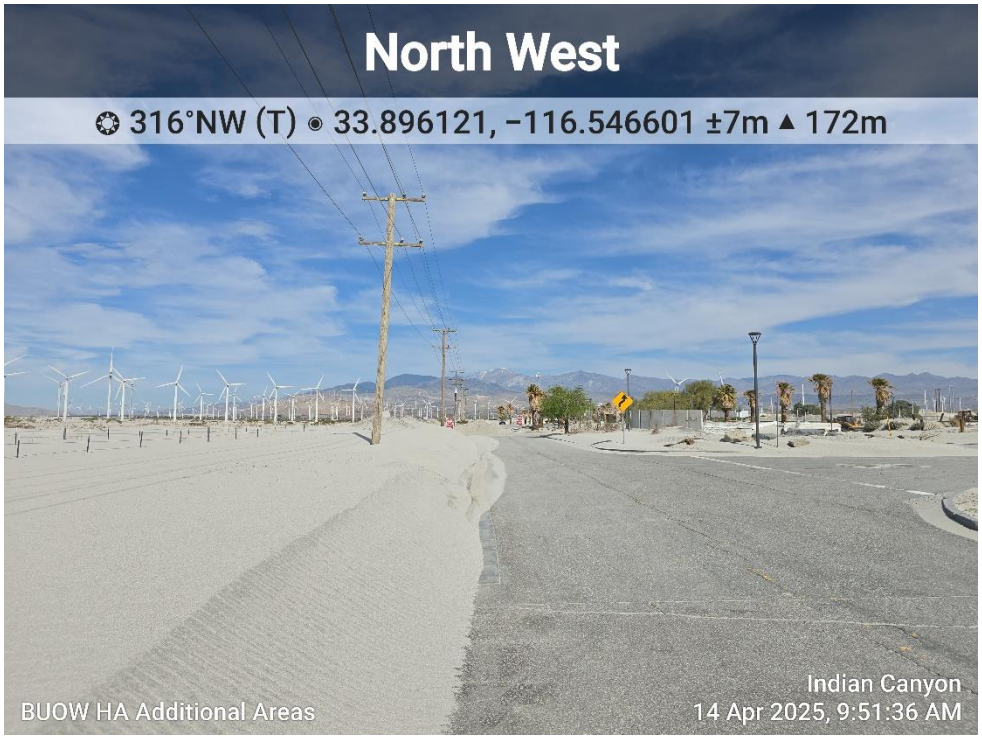
Photograph 4: View looking south from the east side of Indian Canyon Drive near central portion of the survey area (June 13, 2023).



Photograph 5: View looking north from the west side of Indian Canyon Drive near the central portion of the survey area (June 9, 2023).



Photograph 6: View looking northeast near a suitable burrow (no burrowing owl sign) west of Indian Canyon Drive from the southern boundary of survey area (April 21, 2023).



Photograph 7: View looking northwest of Palm Springs Station Road and the eastern end of the Amtrak station parking lot west of Indian Canyon Drive (April 14, 2025).



Photograph 8: View looking east from Palm Springs Station Road towards the construction of a new bridge on Indian Canyon Drive (April 14, 2025).



Photograph 9: View looking south of Indian Canyon Drive from Palm Springs Station Road (April 14, 2025).

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Michael Baker
INTERNATIONAL

ATTACHMENT C.
SPECIES COMPENDIUM

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Table C-1: Wildlife Species List

Scientific Name	**Common Name**	**Special-Status Rank**
Reptiles		
Callisaurus draconoides	zebra-tailed lizard	-
Dipsosaurus dorsalis	desert iguana	-
Phrynosoma platyrhinos	desert horned lizard	-
Birds		
*Columba livia**	rock dove*	-
Corvus brachyrhynchos	American crow	-
Corvus corax	common raven	-
Mimus polyglottos	northern mockingbird	-
Tyrannus vociferans	Cassin's kingbird	-
Zenaida macroura	mourning dove	-
Mammals		
Lepus californicus	black-tailed jackrabbit	-
Ammospermophilus leucurus	white-tailed antelope squirrel	-

* **Non-native species**

Appendix B4

Aquatic Resources Delineation Report

WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT– PHASE ONE, INDIAN CANYON DRIVE

CITY OF PALM SPRINGS, RIVERSIDE COUNTY, CALIFORNIA

DRAFT AQUATIC RESOURCES DELINEATION REPORT

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EXECUTIVE SUMMARY

At the request of the Coachella Valley Association of Governments, Michael Baker International has prepared this Aquatic Resources Delineation Report for the Western Coachella Valley Flood and Blowsand Road Improvement Project located in the City of Palm Springs, Riverside County, California. Following a comprehensive desktop analysis of literature and data on aquatic resources within the region, site investigations were conducted on May 24, 2023, and April 14, 2025 by qualified wetland delineators to determine the jurisdictional limits of waters of the U.S. and waters of the State (including streambeds and potential wetlands), located within the proposed project's limits of disturbance for a total study area of approximately 47.6 acres. The delineation was conducted following the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008), *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (USACE 2025), *Streamflow Duration Assessment Methods for the Arid West and Western Mountains of the United States,* Version 2.0 (Mazor et al. 2024), and *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2021), and in compliance with Section 1602 of the California Fish and Game Code.

The study area contains a total of 5.03 acres of jurisdictional waters of the U.S. and 6.48 acres of jurisdictional waters of the State. Jurisdictional areas consist of non-wetland desert dry wash/ephemeral streambeds associated with the Whitewater River and Chino Creek. These features occur on both sides of Indian Canyon Drive.

Placement of fill material or alteration of the streambed within these waters is subject to the regulatory approvals by the US Army Corps of Engineers, Colorado River Regional Water Quality Control Board, and California Department of Fish and Wildlife, collectively referred to as regulatory agencies.

This report presents Michael Baker's best effort at determining the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any jurisdictional delineation, only the regulatory agencies can make a final determination of jurisdiction. If the results contained in this report are confirmed by the regulatory agencies, then any construction activities in the identified jurisdictional limits would require acquisition of regulatory permits.

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ACRONYMS AND ABBREVIATIONS

APT	Antecedent Precipitation Tool
CDFW	California Department of Fish and Wildlife
GIS	Geographic Information System
Michael Baker	Michael Baker International
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OHWM	ordinary high water mark
OHWM Manual	*National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams*
The Procedures	*State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*
project	Western Coachella Valley Flood and Blowsand Road Improvement Project
Revised Definition	*Revised Definition of "Waters of the United States"; Conforming*
RWQCB	Regional Water Quality Control Board
SDAM	*Streamflow Duration Assessment Methods for the Arid West and Western Mountains of the United States*
SWRQB	State Water Resources Control Board
TNW	Traditionally Navigable Water
UPL	Upland
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey

1 INTRODUCTION

This report has been prepared to document the jurisdictional authority of the US Army Corps of Engineers (USACE), the Colorado River Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW), collectively referred to as the regulatory agencies, pursuant to Sections 401 and 404 of the federal Clean Water Act, the California Porter-Cologne Water Quality Control Act, and Sections 1600 et seq. of the California Fish and Game Code. The analysis presented in this report is supported by field surveys and verification of site conditions conducted on May 24, 2023, and April 14, 2025.

This jurisdictional aquatic resource report explains the methods used to define the regulatory authority of the aforementioned regulatory agencies and documents the findings made during the field delineation. This report presents Michael Baker International's best effort at documenting the jurisdictional boundaries using the most up-to-date regulations, written policy, and guidance from the regulatory agencies. However, as with any aquatic resources assessment, only the regulatory agencies can make a final determination of jurisdictional boundaries.

1.1 PROJECT LOCATION

The project site includes an approximate 1.6-mile (8,448 linear foot) portion of Indian Canyon Drive located south of Interstate 10 between Palm Springs Station Road and Sunrise Parkway in the City of Palm Springs (Appendix A, Figure 1, Regional Vicinity). The project site is depicted in Sections 22, 23, 26, 27, 34, and 35 of Township 3 South, Range 4 East, on the Desert Hot Springs and Palm Springs US Geological Survey (USGS) 7.5-minute quadrangle maps (Appendix A, Figure 2, Site Vicinity). Specifically, the project site includes Assessor's Parcel Numbers 669-080-002, 669-240-006, 669-240-004, and 669-100-008. The study area established for the delineation includes the proposed project's limits of disturbance as shown in Appendix A, Figure 3, Proposed Project, which encompasses approximately 47.6 acres.

1.2 PROJECT DESCRIPTION

Frequent and prolonged road closures on Indian Canyon Drive due to flood and blowsand events strain the region's transportation system. The proposed project will build road improvements along Indian Canyon Drive and a bridge system that spans a portion of the Whitewater River to mitigate the adverse impacts of flood and blowsand events.

The project's limits of disturbance encompass approximately 1.6 miles of Indian Canyon Drive from Palm Springs Station Road to Sunrise Parkway. Primary improvements will occur within the Indian Canyon Drive right-of-way. Project development will occur in six phases over 24 months and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Staging would occur along the project alignment and southeast of the intersection of Indian Canyon Drive and Garnet Avenue with construction vehicles using Indian Canyon Drive south of Garnet Avenue to access the project site.

2 METHODS

The analysis presented in this report is supported by a literature review and field surveys conducted on May 24, 2023, and April 14, 2025, by qualified wetland delineators and regulatory specialists April Nakagawa, Geoffrey Chan, Ryan Henry, and John Parent. A field delineation was conducted to determine the jurisdictional limits of waters of the U.S. and waters of the State (including potential wetlands), located within the boundaries of the study area.

2.1 DESKTOP ANALYSIS

Prior to conducting the field delineation, Michael Baker conducted a thorough review of relevant literature and materials to obtain a general understanding of the environmental setting and preliminarily identify features/areas within the project site that may fall under the jurisdiction of the regulatory agencies. Each source that was reviewed is summarized below.

Watershed Review

The study area is located within the Garnet Hill sub-watershed and Whitewater River watershed, which are part of the larger Salton Sea watershed (SWRCB 2005). The Salton Sea watershed encompasses one-third of the Colorado River Basin Region (approximately 8,360 square miles). The Salton Sea is located in a closed desert basin in Riverside and Imperial Counties in Southern California, south of Indio and north of El Centro. The basin is more than 200 feet below mean sea level and has no natural outlet. Although lakes have existed in this basin in the past, the current body of water formed in 1905 when a levee broke along the Colorado River, causing its flows to enter the basin for about 18 months. The study area is approximately 38 miles northwest of the Salton Sea.

Local Climate

The Salton Sea Watershed is characterized by a year-round desert climate, with warm, sunny, dry summers, and cool, cloudy, mild winters. According to the Western Regional Climate Center, the average maximum temperature in this area of California is 108.2° F annually, and average minimum temperature is at 42.3° F annually. The warmest month on average is July at a maximum of 108.2° F, and the coolest months on average are December and January at a minimum of 42.3° F. Most precipitation occurs between November and March in the form of rain, with occasional and steadily increasing precipitation through the fall and winter; the average total precipitation is 5.49 inches annually. Snowfall does not typically occur within this area of the watershed regardless of the season.

USGS Topographic Quadrangle Map

The USGS 7.5-minute topographic map series shows geological formations and their characteristics, describing the physical setting of an area through contour lines and major surface features including lakes, rivers, streams, buildings, landmarks, and other factors that may fall

under an agency's jurisdiction. Additionally, the maps depict topography through color and contour lines, which are helpful in determining elevations and latitude and longitude within an area.

The study area is located in the southeastern portion of the Desert Hot Springs and northeastern portion of the Palm Springs USGS 7.5-minute topographic map series. The study area is relatively flat with no areas of significant topographic relief. On-site elevations range at approximately 620–680 feet above mean sea level and gently slope to the east. Surrounding land uses consist of vacant/undeveloped land, rural residential structures, improved/unimproved roadways, an Amtrak rail line, gravel mining operation, solar arrays, wind turbines, and transmission towers. No additional drainage features, ponds, basins, or gravel pits were noted.

National Hydrography Dataset

The USGS National Hydrography Dataset was reviewed to assess potential surface water features occurring in the study area (USGS 2023b). The general locations for the Whitewater River and Chino Creek are illustrated in the USGS dataset (Appendix A, Figure 3). Both drainages are tributaries to the Salton Sea and are identified in the State Water Resources Control Board's *Water Quality Control Plan* (SWRCB 2005) as major surface water resources. These drainages are located just downstream (and to the southeast) of the regionally significant groundwater recharge basins and diversion berms that were constructed in the 1920s to capture natural flows from the Whitewater River channel. The reach of the Whitewater River from the Whitewater recharge basins to Indian Canyon Drive is defined as a Wash (Intermittent or Ephemeral Stream) in the plan.

Aerial Photographs

Prior to conducting the field delineation, current and historical aerial photographs (1985-2025) of the study area were reviewed as available from Google Earth Pro Imaging (Google, Inc. 2025). Aerial photographs can be useful during the delineation process, as they often indicate the presence, if any, of drainage features and riparian/riverine habitat within the boundaries of the study area. Review of the aerial imagery revealed that the study area has remained relatively the same since 1985. The wind energy structures and flood control features to the west appear in the same configuration and some migration of the Whitewater River's active flood conveyance system is apparent. No additional drainage features were noted.

Soil Survey Review

Soils within the study area were researched prior to the field delineation using the Natural Resources Conservation Service (NRCS) Web Soil Survey for the Riverside County, Coachella Valley Area, California (NRCS 2023). Soil surveys furnish soil maps and interpretations originally needed in providing technical assistance to farmers and ranchers; in guiding other decisions about soil selection, use, and management; and in planning, research, and disseminating the results of the research. In addition, soil surveys are now heavily used to obtain soil information with respect to potential wetland environments and jurisdictional areas (i.e., soil characteristics, drainage, and color).

According to the Web Soil Survey (NRCS 2023), the project site is mapped as containing the following soil mapping units: Carsitas gravelly sand, 0 to 9 percent slopes (CdC); Carsitas cobbly sand, 2 to 9 percent slopes, (ChC); and Gravel pits and dumps (GP).

The NRCS Hydric Soils List of California (NRCS 2023) was also reviewed to verify whether on-site soils were hydric. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions. It should be noted that lists of hydric soils along with soil survey maps provide off-site ancillary tools to assist in wetland determinations, but they are not a substitute for field investigations. According to the hydric soils list, none of the on-site soil units are listed as hydric in the Riverside County, Coachella Valley Area.

National Wetlands Inventory

The U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) (USFWS 2023) was reviewed to identify the general location of wetlands, riparian, and other deepwater habitats that have been mapped to promote an understanding and conservation of wetland resources throughout the nation. According to the NWI, riverine wetlands have been mapped in the southern portion of the study area and associated with Chino Creek. The NWI classifies riverine systems as encompassing all wetlands and deepwater habitats contained within a channel aside from wetlands dominated by vegetation and habitats that interact with the ocean. Two types of riverine features were mapped: intermittent riverine streambed that is seasonally flooded (R4SBC) and an unknown perennial riverine feature with an unconsolidated bottom that is semi-permanently flooded (R5UBFx). No additional wetland features have been mapped in or immediately adjacent to the study area.

Flood Zone

The Federal Emergency Management Agency's National Flood Hazard Layer Viewer (FEMA 2023) was reviewed for flood data for the study area. Based on Flood Insurance Rate Map No. 06065C0895G, the entire study area is located in Zone A or areas subject to inundation by the 1% annual chance flood event.

2.2 FIELD DELINEATION

Following the initial data collection, Michael Baker wetland delineators conducted an on-site delineation of the study area on May 24, 2023, and April 14, 2025, using the most recent, agency-approved methods to identify and map the extent of federal and State jurisdictional features (i.e., wetland and non-wetland waters of the U.S., waters of the State, streambed, riparian vegetation). While in the field, jurisdictional features were recorded on an aerial base map at a scale of 1:2,400 (1 inch = 200 feet) using topographic contours and visible landmarks as guidelines. Taxonomic nomenclature for plant species is in accordance with *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Data points were obtained with a Garmin Map Global Positioning System to record and identify specific widths for features and the locations of photographs, soil points, and other pertinent jurisdictional features, if present. These data were then transferred as

a GIS shapefile and added to the project's jurisdictional exhibits. The jurisdictional exhibits were prepared using Esri ArcGIS software.

2.2.1 US Army Corps of Engineers Jurisdiction

For the purposes of identifying potentially jurisdictional wetlands and waters of the U.S. for the USACE in compliance with Section 404 of the Clean Water Act, the field delineation methods implemented were consistent with the approach outlined in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Regional Supplement; USACE 2008), the *Streamflow Duration Assessment Methods for the Arid West and Western Mountains of the United States,* Version 2.0 (SDAM, Mazor et al. 2024), and the *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (OHWM Manual; USACE 2025). The delineation was based on field observations and indicators of an ordinary high water mark (OHWM), as well as positive indicators for wetland vegetation, hydrology, and soils. Wetland indicator status for plant species was confirmed using the National Wetland Plant List (USACE 2023). The subsequent analysis also takes into account the EPA and the USACE's joint document the *Revised Definition of "Waters of the United States"; Conforming* (Revised Definition, Federal Register 2023).

- **Ordinary High Water Mark Assessment.** Pursuant to the OHWM Manual, delineators identified the established and maintained physical and biological signatures at the boundaries of each active channel. The OHWM Manual addresses the underlying hydrologic and geomorphic concepts pertaining to the OHWM and the field indicators, methods, and additional lines of evidence used to assess and delineate the OHWM. Delineation of the active channel signature (i.e., the OHWM) is based on identification of three primary physical or biological indicators (USACE 2008):
    - Topographic break in slope
    - Change in sediment characteristics
    - Change in vegetation characteristics (species or cover)
- **Stream Duration Assessment.** The SDAM for the Arid West and Western Mountains of the United States is intended to offer a rapid and repeatable method to distinguish between ephemeral, intermittent, and perennial streamflow regimes. Variables assessed when determining the stream duration of a given reach include the following:
    - Mean bankfull channel width
    - Aquatic macroinvertebrates: abundance of perennial indicator taxa
    - Slope
    - Number of hydrophytic plant species
    - Prevalence of rooted upland plants in the streambed

- Algal cover
- Differences in vegetation
- Riffle-pool sequence

- **Wetland Indicator Assessment.** Pursuant to the OHWM Manual and Regional Supplement, key explicit environmental criteria for determining the presence of potential federal and state jurisdictional wetlands in the study area include:
  - Soil: Soil characteristics that result from the influence of periodic or permanent inundation or soil saturation for extended periods that further affect anaerobic conditions (i.e., chemical reduction in the soils or hydric soils).
  - Hydrology: The presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by groundwater or surface water.
  - Vegetation: A prevalence of vegetation typically adapted for life in saturated soil conditions (i.e., hydrophytic vegetation).

  Positive indicators of all three parameters are normally present in wetlands. Presence of primary and secondary wetland hydrology indicators were documented for each identified aquatic resource feature in the study area. Potential jurisdictional waters exhibiting atypical conditions were delineated in accordance with the Regional Supplement for situations involving vegetation, soil, and hydrology that may be naturally problematic and/or significantly disturbed.

  - **Antecedent Precipitation Tool**. For this project location, the Antecedent Precipitation Tool (APT), Version 2.0.0 was used to assess precipitation normalcy at the time of field data collection. The APT is a tool used by USACE and the EPA to determine whether field data were collected under “dry,” “normal,” or “wet conditions. Publicly available precipitation data for the three months prior to the site visit date(s) were reviewed to determine the climatic condition, and data from the previous 30 years were used to determine whether the assessment occurred during a typical year.

2.2.2 California Department of Fish and Wildlife Jurisdiction

For the purposes of identifying potentially jurisdictional wetlands and waters of the State for the CDFW in compliance with Section 1602 of the California Fish and Game Code, Michael Baker delineated the top of bank for stream and channels or the limit of the adjacent riparian vegetation, whichever was greater.

2.2.3 Regional Water Quality Control Board Jurisdiction

For the purposes of identifying potentially jurisdictional wetlands and waters of the state for the RWQCB in compliance with Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act, the field delineation methods implemented were consistent with the approach

outlined in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987), Regional Supplement (USACE 2008), the OHWM Manual (USACE 2025), and the *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (The Procedures, SWRCB 2021). The assessment relied on field observations and indicators of an OHWM, as well as positive indicators for wetland vegetation, hydrology, and soils. Areas regulated by the RWQCB are generally coincident with the USACE but include features isolated from waters of the U.S. that have evidence of surface water inundation.

The Procedures adopted by the SWRQB contain a wetland definition and wetland delineation procedures. The Procedures are largely consistent with the three-parameter approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology implemented by the USACE and outlined in the Regional Supplement to the USACE Manual. However, one exception is that an area can naturally lack vegetation and still qualify as a wetland water of the State if it satisfies both the hydric soil and wetland hydrology parameters.

3 EXISTING CONDITIONS

3.1 LANDSCAPE SETTING

The study area is located in the Coachella Valley of Riverside County, California. The study area includes a portion of the Whitewater River that conveys significant seasonal stormflows across the study area (and Indian Canyon Drive) from west to east. The arid region also experiences frequent high winds that have created active, shielded, and ephemeral dunes and sand fields, also referred to as blowsand habitats. These blowsand areas migrate and often cover surface roads and result in frequent closures due to sand buildup. During the site visit, such an event occurred; an excavator was observed clearing blowsands along the northwestern project boundary by Palm Springs Station Road to maintain clearance along northern Indian Canyon Drive.

According to the *Coachella Valley Multiple Species Habitat Conservation Plan* (CVMSHCP; CVAG 2007), two types of vegetation communities/land covers were mapped in the Whitewater Floodplain Conservation Area, which overlaps the study area: ephemeral desert sand fields and stabilized shielded desert sand fields. During the field delineation, cheesebush (*Ambrosia salsola*, UPL) was identified as a dominant species in the study area. Other common plant species included Mediterranean grass (*Schismus barbatus,* UPL), Fremont pincushion (*Chaenactis fremontii*, UPL), and fanleaf crinklemat (*Tiquilia plicata*, UPL), along with a mixed shrub cover of sweetbush (*Bebbia juncea*, UPL), Emory's indigo bush (*Psorothamnus emoryi*, UPL), and white bursage (*Ambrosia Dumosa*, UPL) occurring at lower densities. Vegetation in the channels was sparse and, in some cases, absent as a result of the characteristic flood magnitude for these environments, which produce short duration, high-intensity rainfall and subsequent substantial runoff. Other areas of disturbance include desert twinbugs (*Dicoria canescens*, UPL) and Saharan mustard (*Brassica tournefortii*, UPL), and infrequent patches of scalebroom (*Lepidospartum squamatum,* FACU). Upland/terrace locations generally exhibited higher densities of vegetation. Appendix A, Figure 4, Vegetation Communities/Land Covers provides a general map of vegetation communities and land covers in the study area.

3.2 AQUATIC RESOURCES

3.2.1 Overview

Following is a summary of the aquatic resources delineated within the study area, including each resource's preliminary regulatory status. The drainages investigated in the study area are tributaries to the Salton Sea, which is a Traditional Navigable Water (TNW). Therefore, these features qualify as waters of the U.S. and fall under the regulatory authority of the USACE.

Representative photographs of the study area are provided in Appendix B. All data collected in the field is provided in Appendices C, D, E, and F. Appendix A, Figure 5, Jurisdictional Delineation Map provides a complete geographic overview of the features discussed. Table 1 summarizes

the aquatic resources in the study area, including their classification, locations, areas, and lengths.

Table 1. Summary of Aquatic Resources in the Study Area

Aquatic Resources	ID	Name	Classification Code [1]	Location: Latitude	Location: Longitude	Total Area USACE/ CDFW (acres)	Total Length (linear feet)
Non-Wetland Waters of the U.S./ State	WW-1	Whitewater River 1	R4SBC	33.891221	-116.545781	1.52 / 2.97	101.07
Non-Wetland Waters of the U.S./ State	WW-2	Whitewater River 2				2.68 / 2.68	203.79
Non-Wetland Waters of the U.S./ State	WW-3	Whitewater River 3				0.05 / 0.05	49.19
					Whitewater River Subtotal	***4.25 / 5.70***	***354.05***
Non-Wetland Waters of the U.S./ State	CC-1	Chino Creek 1	R4SBC	33.872998	-116.545765	0.31 / 0.31	142.36
Non-Wetland Waters of the U.S./ State	CC-2	Chino Creek 2				0.38 / 0.38	202.19
Non-Wetland Waters of the U.S./ State	CC-3	Chino Creek 3				0.07 / 0.07	80.20
Non-Wetland Waters of the U.S./ State	CC-4	Chino Creek 4				0.02 / 0.02	76.17
					Chino Creek Subtotal	***0.78 / 0.78***	***500.92***
					Non-Wetland Waters of the U.S./State Total	**5.03 / 6.48**	**854.97**
Potential Wetlands	N/A	N/A	N/A	N/A	N/A	N/A	N/A
					Potential Wetlands Total	**N/A**	**N/A**

Notes:
[1] Classification Code (FGDC 2013): R4SBC = riparian, intermittent, seasonally flooded

3.2.2 Non-Wetland Waters of the U.S./State

Portions of two ephemeral drainage features were identified in the study area during the site visit: Whitewater River and Chino Creek. Each feature is described below.

Whitewater River

The Whitewater River is an ephemeral channel that originates off-site, flowing east/southeast and overlapping both western and eastern boundaries. The river enters the western project boundary as one mainstem (WW1) before splitting into multiple channels (WW2 and WW3) and diffusing as it reaches the Indian Canyon Drive shoulder. All of the channels converge along the east side of the roadway and continue flowing southeast out of the eastern project boundary. Beyond the project boundary, the Whitewater River continues flowing southeast for approximately 50 miles before draining into the Salton Sea. No standing or flowing water was observed in association

with the Whitewater River. The river exhibited clear evidence of hydrology, and an OHWM ranging from 50 feet to 700 feet in width was observed on-site via geomorphic, vegetation, sediment, and ancillary indicators (Appendix D, OHWM Data Sheets and Appendix E, Aquatic Resource Excel Sheet). The Whitewater River system is characterized by loose sandy soils and gravel that is mostly devoid of any vegetation within the streambed.

A desktop SDAM indicates that the subject reach of the Whitewater River is likely ephemeral. However, this Strahler reach of the Whitewater River receives flows from Garnet Wash and the San Gorgonio River upstream; these flows result in regular ponding within the maintained earthen flood control berms and basins located approximately 1.8 miles west of the project site. Recurring saturation is also visible throughout the Strahler reach on aerial imagery, and the Whitewater River exhibits a continuous surface connection to a TNW. Therefore, it is assumed that this portion of the Whitewater River is likely intermittent and subject to USACE jurisdiction. The APT results indicate that the site visits were conducted during normal conditions (Appendix F, *Stream Duration Assessment Method Data Sheets* and Appendix G, *Antecedent Precipitation Tool Results*).

The USACE and RWQCB jurisdictional width encompassed the lateral extent of the Whitewater River's OHWM within the study area. A total of 4.25 acres of USACE and RWQCB jurisdictional non-wetland waters of the U.S. are associated with the Whitewater River in the study area.

The CDFW jurisdictional width encompassed the lateral extent of the Whitewater River's top-of-bank in the study area. A total of 5.70 acres of CDFW jurisdiction, all of which would be considered unvegetated waters of the State, are associated with the Whitewater River in the study area.

Chino Creek

Chino Creek is an ephemeral channel which originates off-site, flowing from the San Jacinto Mountains east and overlapping both western and eastern boundaries. Chino Creek enters the western project boundary as several channels (CC1, CC2, CC3, and CC4), diffusing as it reaches the Indian Canyon Drive shoulder. Chino Creek continues flowing east as multiple channels on the east side of Indian Canyon Drive and continues out of the eastern boundary. Beyond the project boundary, Chino Creek continues flowing east for 1.5 miles before joining with the Whitewater River. No standing or flowing water was observed in association with Chino Creek or any of its channels. Chino Creek exhibited clear evidence of hydrology, and an OHWM ranging from 15 feet to 150 feet in width was observed on-site via geomorphic, vegetation, sediment, and ancillary indicators (Appendix D, OHWM Data Sheets and Appendix E, Aquatic Resource Excel Sheet). The Chino Creek system is characterized by loose sandy soils and gravel that supports sparse upland non-native vegetation such as Mediterranean grass, Fremont pincushion, fanleaf crinklemat, and Saharan mustard.

A desktop SDAM indicates that the subject reach of Chino Creek is likely ephemeral. However, recurring saturation is also visible throughout this Strahler reach of Chino Creek on aerial imagery, and Chino Creek exhibits a continuous surface connection to a TNW. Therefore, it is assumed that this portion of Chino Creek is likely intermittent and subject to USACE jurisdiction. The APT results indicate that the site visits were conducted during normal conditions (Appendix F, *Stream*

Duration Assessment Method Data Sheets and Appendix G, *Antecedent Precipitation Tool Results*).

The USACE and RWQCB jurisdictional width encompassed the lateral extent of Chino Creek's OHWM within the study area. A total of 0.78 acres of USACE and RWQCB jurisdictional non-wetland waters of the U.S. are associated with Chino Creek in the study area.

The CDFW jurisdictional width encompassed the lateral extent of Chino Creek's top-of-bank in the study area. A total of 0.78 acres of CDFW jurisdiction, all of which would be considered unvegetated waters of the State, are associated with Chino Creek in the study area.

3.2.3 Wetland Waters of the U.S./State

An area must exhibit all three wetland parameters described in the Regional Supplement to be considered a federal jurisdictional wetland. Based on the results of the field delineation, no aquatic resources met all three wetland parameters, including an unvegetated wetland water of the State. Therefore, no jurisdictional wetland features exist in the study area.

4 REFERENCES

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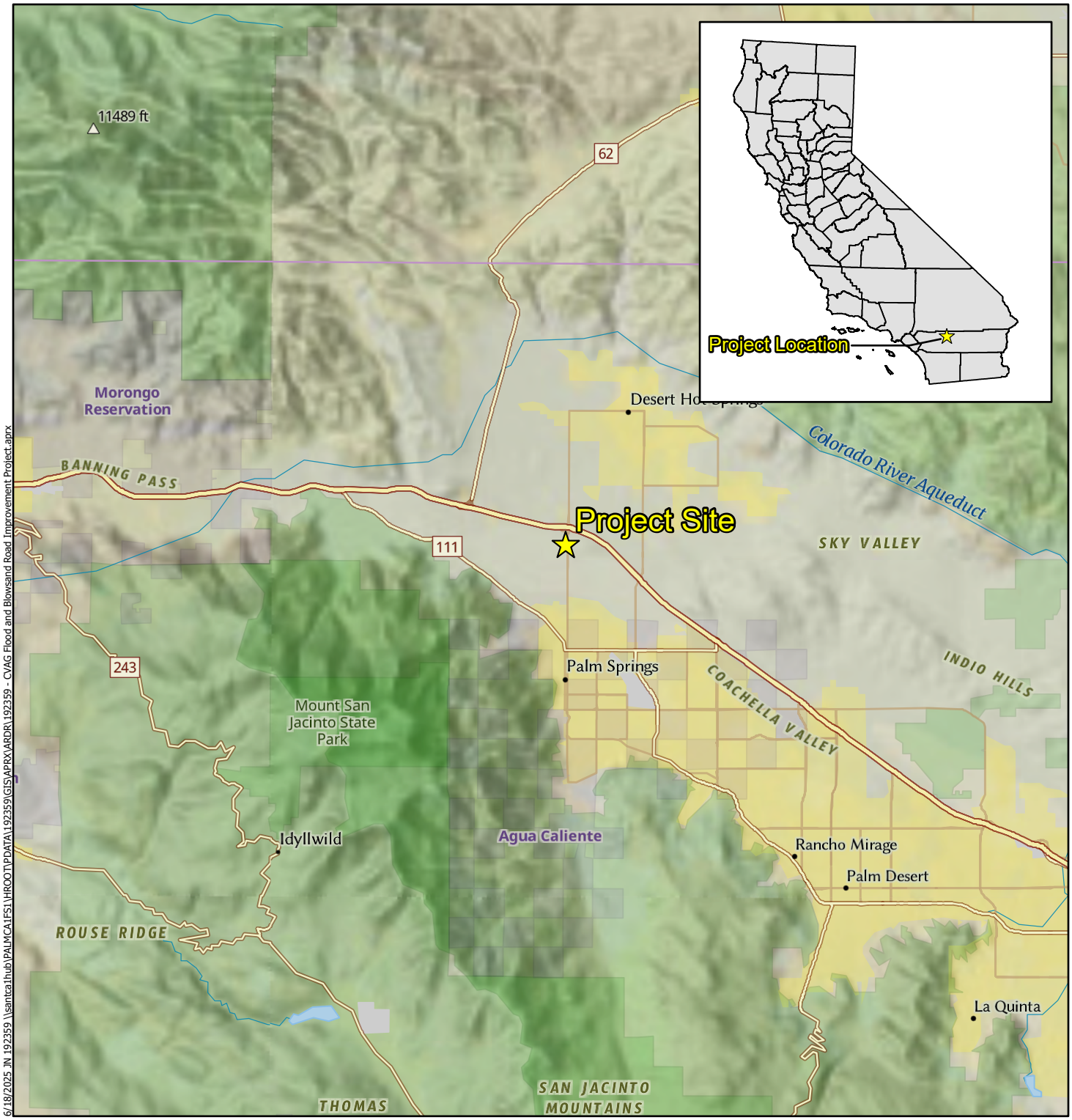
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Appendix A Figures



Legend

★ Project Site

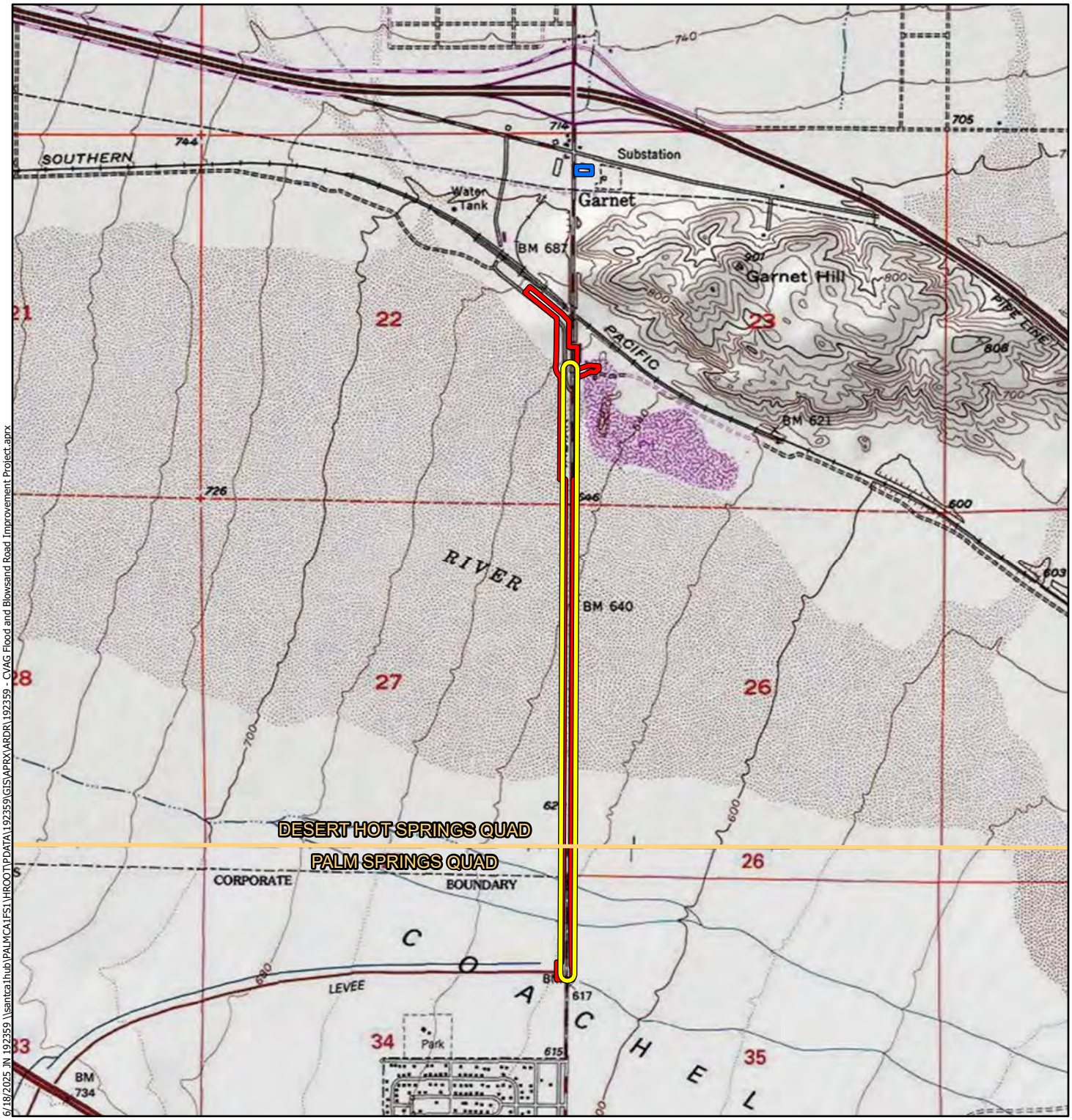
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 2.5 5 Miles

Source: Esri, ArcGIS Online, USGS, Riverside County

Regional Vicinity

Figure 1



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\DATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area

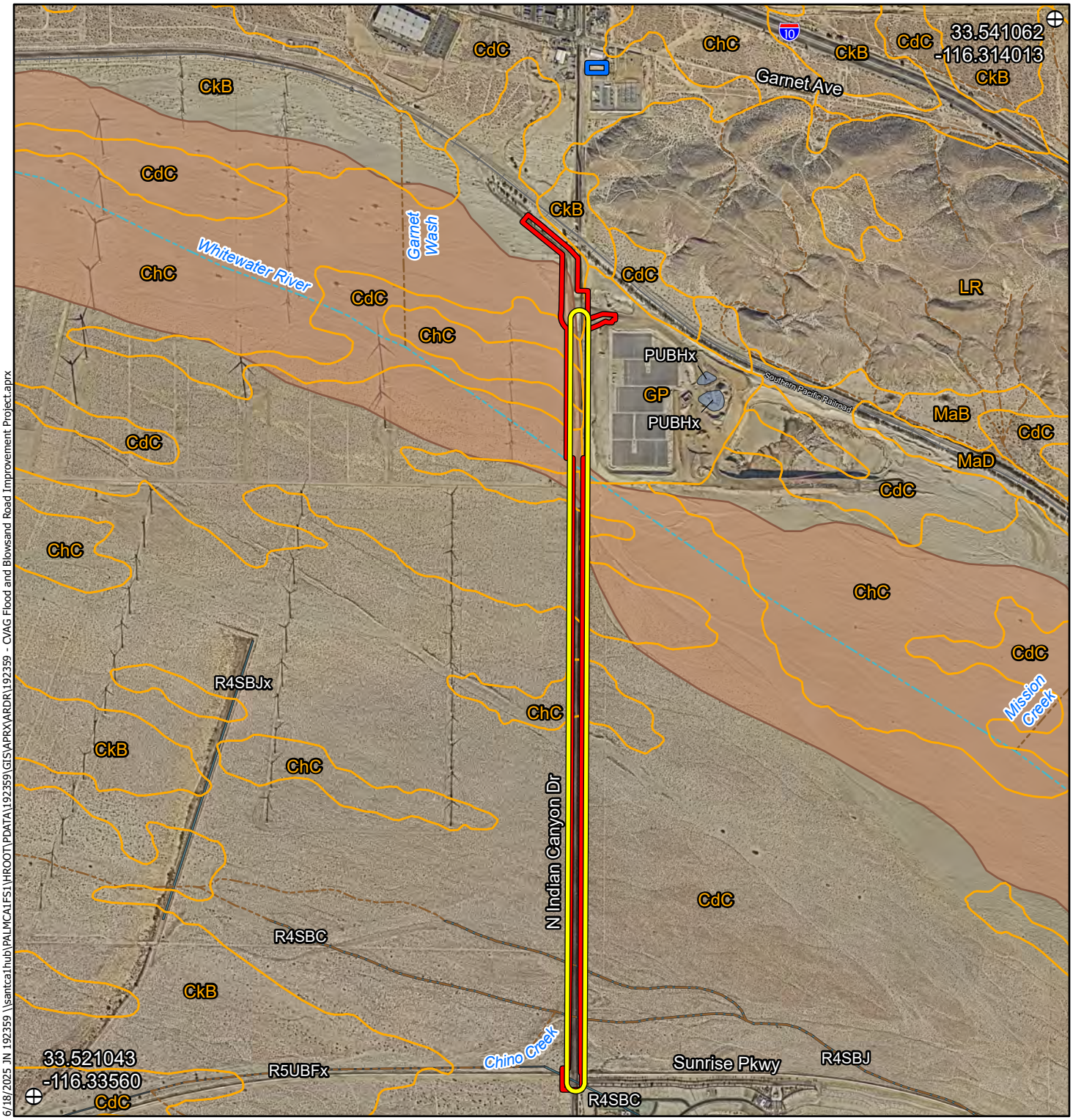
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 1,000 2,000
US Feet

Site Vicinity

Source: Esri, ArcGIS Online, Desert Hot Springs and Palm Springs USGS 7.5-Minute topographic quadrangle maps: *Palm Springs, California*

Figure 2



6/18/2025 JN 192359 \\santca1.hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- Reference Point
- 2023 Study Area
- 2025 Study Area
- Potential Construction Staging Area
- Soils

National Hydrography Dataset (NHD)

- Stream/River= Ephemeral
- Stream/River= Intermittent
- Wash

National Wetlands Inventory (NWI)

- Freshwater Pond
- Riverine

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

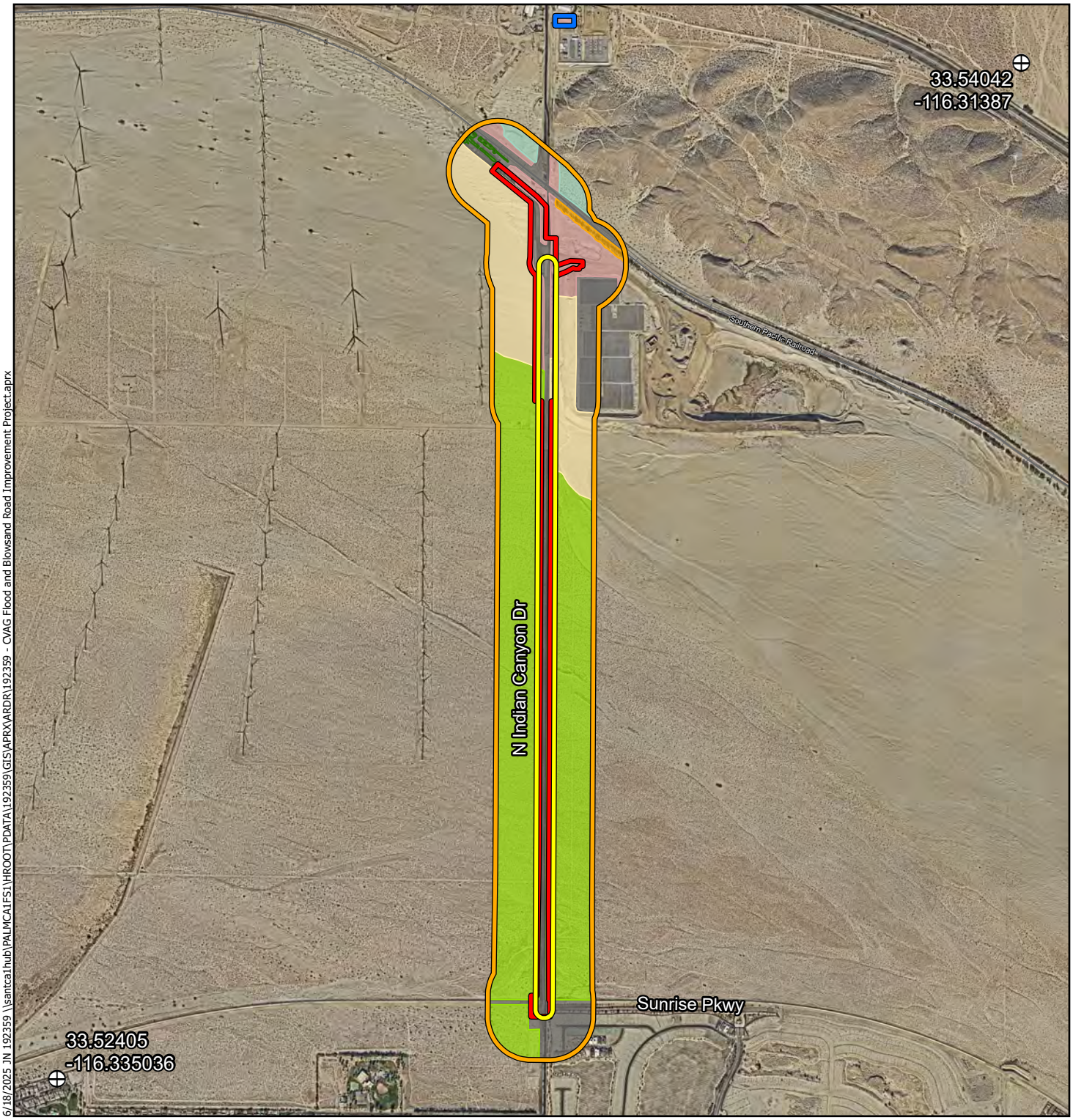
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 0.13 0.25 Miles

Proposed Project

Source: Esri, ArcGIS Online, USGS, USFWS, USDA, Riverside County, 2025 Nearmap Imagery

Figure 3



6/18/2025 JN 192359 \\santca1hub\PALMCA1FS1\HROOT\PDATA\192359\GIS\APRX\ARDR\192359 - CVAG Flood and Blowsand Road Improvement Project.aprx

Legend

- Reference Point
- 2023 Study Area
- 2025 Study Area
- 2025 Study Area (500ft Buffer)
- Potential Construction Staging Area

Vegetation Communities and Land Covers

- Developed (47.2 Acres)
- Disturbed (21.71 Acres)
- Disturbed *Ambrosia salsola - Bebbia juncea* Shrubland Alliance (Ambrosia salsola Association) (168.45 Acres)
- Disturbed Creosote Bush Scrub (5.29 Acres)
- Ephemeral Desert Sand Fields (47.83 Acres)
- Ornamental (0.75 Acres)
- Tamarisk Thickets (1.81 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

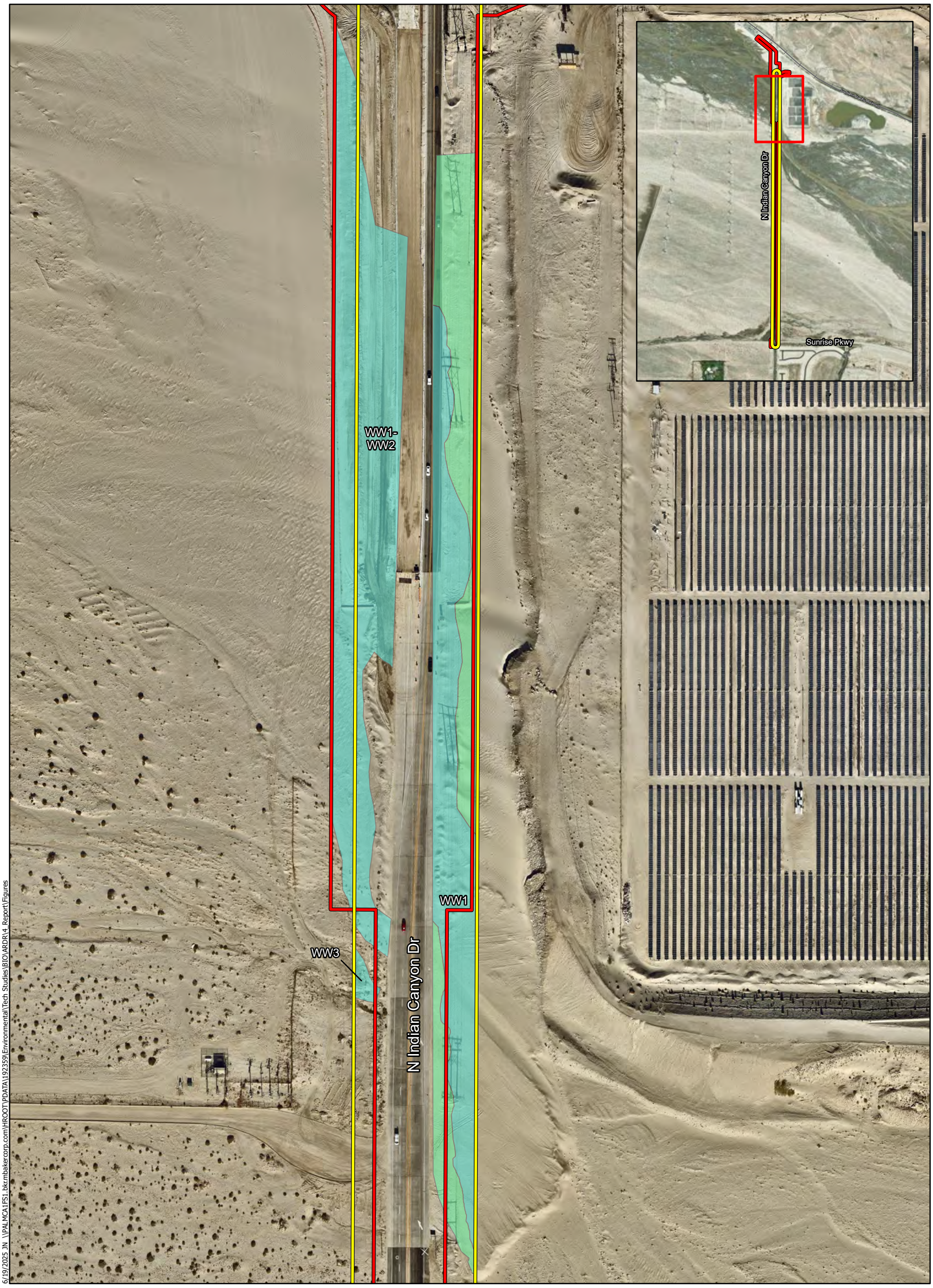
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 0.13 0.25 Miles

Vegetation Communities/Land Covers

Source: Esri, ArcGIS Online, Riverside County, 2025 Nearmap Imagery

Figure 4



6/19/2025 JN \\PALMCA1FS1.bkrmbakercorp.com\HROOT\PDATA\192359\Environmental\Tech Studies\BIO\ABDR\4_Report\Figures

Legend

2023 Study Area

2025 Study Area

Jurisdiction

USACE non-wetland WoUS / RWQCB non-wetland WoS / CDFW non-vegetated streambed (4.25 Acres)

CDFW non-vegetated streambed (1.45 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

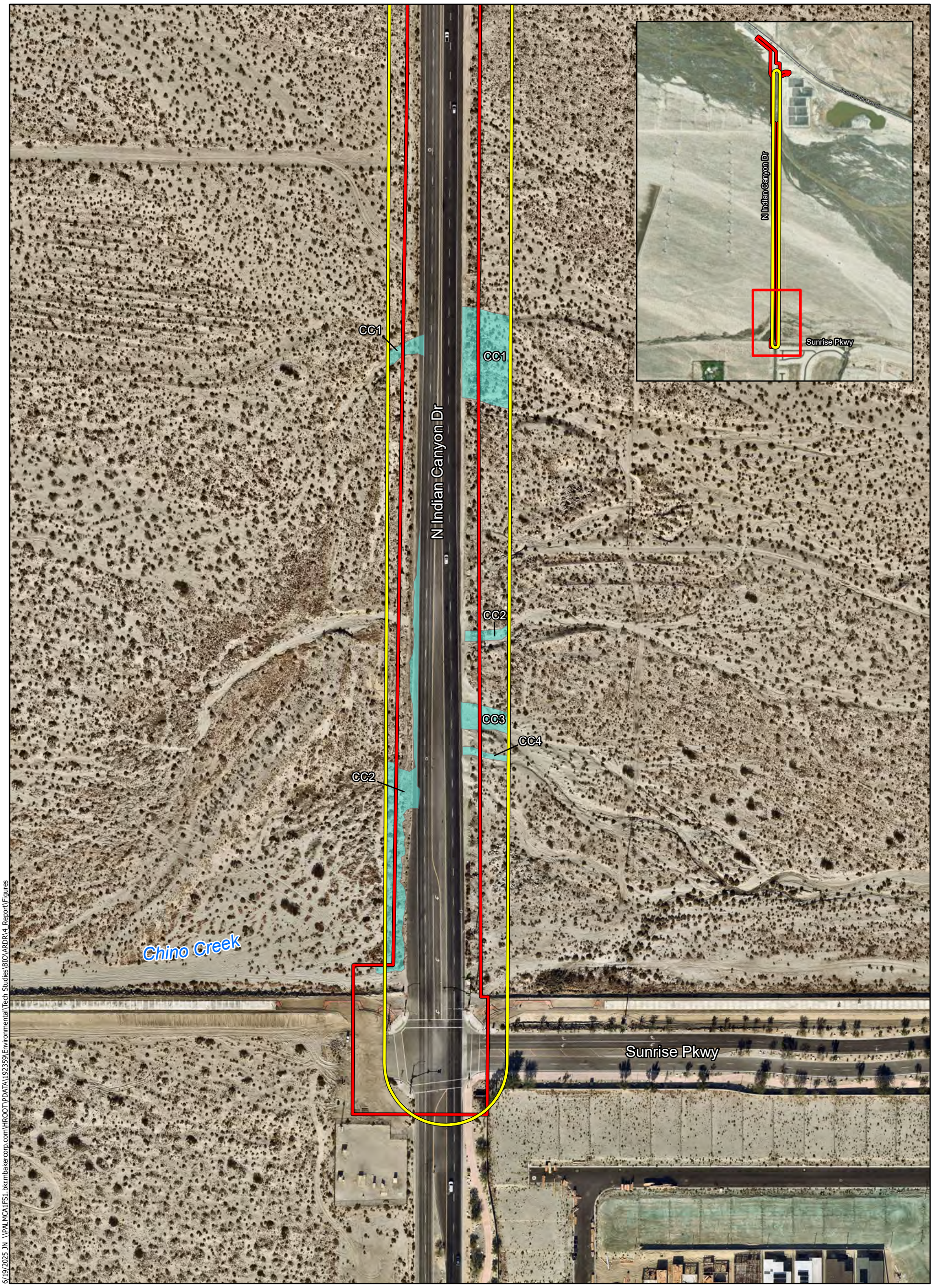
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

0 75 150 US Feet

Source: Esri, ArcGIS Online, USACE, CDFW, Riverside County, 2025 Nearmap Imagery

Jurisdictional Delineation Map

Figure 5a



6/19/2025 JN \\PALMCA1FS1.bkrmbakercorp.com\HROOT\PDATA\192359\Environmental\Tech Studies\BIO\ARDR\4_Report\Figures

Legend

2023 Study Area

2025 Study Area

Jurisdiction

USACE non-wetland WoUS / RWQCB non-wetland WoS / CDFW non-vegetated streambed (0.78 Acres)

Note: The biological study area established for the delineation is a 100-foot buffer off the centerline of N. Indian Canyon Road.

CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS, PHASE ONE, INDIAN CANYON DRIVE
AQUATIC RESOURCES DELINEATION REPORT

Jurisdictional Delineation Map

0 75 150 US Feet

Source: Esri, ArcGIS Online, USACE, CDFW, Riverside County, 2025 Nearmap Imagery

Figure 5b

Appendix B Site Photographs



Photograph 1: View of North Indian Canyon Drive facing southwest, taken from the intersection with Palm Springs Station Road within the northern portion of the BSA.



Photograph 2: View of North Indian Canyon Drive facing northwest, taken from the intersection with Palm Springs Station Road within the northern portion of the BSA.



Photograph 3: View of Whitewater River (WW1) facing northwest, taken from the upland sand deposits along North Indian Creek Drive.



Photograph 4: View of WW1 facing northeast, taken from the upland sand deposits along North Indian Creek Drive.



Photograph 5: View of WW1 at North Indian Canyon Drive facing northeast.



Photograph 6: View of WW1 along the east side of North Indian Canyon Drive facing upstream (northeast).



Photograph 7: View of WW1 along the east side of North Indian Canyon Drive facing downstream (southeast).



Photograph 8: View of Chino Creek Tributary 1 (CC1) facing upstream (west).



Photograph 9: View of CC1 facing downstream (east) towards North Indian Canyon Drive. Taken from within the center of CC1.



Photograph 10: View of CC1 on the east side of North Indian Canyon Drive facing downstream (east), away from the road. Taken from within the center of CC1.



Photograph 11: View of CC1 facing upstream (west), towards North Indian Canyon Drive. Taken from within the center of CC1.



Photograph 12: View of Chino Creek Tributary 2 (CC2) facing south along the east side of North Indian Canyon Drive.



Photograph 13: Overview of CC2 facing northwest, away from North Indian Canyon Drive. Taken from within the center of CC2.



Photograph 14: View of Chino Creek Tributary 2 (CC2) on the east side of North Indian Canyon Drive facing downstream (east), away from the road. Taken from within the center of CC2.



Photograph 15: View of Chino Creek Tributary 3 (CC3) on the east side of North Indian Canyon Drive facing northwest towards the road. Taken from within the center of CC3.



Photograph 16: View of Chino Creek Tributary 4 (CC4) on the east side of North Indian Canyon Drive facing west, towards the road. Taken from within the center of CC4.

Appendix C List of Plant Species

Plant Species	Arid West Indicator Status
VASCULAR SPECIES	
EUDICOTS	
ADOXACEAE—Muskroot Family	
Sambucus nigra ssp. caerulea—blue elderberry	FACU
ANACARDIACEAE—Sumac Or Cashew Family	
Schinus molle—Peruvian peppertree*	FACU
ASTERACEAE—Sunflower Family	
Acourtia microcephala—sacapellote	NI
Artemisia californica—California sagebrush	NI
Centaurea melitensis—Maltese star-thistle*	NI
Deinandra fasciculata—clustered tarweed	FACU
Deinandra paniculata—paniculate tarplant	FACU
Encelia californica—California brittle bush	NI
Eriophyllum confertiflorum—golden-yarrow	NI
Lasthenia gracilis—needle goldfields	NI
Sonchus asper—spiny sowthistle*	FAC
Oncosiphon pilulifer—stinknet*	FACU
BORAGINACEAE—Borage Family	
Eriodictyon crassifolium—thick leaf yerba santa	NI
Pectocarya linearis—sagebrush combseed	NI
BRASSICACEAE—Mustard Family	
Hirschfeldia incana—shortpod mustard*	NI
Lepidium didymum—lesser swinecress*	NI
Raphanus sativus—cultivated radish*	NI
CHENOPODIACEAE—Goosefoot Family	
Kochia scoparia—no common name*	FAC
Salsola tragus—prickly Russian thistle*	FACU
CRASSULACEAE—Stonecrop Family	
Crassula connata—sand pygmyweed	FAC
FABACEAE—Legume Family	
Acmispon strigosus—strigose bird's-foot trefoil	NI
Lupinus bicolor—miniature lupine	NI
Lupinus truncatus—collared annual lupine	NI
Melilotus indicus—annual yellow sweetclover*	FACU
Trifolium pratense—red clover*	FACU
GERANIACEAE—Geranium Family	
Erodium cicutarium—redstem stork's bill*	NI
LAMIACEAE—Mint Family	
Salvia mellifera—black sage	NI

Plant Species	Arid West Indicator Status
MALVACEAE—Mallow Family	
Malva parviflora—cheeseweed mallow*	NI
NYCTAGINACEAE—Four O'clock Family	
Mirabilis laevis var. crassifolia—California four o'clock	NI
OLEACEAE—Olive Family	
Olea europaea—olive*	NI
PHRYMACEAE—Lopseed Family	
Diplacus brevipes—widethroat yellow monkeyflower	NI
PLANTAGINACEAE—Plantain Family	
Keckiella antirrhinoides—bush penstemon	NI
Nuttallanthus texanus—Texas toadflax	NI
PLATANACEAE—Plane Tree, Sycamore Family	
Platanus racemosa—California sycamore	FAC
POLYGONACEAE—Buckwheat Family	
Eriogonum fasciculatum—California buckwheat	NI
Polygonum aviculare—prostrate knotweed*	FAC
RHAMNACEAE—Buckthorn Family	
Rhamnus crocea—redberry buckthorn	NI
SOLANACEAE—Nightshade Family	
Solanum xanti—Purple nightshade	NI
MONOCOTS	
JUNCACEAE—Rush Family	
Juncus bufonius—toad rush	FACW
LILIACEAE—Lily Family	
Calochortus splendens—splendid mariposa lily	NI
POACEAE—Grass Family	
Bromus diandrus—ripgut brome*	NI
Bromus hordeaceus—soft brome*	FACU
Bromus rubens—red brome*	UPL
Festuca myuros—rat-tail fescue*	FACU
Festuca perennis—perennial rye grass*	FAC
Hordeum murinum—mouse barley*	FACU
Hordeum vulgare—common barley*	NI
Phalaris aquatica—Harding grass*	FACU
Schismus barbatus—common Mediterranean grass*	NI
THEMIDACEAE—Brodiaea Family	
Dipterostemon capitatus—bluedicks	FACU

* Non-native species

Arid West Indicator Status

OBL Obligate Wetland – Almost always occur in wetlands (estimated probability of >99%)

FACW Facultative Wetland – Usually occur in wetlands (estimated probability of 67% to 99%)

FAC Facultative – Equally likely to occur in wetlands/non-wetlands (estimated probability of 34% to 66%)

FACU Facultative Upland – Usually occur in non-wetlands (estimated probability 67% to 99%)

UPL Obligate Upland – Almost always occur in non-wetlands (estimated probability >99%)

NI No Indicator – Species does not have an indicator status

Source: Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 Wetland Ratings. Phytoneuron 2016-30: 1–17. Published 28 April 2016. ISSN 2153 733X. Accessed March 2020. http://wetland-plants.usace.army.mil/nwpl_static/data/DOC/lists_2016/National/National_2016v2.pdf.

Appendix D OHWM Data Sheets

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: Flood and Blowsand Road	Site Name: Chino Creek	Date and Time: 05/24/2023, 10:45AM
Location (lat/long): 33.871304°, -116.545661°	Investigator(s): G. Chan, R. Henry, and A. Nakagawa	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [x] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources. Were there any recent extreme events (floods or drought)?

Heavy rain year of 2023

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Chino Creek main stem - sandy channel bottom with dunes transitioning to gravel band at break in slope; devoid of vegetation. High winds and clear skies. Heavily trafficked road (North Indian Canyon Drive)

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* b
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [x] **Shelving:** a
  - [x] *shelf at top of bank:* x
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:* a
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [x] **Mudcracks:** b
- [x] **Changes in particle-sized distribution:** x
  - [x] *transition from* sand to gravel
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:** a

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [x] *vegetation absent to:* graminoids
  - [ ] *moss to:*
  - [x] *forbs to:* woody shrubs
  - [x] *graminoids to:* forbs
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:** a
- [x] **Presence of large wood:** a
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:

N/A

Project ID #: Flood and Blowsand Road

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

N/A

Step 5 Describe rationale for location of OHWM

Reviewed past and historical aerial imagery which aligns with the field determinations. Change in particle-sized distribution noted along the entire outer edge of the OHWM. Looser, finer sands were located within the channel bottom; larger gravel particles were deposited along the break in slope; and a mixture of gravel, loose sand, and compacted manipulated soils occur beyond the OHWM. Sandy dunes with large woody debris (possibly blown in) deposited throughout channel bed.

Additional observations or notes

An excavator was observed manipulating blowsands along northwestern roadside to maintain North Indian Canyon Drive, north of this assessment location.

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☒ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
DSCN9757	Upstream
DSCN9756	Downstream

OHWM Field Identification Datasheet Instructions and Field Procedure

Step 1 Site overview from remote and online resources **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on datasheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape.

a. **Note on the datasheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 Site conditions during the field assessment (assemble evidence)

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious man-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the datasheet** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a List evidence

Assemble evidence by checking the boxes next to each line of evidence:

a. If needed, use a separate scratch datasheet to check boxes next to possible indicators, or check boxes of possible indicators in pencil and use pen for final decision.
b. If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators	**Sediment and soil indicators**	**Vegetation Indicators**	**Ancillary indicators**
Where are the breaks in slope?	Where does evidence of soil formation appear?	Where are the significant transitions in vegetation species, density, and age?	Is there organic litter present?
Are there identifiable banks?		Is there vegetation growing on the channel bed?	
Is there an easily identifiable top of bank?	Are there mudcracks present?	If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?	Is there any leaf litter disturbed or washed away?
Are the banks actively eroding?			
Are the banks undercut?	Is there evidence of sediment sorting by grain size?	Where are the significant transitions in vegetation?	Is there large wood deposition?
Are the banks armored?			
Is the channel confined by the surrounding hillslopes?		Is the vegetation tolerant of flowing water?	Is there evidence of water staining?
Are there natural or man-made berms and levees?		Has any vegetation been flattened by flowing water?	
Are there fluvial terraces?			
Are there channel bars?			

Are the following features of fluvial transport present?
Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b **Weight each line of evidence and weigh body of evidence**

Weight each indicator by considering its importance based upon:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows?

Tips on how to assess the indicator relative to type of flow:

Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages? Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low flow indicator. The difference between high and extreme flow indicators can sometimes be difficult to determine.

***Landscape context from Step 1 can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***Information in Chapter 2 of the OHWM field manual provides information on specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.**

ii. Did recent extreme events and/or land use affect this indicator?

1. Recent floods may have left many extreme flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.
2. Droughts may cause field evidence of OHWM to be obscured, because there has been an extended time since the last high flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.
3. Both man-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can all alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provides specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describes each indicator in detail and provides examples of areas where indicators are difficult to interpret.

d. Weigh body of evidence:

i. Combine weights: integrate the weighted line of evidence (relevance, strength, reliability) of each indicator.

ii. For each of the observed indicators, which are more heavily weighted? Where do high value indicators co-occur along the stream reach? Do they co-occur at a similar elevation along the banks relative to water surface (or channel bed if there is no water).

iii. On datasheet, select the indicators used to identify the OHWM. Information in Chapter 2 of the OHWM field manual provides descriptions of specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.

e. Take photographs of indicators and attach a log using either page 2 of datasheet or another method of logging photos.

i. Annotate photos with descriptions of indicators.

Step 4 **Is additional information needed? Are other resources needed to support the lines of evidence observed in the field?**

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling, weighting, and weighing evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were needed to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the datasheet.

Step 5 **Describe rationale for location of OHWM:**

a. Why do the combination of indicators represent the OHWM?

b. If there are multiple possibilities for the OHWM, explain why there are two (or more) possibilities. Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the datasheet under Step 5.

U.S. Army Corps of Engineers (USACE)

INTERIM DRAFT RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

Form Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: Flood and Blowsand Road	Site Name: Whitewater River	Date and Time: 05/24/2023, 8:00 AM
Location (lat/long): 33.893352°/-116.545971°	Investigator(s): G. Chan, R. Henry, and A. Nakagawa	

Step 1 Site overview from remote and online resources
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [x] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [x] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?
Heavy rain year of 2023

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Main stem of Whitewater River - sandy channel bottom with dunes transitioning to gravel band at break in slope; devoid of vegetation. High winds and clear skies. Heavily trafficked road (North Indian Canyon Drive)

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:**
  - [x] *on the bank:* b
  - [ ] *undercut bank:*
  - [ ] *valley bottom:*
  - [ ] Other: _____
- [x] **Shelving:** a
  - [x] *shelf at top of bank:* x
  - [ ] *natural levee:*
  - [ ] *man-made berms or levees:* a
  - [ ] *other berms:* _____
- [ ] **Channel bar:**
  - [ ] *shelving (berms) on bar:*
  - [ ] *unvegetated:*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [x] **Mudcracks:** b
- [x] **Changes in particle-sized distribution:** x
  - [x] *transition from* sand to gravel
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:** a

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [x] *vegetation absent to:* graminoids
  - [ ] *moss to:*
  - [x] *forbs to:* woody shrubs
  - [x] *graminoids to:* forbs
  - [ ] *woody shrubs to:*
  - [ ] *deciduous trees to:*
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [ ] **Wracking/presence of organic litter:**
- [x] **Presence of large wood:** a
- [ ] **Leaf litter disturbed or washed away:**
- [ ] **Water staining:**
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:
N/A

Project ID #: Flood and Blowsand Road

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

N/A

Step 5 Describe rationale for location of OHWM

Reviewed past and historical aerial imagery which aligns with the field determinations. Change in particle-sized distribution noted along the entire outer edge of the OHWM. Looser, finer sands were located within the channel bottom; larger gravel particles were deposited along the break in slope; and a mixture of gravel, loose sand, and compacted manipulated soils occur beyond the OHWM. Sandy dunes with large woody debris (possibly blown in) deposited throughout channel bed.

Additional observations or notes

An excavator was observed manipulating blowsands along northwestern roadside to maintain North Indian Canyon Drive, adjacent to this assessment location.

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☒ Yes ☐ No If no, explain why not: _____

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description
DSCN9646	Upstream
DSCN9647	Downstream

OHWM Field Identification Datasheet Instructions and Field Procedure

Step 1 Site overview from remote and online resources **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on datasheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape.

a. **Note on the datasheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 Site conditions during the field assessment (assemble evidence)

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious man-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the datasheet** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a List evidence

Assemble evidence by checking the boxes next to each line of evidence:

a. If needed, use a separate scratch datasheet to check boxes next to possible indicators, or check boxes of possible indicators in pencil and use pen for final decision.
b. If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators	**Sediment and soil indicators**	**Vegetation Indicators**	**Ancillary indicators**
Where are the breaks in slope?	Where does evidence of soil formation appear?	Where are the significant transitions in vegetation species, density, and age?	Is there organic litter present?
Are there identifiable banks?		Is there vegetation growing on the channel bed?	
Is there an easily identifiable top of bank?	Are there mudcracks present?	If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?	Is there any leaf litter disturbed or washed away?
Are the banks actively eroding?			
Are the banks undercut?	Is there evidence of sediment sorting by grain size?	Where are the significant transitions in vegetation?	Is there large wood deposition?
Are the banks armored?			
Is the channel confined by the surrounding hillslopes?		Is the vegetation tolerant of flowing water?	Is there evidence of water staining?
Are there natural or man-made berms and levees?		Has any vegetation been flattened by flowing water?	
Are there fluvial terraces?			
Are there channel bars?			

Are the following features of fluvial transport present?
Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b **Weight each line of evidence and weigh body of evidence**

Weight each indicator by considering its importance based upon:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows?

Tips on how to assess the indicator relative to type of flow:

Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages? Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low flow indicator. The difference between high and extreme flow indicators can sometimes be difficult to determine.

***Landscape context from Step 1 can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***Information in Chapter 2 of the OHWM field manual provides information on specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.**

ii. Did recent extreme events and/or land use affect this indicator?

1. Recent floods may have left many extreme flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.
2. Droughts may cause field evidence of OHWM to be obscured, because there has been an extended time since the last high flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.
3. Both man-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can all alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provides specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describes each indicator in detail and provides examples of areas where indicators are difficult to interpret.

d. Weigh body of evidence:

i. Combine weights: integrate the weighted line of evidence (relevance, strength, reliability) of each indicator.

ii. For each of the observed indicators, which are more heavily weighted? Where do high value indicators co-occur along the stream reach? Do they co-occur at a similar elevation along the banks relative to water surface (or channel bed if there is no water).

iii. On datasheet, select the indicators used to identify the OHWM. Information in Chapter 2 of the OHWM field manual provides descriptions of specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.

e. Take photographs of indicators and attach a log using either page 2 of datasheet or another method of logging photos.

i. Annotate photos with descriptions of indicators.

Step 4 **Is additional information needed? Are other resources needed to support the lines of evidence observed in the field?**

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling, weighting, and weighing evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were needed to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the datasheet.

Step 5 **Describe rationale for location of OHWM:**

a. Why do the combination of indicators represent the OHWM?

b. If there are multiple possibilities for the OHWM, explain why there are two (or more) possibilities. Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the datasheet under Step 5.

Appendix E Aquatic Resource Excel Sheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Whitewater River	CALIFORNIA	R4SB	RIVERINE	Linear	285.28	FOOT	NRPW	33.89122	116.54578	Whitewater River
Chino Creek	CALIFORNIA	R4SB	RIVERINE	Linear	499.34	FOOT	NRPW	33.87300	116.54577	Whitewater River

Appendix F Stream Duration Assessment Method Sheets

Streamflow Duration Assessment Methods

SDAM Version 3.0.0 Release Date: June 2025

https://www.epa.gov/streamflow-duration-assessment

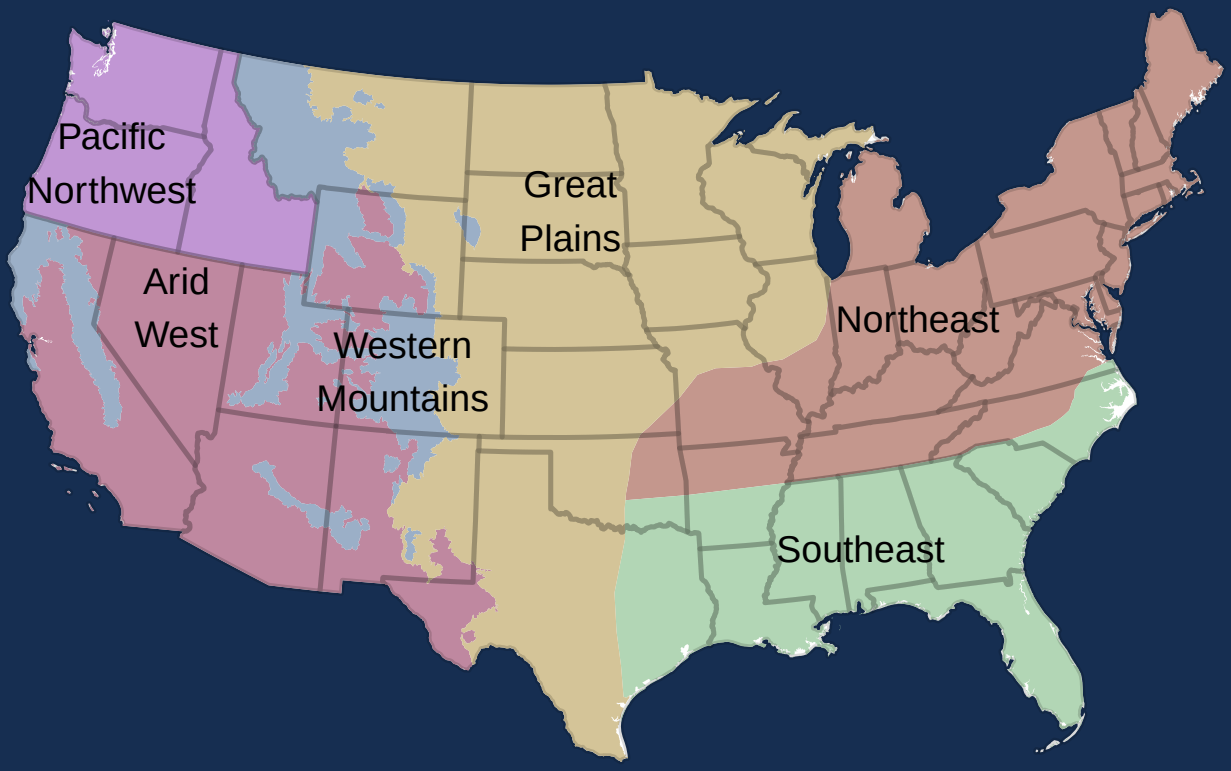
Visit date: 2025-06-20

Report generated date: 2025-06-20

Project name: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code: N INDIAN CANYON DRIVE - SDAM 1

Regional SDAM classification: EPHEMERAL



General site information

Project name or number: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code or identifier: N INDIAN CANYON DRIVE - SDAM 1

SDAM Region: Arid West

Adjacent SDAM Regions within 10 miles: Unknown

Assessor(s): A. Nakagawa

Waterway name: Whitewater River

Visit date: 2025-06-20

Current weather conditions: Clear/Sunny

Notes on current or recent weather conditions: Aerial imagery used for desktop SDAM was taken during Normal Conditions according to APT. Google Earth imagery dated 1/29/2025.

Location: Not provided

Surrounding land use within 100 m: Urban, industrial, or residential, Other

Notes on land use: Roadways, solar and wind farms, residential development

Description of reach boundaries: The SDAM was performed via desktop, therefore there were no constraints to reach length. The assessment reach begins approximately 510 meters south of where the Amtrak crosses beneath North Indian Canyon Drive, and ends approximately 80 meters upstream of where the Whitewater crosses over North Indian Canyon Drive

Assessment reach length (m): 200

Disturbed or difficult conditions: Stream modifications (e.g., channelization), Drought

Notes on disturbances or difficult site conditions: Note - assessment reach occurs downstream of a heavily managed and manipulated flood control system, and adjacent to a transportation corridor.

Observed hydrology

Percent of reach with surface flow: 0

Percent of reach with surface and sub-surface flows: 0

Number of isolated pools: 0

Notes on observed hydrology: Wash system generally lacking perennial flow or riffle-pool complex based on aerial imagery

Site photos

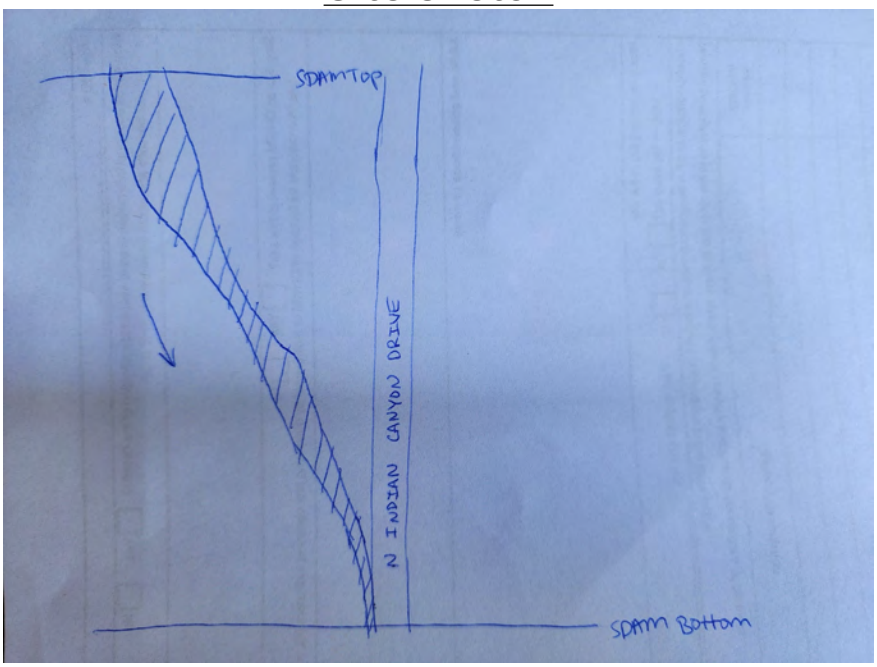
Top of reach looking downstream:

Middle of reach looking upstream:

Middle of reach looking downstream:

Bottom of reach looking upstream:

Site sketch



Indicators

Mean bankfull channel width (m): 15.4

Notes on mean bankfull channel width: Estimated widths via aerial image

Mean bankfull channel width photos and descriptions:

Perennial indicator taxa: No perennial indicator taxa detected

Aquatic macroinvertebrates in assessment area: Aquatic macroinvertebrates absent

Notes on aquatic macroinvertebrates:

Assumed

Macroinvertebrate photos and photo descriptions:

Slope (to the nearest half-percent): 0.5

Notes about slope:

Assumed

Slope photos and descriptions:

Number of hydrophytic plant species: 0

Vegetation in assessment area: vegetation absent

Notes on hydrophytic plants:

Assumed based on aerial imagery

Hydrophyte photos and photo descriptions:

Prevalence of upland rooted plants in streambed: 3 (Strong) Rooted upland plants are absent from the streambed/thalweg.

Notes about upland rooted plants:

Assumed based on aerial imagery

Upland rooted plants photos and descriptions:

Algal cover: Not Detected

Check here if algae exclusively appears to have been deposited from an upstream source, and no local growth is evident: Not checked

Notes about algal cover:

Assumed based on aerial imagery

Algal cover photos and descriptions:

Differences in vegetation: 0 (Poor) No compositional or density differences in vegetation are present between the banks and the adjacent uplands.

Notes about differences in vegetation:

Assumed based on aerial imagery

Vegetation differences photos and descriptions:

Riffle-pool sequence: 0 (Poor) No riffle-pool sequences observed.

Notes about riffle-pool sequence:

Assumed based on aerial imagery

Riffle-pool photos and descriptions:

Supplemental information

Additional notes about the assessment:

N/A

Supplemental information photos and descriptions:

Arid West Regional SDAM classification

EPHEMERAL

SDAM resources

End of Report

Streamflow Duration Assessment Methods

SDAM Version 3.0.0 Release Date: June 2025

https://www.epa.gov/streamflow-duration-assessment

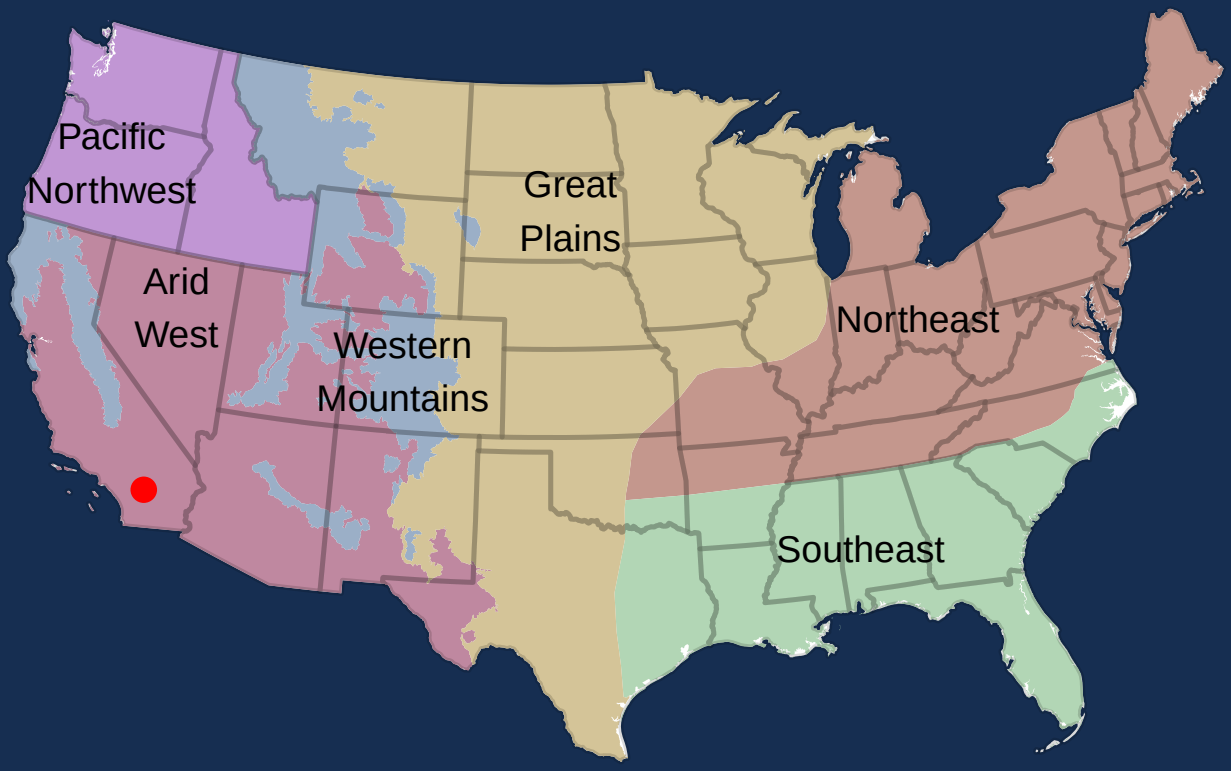
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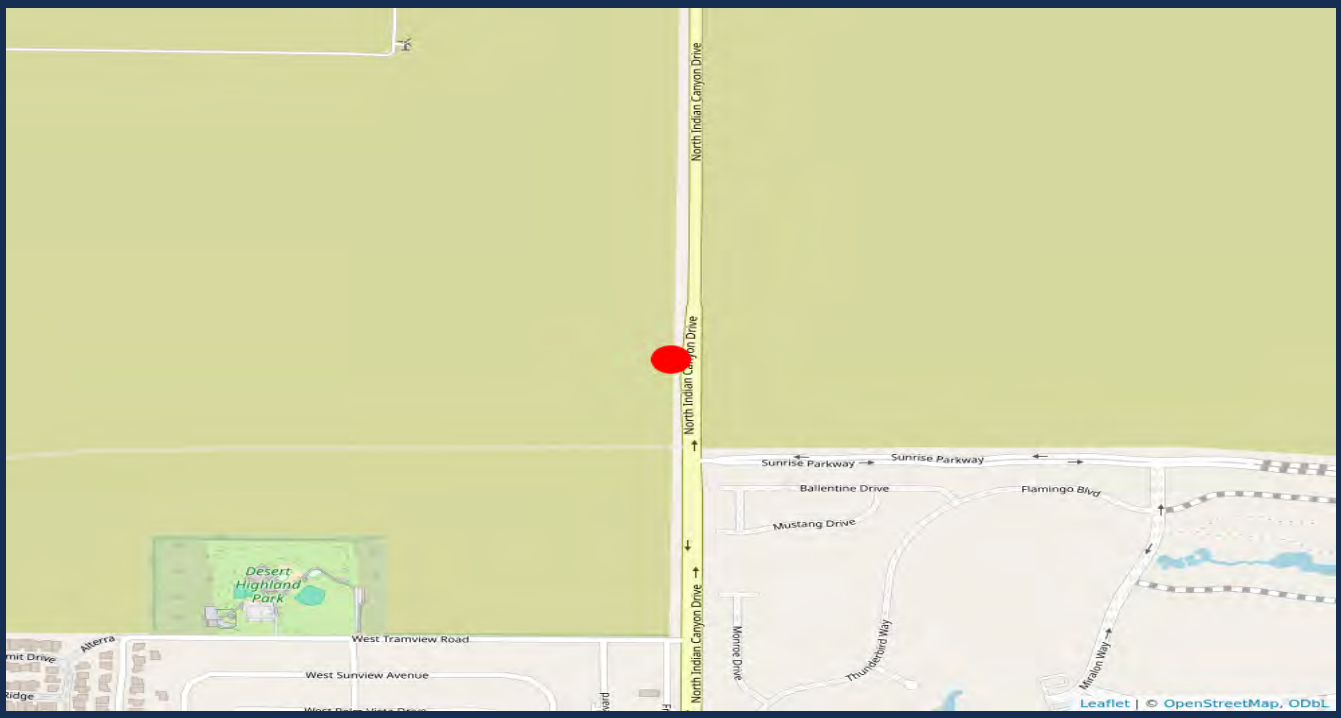
Report generated date: 2025-06-20

Project name: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code: N INDIAN CANYON DRIVE - SDAM 2

Regional SDAM classification: EPHEMERAL




North Indian Canyon Drive
North Indian Canyon Drive
Sunrise Parkway
Sunrise Parkway
Ballentine Drive
Flamingo Blvd
Mustang Drive
Desert Highland Park
West Tramview Road
West Sunview Avenue
Alterra
North Indian Canyon Drive
Monroe Drive
Thunderbird Way
Miralon Way
Leaflet | © OpenStreetMap, ODbL

General site information

Project name or number: WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT-PHASE ONE

Site code or identifier: N INDIAN CANYON DRIVE - SDAM 2

SDAM Region: Arid West

Adjacent SDAM Regions within 10 miles: None

Assessor(s): A. Nakagawa

Waterway name: Chino Creek

Visit date:

Current weather conditions: Clear/Sunny

Notes on current or recent weather conditions: Aerial imagery used for desktop SDAM was taken during Normal Conditions according to APT. Google Earth imagery dated 1/29/2025.

Location: 33.871992 N, -116.545846 E

Surrounding land use within 100 m: Urban, industrial, or residential, Other

Notes on land use: Roadways, solar and wind farms, residential development

Description of reach boundaries: The SDAM was performed via desktop, therefore there were no constraints to reach length. The assessment reach begins approximately 200 meters northwest of the intersection of North Indian Canyon Drive and Sunrise Parkway, and ends approximately 15 meters west of North Indian Canyon Drive.

Assessment reach length (m): 200

Disturbed or difficult conditions: Stream modifications (e.g., channelization), Drought

Notes on disturbances or difficult site conditions: Note - assessment reach occurs downstream of a heavily managed and manipulated flood control system, and adjacent to a transportation corridor.

Observed hydrology

Percent of reach with surface flow: 0

Percent of reach with surface and sub-surface flows: 0

Number of isolated pools: 0

Notes on observed hydrology: Wash system generally lacking perennial flow or riffle-pool complex based on aerial imagery.

Site photos

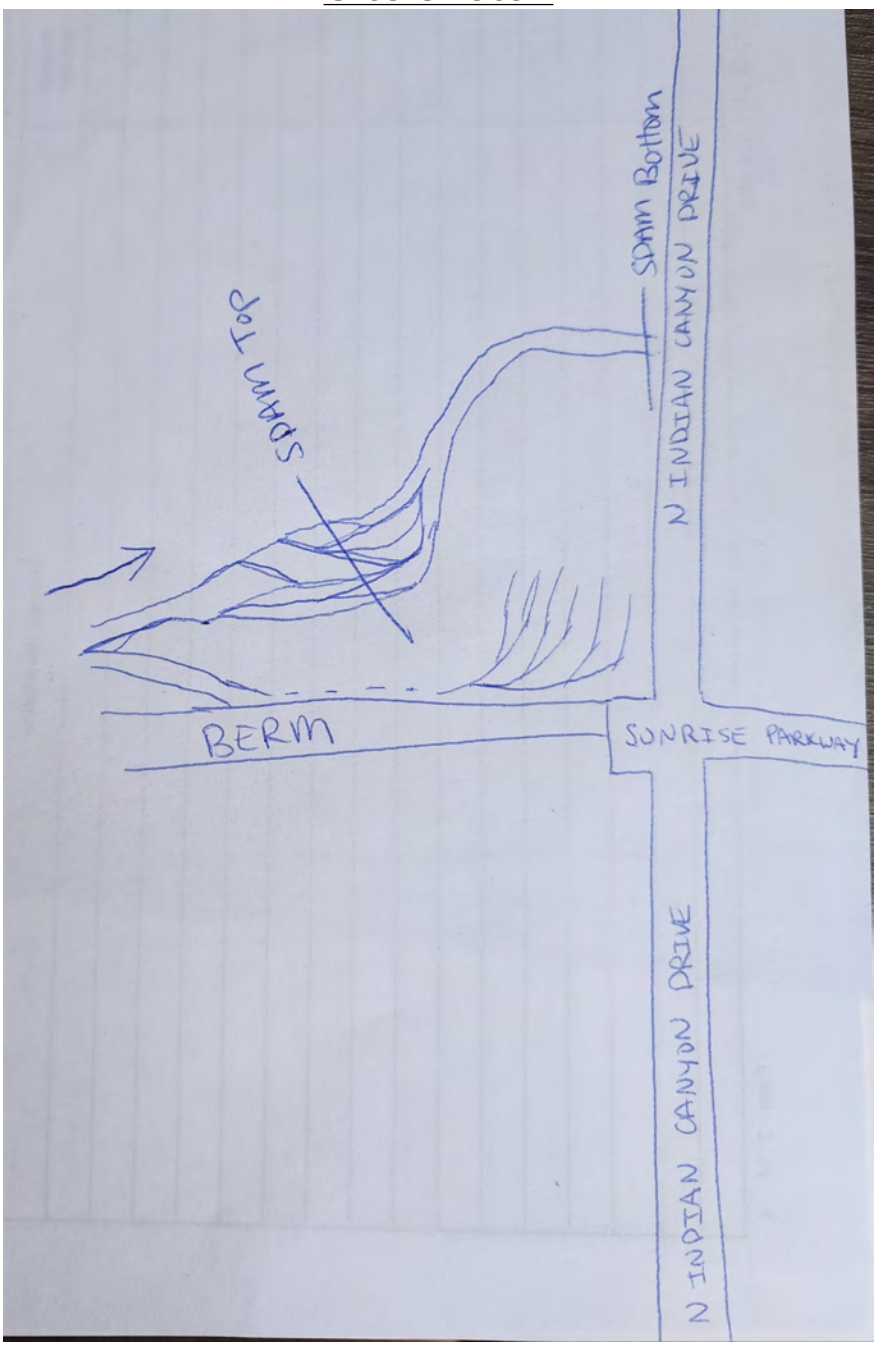
Top of reach looking downstream:

Middle of reach looking upstream:

Middle of reach looking downstream:

Bottom of reach looking upstream:

Site sketch


SDAM Bottom
SDAM Top
2 INDIAN CANYON DRIVE
BERM
SUNRISE PARKWAY
2 INDIAN CANYON DRIVE

Indicators

Mean bankfull channel width (m): 27.7

Notes on mean bankfull channel width: Estimated widths via aerial image

Mean bankfull channel width photos and descriptions:

Perennial indicator taxa: No perennial indicator taxa detected

Aquatic macroinvertebrates in assessment area: Aquatic macroinvertebrates absent

Notes on aquatic macroinvertebrates:

Assumed

Macroinvertebrate photos and photo descriptions:

Slope (to the nearest half-percent): 0.5

Notes about slope:

Assumed

Slope photos and descriptions:

Number of hydrophytic plant species: 0

Vegetation in assessment area: vegetation present

Notes on hydrophytic plants:

Assumed based on aerial imagery. Channel invert appears generally unvegetated.

Hydrophyte photos and photo descriptions:

Prevalence of upland rooted plants in streambed: 2.5

Notes about upland rooted plants:

Assumed based on aerial imagery

Upland rooted plants photos and descriptions:

Algal cover: Not Detected

Check here if algae exclusively appears to have been deposited from an upstream source, and no local growth is evident: Not checked

Notes about algal cover:

Assumed based on aerial imagery

Algal cover photos and descriptions:

Differences in vegetation: 0 (Poor) No compositional or density differences in vegetation are present between the banks and the adjacent uplands.

Notes about differences in vegetation:

Assumed based on aerial imagery

Vegetation differences photos and descriptions:

Riffle-pool sequence: 0 (Poor) No riffle-pool sequences observed.

Notes about riffle-pool sequence:

Assumed based on aerial imagery

Riffle-pool photos and descriptions:

Supplemental information

Additional notes about the assessment:

N/A

Supplemental information photos and descriptions:

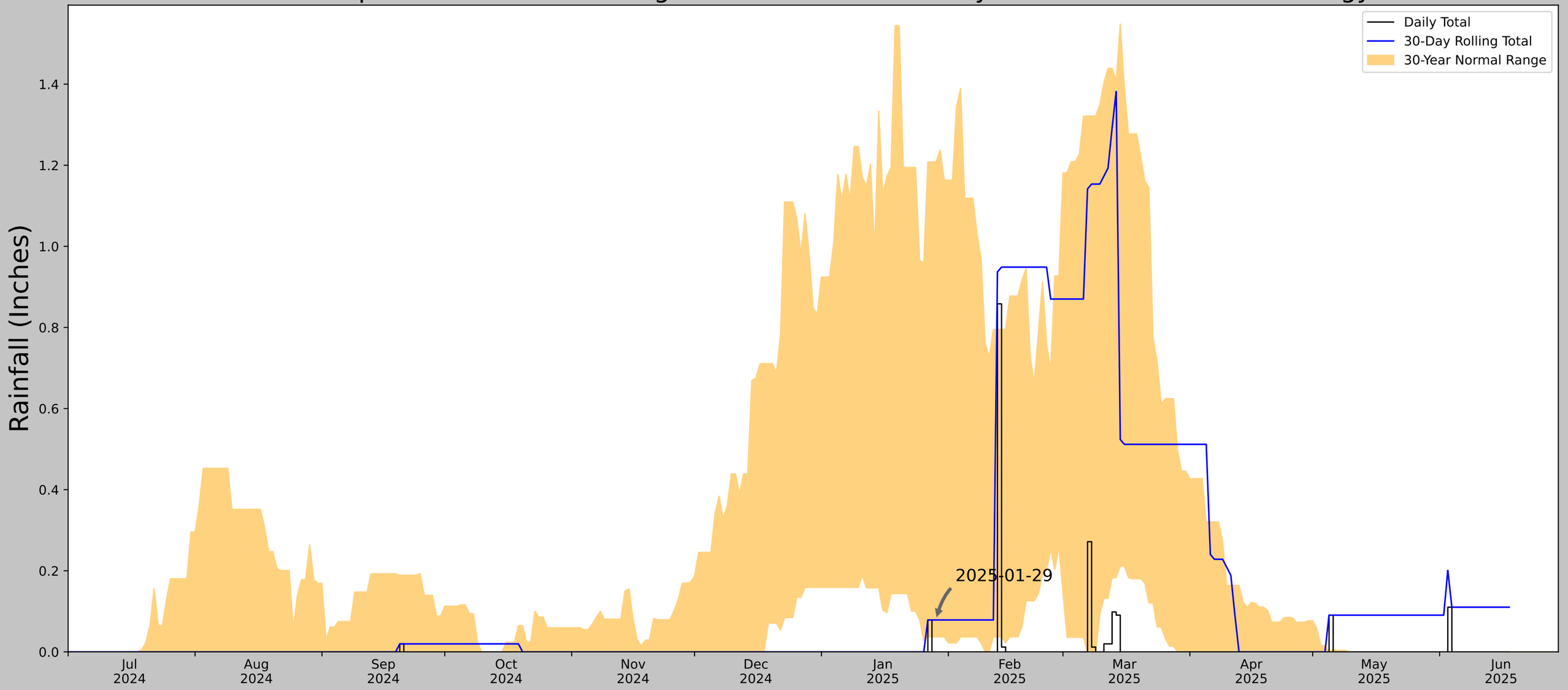
Arid West Regional SDAM classification

EPHEMERAL

SDAM resources

End of Report

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.889512, -116.545599
Observation Date	2025-01-29
Elevation (ft)	649.146
Drought Index (PDSI)	Severe drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-01-29	0.037008	1.208268	0.07874	Normal	2	3	6
2024-12-30	0.159055	0.846457	0.0	Dry	1	2	2
2024-11-30	0.0	0.171654	0.0	Normal	2	1	2
Result							Normal Conditions - 10

US Army Corps of Engineers

ERDC

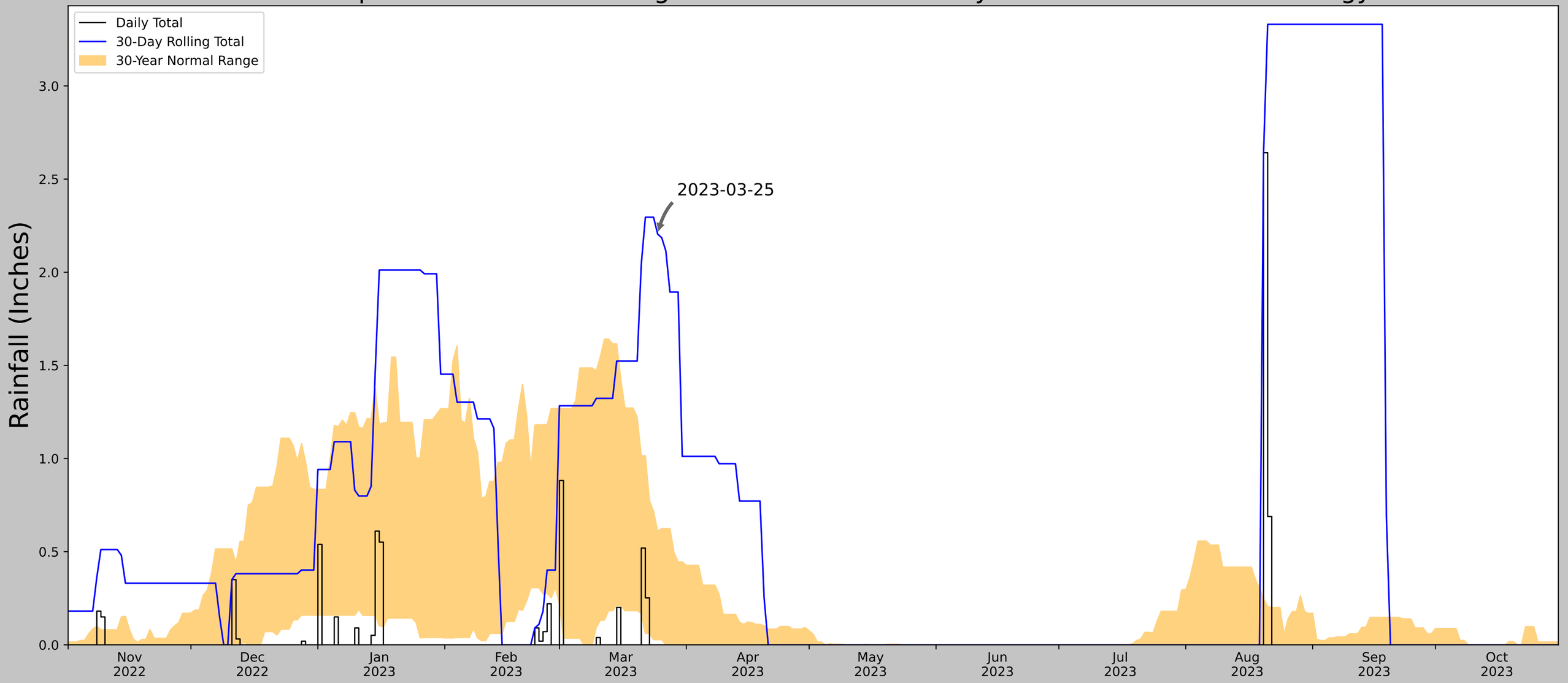
Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PALM SPRINGS	33.8275, -116.5097	424.869	4.754	224.277	3.206	10870	90
PALM SPRINGS ASOS	33.8222, -116.5044	409.121	0.476	15.748	0.222	474	0
THOUSAND PALMS 0.7 W	33.8212, -116.3978	253.937	6.438	170.932	3.998	1	0
DEEP CANYON LAB	33.6514, -116.3764	1200.131	14.377	775.262	17.616	8	0

Appendix G Antecedent Precipitation Tool Results

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.871304, -116.545661
Observation Date	2023-05-24
Elevation (ft)	623.972
Drought Index (PDSI)	Moderate wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-05-24	0.0	0.0	0.0	Normal	2	3	6
2023-04-24	0.0	0.098425	0.0	Normal	2	2	4
2023-03-25	0.027559	0.61063	2.204724	Wet	3	1	3
Result							Normal Conditions - 13

US Army Corps of Engineers

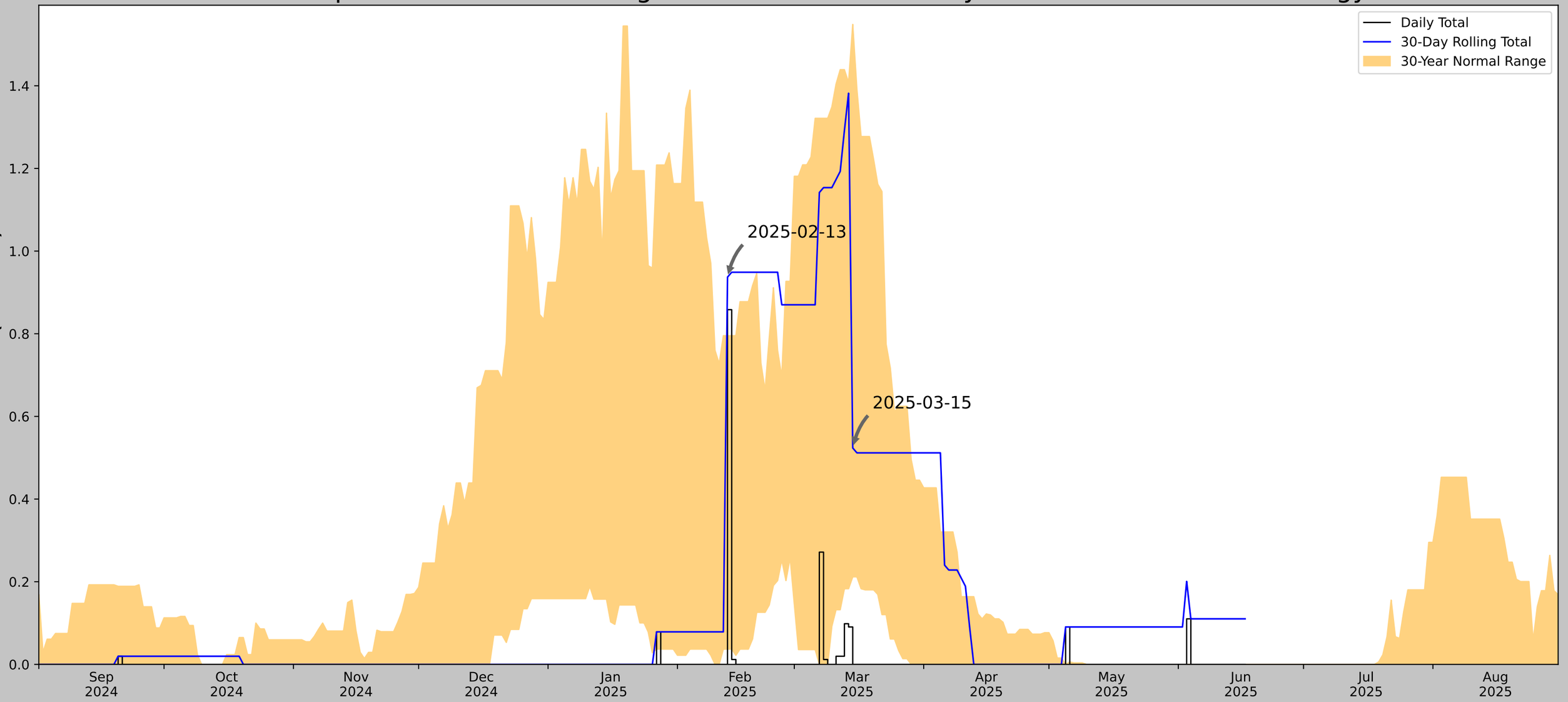
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PALM SPRINGS	33.8275, -116.5097	424.869	3.663	199.103	2.378	10840	90
PALM SPRINGS ASOS	33.8222, -116.5044	409.121	0.476	15.748	0.222	474	0
THOUSAND PALMS 0.7 W	33.8212, -116.3978	253.937	6.438	170.932	3.998	1	0
INDIO FIRE STN	33.7086, -116.2153	-20.997	18.799	445.866	16.841	30	0
DEEP CANYON LAB	33.6514, -116.3764	1200.131	14.377	775.262	17.616	8	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.871304, -116.545661
Observation Date	2025-04-14
Elevation (ft)	623.972
Drought Index (PDSI)	Extreme drought
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-04-14	0.0	0.122047	0.0	Normal	2	3	6
2025-03-15	0.211811	1.548425	0.523622	Normal	2	2	4
2025-02-13	0.037008	0.795276	0.937008	Wet	3	1	3
Result							Normal Conditions - 13

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PALM SPRINGS	33.8275, -116.5097	424.869	3.663	199.103	2.378	10870	90
PALM SPRINGS ASOS	33.8222, -116.5044	409.121	0.476	15.748	0.222	474	0
THOUSAND PALMS 0.7 W	33.8212, -116.3978	253.937	6.438	170.932	3.998	1	0
DEEP CANYON LAB	33.6514, -116.3764	1200.131	14.377	775.262	17.616	8	0

Appendix B5

Consistency Determination CVCC

COACHELLA VALLEY CONSERVATION COMMISSION

CVCC

Cathedral City • Coachella • Desert Hot Springs • Indian Wells • Indio • La Quinta • Palm Desert • Palm Springs
Rancho Mirage • County of Riverside • Coachella Valley Water District • Imperial Irrigation District
Mission Springs Water District

February 24, 2026

Jonathan Hoy
Director of Transportation
Coachella Valley Association of Governments
74-199 El Paseo Ave., Ste. 100
Palm Desert, CA 92260

RE: Joint Project Review CVCC 25-004 North Indian Canyon Drive Bridge

Dear Mr. Hoy:

The Coachella Valley Conservation Commission (CVCC) has completed its Joint Project Review (JPR) as required by section 6.6.1.1 of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSCHP) for the North Indian Canyon Drive bridge project currently being designed by the Coachella Valley Association of Governments (CVAG) in partnership with the City of Palm Springs (City).

The project is within the Whitewater Floodplain Conservation Area and proposes modifications to North Indian Canyon Drive, including a bridge over the primary Whitewater River channel and a multimodal path running parallel to the roadway. The Project is a Covered Activity as contemplated by section 7.2.3 of the CVMSHCP and its Take Authorization has already been allocated, provided the project is otherwise consistent with the Conservation Objectives and required measures identified in the CVMSCHP.

CVCC issued a draft consistency determination to the Permittee and Wildlife Agencies on January 16, 2026. The Wildlife Agencies provided comments on February 19, 2026. No additional comments were received.

The JPR has found the project as proposed conditionally consistent with the CVMSHCP pending 1) the opportunity for further review of the roadway designs; and 2) additional details for certain mitigation measures and land use adjacency guidelines as discussed in the final determination. If, during subsequent project review, it is identified that the project has failed to implement any of these conditions, or if the project design has changed substantially from that reviewed here, the consistency finding shall be rendered null and void.

CVCC requests notification upon initiation of construction for this project so that impacts authorized under the CVMSHCP may be attributed appropriately.

If you have any questions, please do not hesitate to contact me via email at psatin@cvag.org or by phone at 760.346.1127.

Sincerely,



Peter Satin
Conservation Program Manager

EC: Mark Lancaster, CVAG
Elizabeth Meyerhoff, MBI
Ryan Henry, MBI
Francis Matic, MBI
Jacob Skaggs, CDFW
Heather Brashear, CDFW
Lory Salazar-Velasquez, USFWS
Marybeth Woulfe, USFWS
Kathleen Brundige, CVCC

Attachments:
CVCC 25-004: North Indian Canyon Drive Bridge final consistency determination
Wildlife Agency comment letter FWS/CDFW-2025-0060256-HCP-TA-ERV

Coachella Valley Conservation Commission Joint Project Review

Submitted 24 February 2026

Project Summary

CVCC ID	***25-004***
Applicant	Coachella Valley Association of Governments
Permittee	Coachella Valley Association of Governments
APN(s)	669-070-001, 669-070-002, 669-070-007, 669-080-002, 669-100-008, 669-240-006, 669-330-015, 669-330-030, 669-330-046, 669-330-047, 669-740-022, 669-800-014, North Indian Canyon right-of-way
Total Acreage	35.10 acres
Conservation Area	Whitewater Floodplain
Conservation Area Disturbance Acreage	19.23 acres

Introduction

The Joint Project Review Process

CVCC is tasked with conducting the Joint Project Review (JPR) process as defined in section 6.6.1.1 of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) for any potential development taking place in a Conservation Area[1] that may impact Conservation Objectives. The JPR process allows CVCC to facilitate and monitor the implementation of the CVMSHCP and to assist Permittees in meeting the Conservation Goals and Objectives of the Plan. The intention of the resulting consistency analysis is to inform the Permittee whether a proposed development project is consistent with CVMSHCP requirements, and in no way limits their land use authority.

Upon receipt of a complete project application from a Permittee, CVCC will conduct an analysis of how the project may impact Conservation Area Conservation Objectives and required measures as described in section 4.3, Rough Step parameters as described in section 6.5, Covered Species Conservation Goals and Objectives as described in section 9, and natural community Conservation Goals and Objectives as described in section 10. CVCC will prepare their findings for comment and submit them to the Permittee, the project applicant, and the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) (collectively, Wildlife Agencies). Any comments must be submitted to CVCC within 30 days, after which CVCC will finalize its recommendation regarding project consistency and submit it to the Permittee. Additional consultation between CVCC, the project applicant, and the Permittee may be required if inconsistencies with Plan requirements are identified.

[1] Capitalized phrases not otherwise defined in this report share the same meaning as found in the CVMSHCP Definitions section available at https://cvmshcp.org/Plan-Documents/05-CVAG-MSHCP-Plan-Definitions.pdf.

Project Description

The Coachella Valley Association of Governments (CVAG) proposes an array of roadway modifications (Project) along a 1.7 mile stretch of North Indian Canyon Drive in the City of Palm Springs (City), beginning at roadway station 48+75 coinciding with the intersection at Sunrise Parkway to the south and ending at station 136+25 just north of the intersection with Palm Springs Station Road, approximately 1 mile south of Interstate 10 (Figure 1). Primary components of the Project include a bridge spanning the existing Whitewater River channel and a multi-use trail along the west side of the North Indian Canyon Drive, with additional minor modifications to Palms Springs Station Road and Granite Access Road. No additional traffic through lanes are proposed.

Roadway modifications from station 48+75 to station 94+00 will consist of the installation within the existing right-of-way of a bicycle and pedestrian path along the western boundary and the implementation of a 30-foot wide clear recovery zone along the eastern boundary. Between these stations, a 54-inch tall biker railing and Caltrans-standard Midwest guardrail system will be installed between the multimodal pathway and the vehicular travel lane. The biker rail will be consistent with Caltrans standard bridge rail designs, which specify a cable barrier, with the lowest cable positioned 11 inches above the roadway surface, and subsequent cables spaced horizontally every 10-11 inches there above. The roadway will be gradually elevated beginning at station 94+00, where a retaining wall be installed on both sides of the roadway through station 105+66. The retaining wall will extend between 33 feet and 40 feet below the roadway surface (or existing grade under the bridge section) to double as scour protection. Along the roadway surface as it rises above the ground surface, an additional biker railing will be installed along the exterior boundary of the multimodal path.

The bridge structure will begin at station 105+66 and continue through station 118+50. The bridge will span 13 piers, inclusive of an abutment on both the southern and northern ends, with each pier spaced 107 feet apart. The southern abutment will provide 12 feet of clearance between the existing grade and bridge soffit, which will gradually increase to 15 feet of clearance at the northern abutment. The joint retaining wall/scour protection will resume at the northern end of the bridge structure and run through station 132+86.

The intersection with Palm Springs Station Road and Granite Access Road begins approximately at station 133, where the multimodal path will cross the intersection and continue along the eastern edge of Palm Springs Station Road until arriving at the existing train station. A joint retaining wall/scour protection structure will continue along the western edge of Palm Springs Station Road as the roadway gradually descends to existing grade around station 14+50.

At its northern terminus, the Project will tie into the ongoing Union-Pacific Railroad bridge reconstruction project, identified by Federal Project Numbers BRLO 5282(017) and STPLM 5282(016). That project has been reviewed elsewhere[2] and is not part of the current Project. Its components are excluded from this consistency analysis.

A staging area will be located at the southeast intersection of North Indian Canyon Drive and Garnet Avenue, approximately 0.4 miles north of the Project. Construction activities will be conducted from within the existing right-of-way, and heavy machinery is not anticipated to operate

[2] See FWS-ERIV-08B0002-08F0010-R001 and 2024-0110057-S7-F-004-ERV

beyond the roadway. Work will take place primarily during the day, with limited nighttime work. Construction phasing will not require the use of temporary bypass lanes.

Conservation Context

Portions of the Project are proposed to take place in the Whitewater Floodplain Conservation Area (WWFP) (Figure 2), which encompasses portions of the Whitewater River channel south of Interstate 10 (I-10) where it joins the San Gorgonio River channel and continues eastward into the urbanized area of the City. The former Whitewater River Floodplain Preserve, as established by the Coachella Valley Fringe-toed Lizard Habitat Conservation Plan, has converted to the Coachella Valley Fringe-toed Lizard Area of Critical Environmental Concern, owned and operated by the Coachella Valley Water District (CVWD). The Bureau of Land Management (BLM) owns land scattered throughout the WWFP.

The WWFP spans three hydrologic units[3]; the majority falls within the Headwaters Whitewater River watershed, but the westernmost and easternmost extents overlap the San Gorgonio and Upper Whitewater River watersheds, respectively. In addition to containing reaches of the San Gorgonio and Whitewater Rivers, the WWFP includes sections of Garnet Wash south of I-10, as well as Chino Wash. The Whitewater River Groundwater Replenishment Facility, owned by CVWD, bisects the river channel, but is not included within the WWFP boundary.

Modeled habitat within the WWFP includes Core Habitat for Coachella Valley milkvetch, Coachella Valley sand-treader cricket, Coachella Valley fringe-toed lizard, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. The WWFP also includes Other Conserved Habitat for triple-ribbed milkvetch, desert tortoise, flat-tailed horned lizard, and Le Conte's thrasher. While habitat for the Coachella Valley Jerusalem cricket has been modeled in the area, limited surveys have not yet identified any individuals. Burrowing owls have been identified in the area. Natural communities within the WWFP include active desert sand fields, ephemeral desert sand fields, stabilized and partially stabilized desert sand fields, stabilized shielded desert sand fields, Sonoran creosote bush scrub, and Sonoran mixed woody and succulent scrub.

The Whitewater River channel provides a major fluvial sand transport corridor, although the quantity of sediment moving downstream is somewhat impeded by the groundwater recharge basins, which restrict flows to a narrower depositional area. The WWFP provides extensive wildlife connectivity through the river channel itself, as well as where Mission Creek and Morongo Wash cross under I-10.

Conservation Objectives for the WWFP include conserving the above-mentioned Covered Species and natural communities, and has specific required measures for certain road widening projects to ensure maintenance of Biological Corridors and fluvial sand transport.

Conservation Assessment

Project Impacts

Adverse impacts under the CVMSHCP are generally quantified as acres of modeled habitat disturbed by development, and for which Take Authorization is required. Take is allocated against any ground disturbance to previously undisturbed habitat, discounting any disturbance predating

[3] Watersheds identified at the HUC10 classification tier.

the CVMSHCP's baseline year of 1996, disturbance occurring on land owned by the federal government, or disturbance subsequently permitted through the CVMSHCP.

Existing disturbance within the Project vicinity includes North Indian Canyon Drive, originally constructed as a two-lane arterial prior to 1996 and then expanded to four lanes in 2010[4], as well as Palm Springs Station Road. Electrical infrastructure built in 1966 and operated by Southern California Edison runs along the east boundary of the Project, and has been twice modified through Participating Special Entity Certificates of Inclusion[5]. Beyond the Project footprint, a number of wind energy conversion systems either predate the CVMSHCP or have received Take Authorization through the CVMSHCP[6]. Portions of the Project's western boundary at its northern and southern reaches are located on BLM land, which agency is not a permittee to the CVMSHCP and whose environmental review is distinct from the CVMSHCP regulatory framework. Accounting for existing disturbance, disturbance on BLM lands, and previous disturbance permitted through the CVMSHCP, the Project will result in approximately 9.57 acres of novel disturbance.

Modifications to North Indian Canyon, including construction of a bridge over the Whitewater River, constitute a Covered Activity under the CVMSHCP, meaning that Take Authorization has already been allocated to the Project provided it is built out as contemplated by, and otherwise consistent with, the CVMSHCP[7]. As such, the novel disturbance incurred by the Project will not be counted against the City of Palm Springs' authorized disturbance for the WWFP and is being mitigated through CVAG's on-going contribution of Measure A funds. The Project's disturbance will, however, accrue to the overall Take Authorization identified in the CVMSHCP permits.

The Project will impact modeled Core Habitat for Coachella Valley fringe-toed lizard, Coachella Valley giant sand-treader cricket, Coachella Valley milkvetch, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse, as well as Other Conserved Habitat for Coachella Valley Jerusalem cricket, flat-tailed horned lizard, and LeConte's thrasher. Natural communities affected include ephemeral desert sand fields and stabilized shielded desert sand fields. The Project will also impact modeled sand transport corridors. With the exception of Other Conserved Habitat for both the Coachella Valley Jerusalem cricket and flat-tailed horned lizard and the stabilized shielded desert sand fields natural community, all of the above listed elements are Conservation Objectives within the City's portion of the WWFP.

Sand Transport Capacity and Wildlife Connectivity

Specific Conservation Objectives for the WWFP include the maintenance of aeolian and fluvial sand transport capacity within the Whitewater River channel and the maintenance of wildlife connectivity across or under North Indian Canyon Drive and Gene Autry Trail. Required measures for the Conservation Area include the provision that any widening of the roadway be designed so as not to impede wind-blown sand transport, and further, that any sand that accumulates on the upwind side of the roadway be deposited on the downwind side. Similarly, any roadway designs need to include wildlife undercrossings sufficient to accommodate use by Coachella Valley fringe-

[4] See CVCC 09-003.
[5] See CVCC 12-001 and 24-002.
[6] See CVCC 10-002 and CVCC 18-005.
[7] See section 7.2.3 and associated Table 7-3. The Project is described under "Indian Avenue" and is concurrent with the segment described by "Old City Limit to RR Crossing (including bridge over Whitewater River)".

toed lizard, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse. These undercrossings are to be designed in consultation with the Wildlife Agencies.

To demonstrate sand transport capacity, the Project proponent has conducted an aeolian sand transport study to identify the erosional and depositional effects of the proposed Project. Analysis components included simplified roadway geometry derived from specific Project designs, sediment characteristics based on field sampling, wind flow characteristics based on historic data from the nearest weather station, and local topography. Study results identify strong seasonal winds originating from the northwest and blowing most strongly during the months of May, and, to a lesser extent, September. Sand movement across the road is most pronounced where the roadway intersects the primary Whitewater River channel and a lesser tributary to the south.

Erosional and depositional effects were modeled within six zones along the Project. The two southernmost zones, where the roadway remains at-grade, will result in some deposition along the multimodal trail where wind currents intersect the biker railing and Midwest guardrail system, and additional deposition along the roadway, similar to existing conditions. It should be noted that the biker railing was modeled as a mostly impermeable surface, so actual sand deposition resulting from its final cable railing design may be less than suggested by the study. Deposition increases as the road is elevated above grade and wind currents are impeded by either the retaining wall or the barriers constructed along the roadway. Sand travels freely underneath the bridge structure, with only minor deposits occurring leeward of the abutments. The final two zones occur on portions of the Project within BLM lands and where windblown sediment is being deposited within the solar field and mining operation outside of the WWFP. Nonetheless, sand capture within these zones is anticipated to be minimal.

In most cases, given the direction of predominant winds, sand deposited along constructed barriers is expected to continue moving southward until it is either able to pass beneath the bridge structure or across the roadway at grade. During extreme depositional events (i.e., those that result in road closure), the City will continue to remove sand from the roadway surface and deposit it on the eastern edge of the corridor.

As part of the requirement to maintain aeolian sand transport, any road widening must also support wildlife connectivity beneath the roadway. The undercrossing beneath the bridge will consist of 12 “bays” separated by a series of bents; each bent consists of two in-line piers. Excluding the location of individual piers, the opening beneath the bridge deck measures approximately 17,334 square feet, and spans 76 feet from the western edge of the deck to the eastern edge, resulting in an openness ratio of 228, more than sufficient to accommodate the targeted Covered Species, as well as mesofauna that may traverse the area. No channel armoring is proposed beneath the bridge structure, and while no atrium is proposed as part of the bridge deck, the opening on either side is significant enough to allow for the periodic establishment of microhabitat to facilitate small mammal use.

Retaining walls would create a barrier to connectivity where they are constructed to support roadway grade separation. However, these barriers would only extend for relatively short distances (approximately 1,100 feet on the southerly approach and 1,400 feet on the northerly approach) and would serve to direct wildlife either to the undercrossing beneath the bridge structure or to an at-grade crossing. At grade, the proposed biker railing and Midwest guardrail system provide sufficient clearance between the ground and the barrier to allow for passage beneath.

The Project calls for a 30-foot crash recovery zone along the eastern boundary of the roadway beyond the existing right-of-way through station 94+00. This zone is concurrent with existing electrical infrastructure and is presently vegetated. As of review, Project designs suggest that electrical infrastructure may be undergrounded as part of the buildout, but this work has not yet been reviewed or permitted by Southern California Edison and may be removed from the Project scope. CVCC recommends this space remain vegetated to the maximum extent Feasible so as to provide readily available cover to wildlife that may be crossing the roadway throughout this section.

Project design plans are currently considered 30% complete and the components reviewed here may change as the Project progresses. To ensure the Project continues to meet aeolian sand transport and linkage requirements, CVCC recommends the Project resubmit plans to CVCC and the Wildlife Agencies for review at the 60% and 90% design stages (or their functional equivalent). These reviews will not be subject to the JPR process unless substantial adverse deviations to the designs analyzed here are identified.

Rough Step Analysis

Rough Step and its calculation is a metric developed by the CVMSHCP to ensure that development within any Conservation Area does not significantly outpace conservation in that Conservation Area. Maintaining Rough Step effectively limits the acres of Take Authorization that may be allocated at any given time to an amount roughly proportional to the acres of habitat that have been conserved up to that time. If, for example, 50% of the required acres of a particular Conservation Objective have been conserved, then up to 50% of the acres of Take authorized for that Conservation Objective may be allocated to development. A positive Rough Step calculation indicates surplus acres of Take Authorization for a particular Conservation Objective, while a negative Rough Step calculation signifies that the acres of Take Authorization needed for that Conservation Objective exceed the acres available based on habitat conservation to date. In such an instance, a project can either reduce its disturbance footprint and thus the amount of Take Authorization required, or it can conserve sufficient habitat to balance the Rough Step calculation.

Since the Project is a Covered Activity, the required acres of Take Authorization have already been allocated, and buildout will not have any impact on the Rough Step equation. Nonetheless, Rough Step results are provided here as an indicator of the current conservation progress for the WWFP. Results are presented for the whole Conservation Area (Table 1) and for the portion within the City (Table 2). As indicated by the tables, habitat conservation within the greater WWFP and within the City's jurisdiction therein currently exceeds the proportional amount of permitted development that has taken place to date.

Avoidance, Minimization, and Mitigation Measures

The CVMSHCP requires that development proponents implement the appropriate avoidance, minimization, and mitigation measures for any Covered Species if the proposed development will result in take of that species' modeled habitat. Such measures are also required for burrowing owl, for which habitat models under the CVMSHCP do not exist. Avoidance, minimization, and mitigation measures may also exist for select Essential Ecological Processes and Biological Corridors. The Project proponent has submitted a Natural Environment Study (NES) drafted pursuant to Caltrans environmental review that identifies mitigation measures; where those mitigation measures align with the avoidance, minimization, and mitigation measures required by the CVMSHCP (Appendix A), they are called out below.

Biological Corridors: As discussed above, the Project has been designed to maintain connectivity on either side of the roadway. The proposed bridge structure is more than sufficiently sized to accommodate use by Covered Species, and the protective barriers along the roadway at grade provide sufficient clearance to allow for small animals to pass beneath. Larger animals will be directed, either by the barriers themselves or the retaining walls on either approach, to the opening beneath the bridge structure. CVCC reiterates its recommendation to limit vegetation removal along the roadway to the maximum extent Feasible.

Burrowing Owl: The NES identifies BIO-12, requiring pre-construction surveys to determine whether any burrowing owls are currently inhabiting the site. Occupied burrows will be flagged and buffered, while unoccupied burrows will be made inaccessible. CVCC recommends utilizing CDFW's Staff Report on Burrowing Owl Mitigation[8] to identify best practices in avoiding impacts to individuals, nests, and eggs.

Fluvial Sand Transport: Maintenance of fluvial sand transport is generally achieved by demonstrating that natural flows are conveyed through a site in their pre-disturbance direction of flow, that waters are not artificially retained on site, and that flow concentration and velocity are minimized to reduce downstream scour and erosion. The Project proponent has submitted hydrologic studies that indicate that, during 100-year storm events, flows north of and through the primary Whitewater River channel will be directed underneath the bridge structure, with the constrained channel increasing the water surface elevation by approximately two feet. Flows south of the bridge structure will continue to flow over the roadway surface, exhibiting an approximately four-foot increase over the current surface water elevation where flows are redirected by the retaining wall before equalizing to existing conditions at grade. After passing under the bridge structure or over the roadway, all flows continue in their existing direction of flow. While the retaining walls will capture some flows, any pooling would be temporary, and flows would continue to move through the Project site in accordance with topography. Downstream of the bridge structure, flow velocities are largely in keeping with existing conditions. The channel surface elevation is expected to remain stable over time, although temporary scour around the bridge abutments and piers will occur during flood events. These temporary voids will fill be refilled with sediment as stormflows move through the system. BIO-3 includes non-specific language requiring activities within the sand transport corridor maintain fluvial sand transport capacity. CVCC recommends this mitigation measure identify specific actions to be taken based on the projected work activities, including those actions undertaken as operations and maintenance activities over the life of the facility.

LeConte's thrasher: The NES has identified BIO-13, requiring pre-construction surveys for LeConte's thrasher during nesting season, and subsequent flagging and buffering as necessary.

Palm Springs pocket mouse: No measures are required for Palm Spring pocket mouse in the WWFP.

While not required as an avoidance, minimization, and mitigation measure under the CVMSHCP, seed collection for Coachella Valley milkvetch from any extant individuals will take place ahead of construction and stored for later restoration efforts as part of BIO-8. Precautions will also be taken to avoid impacts to Coachella Valley fringe-toed lizard by avoiding, as feasible, sand removal activities during the species' winter dormancy period as part of BIO-11.

[8] Available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline=true

Land Use Adjacency Guidelines

The CVMSHCP has established land use adjacency guidelines to limit edge effects and other indirect effects of development within or adjacent to a Conservation Area. Where applicable, these land use adjacency guidelines shall be implemented into development workplans. Where the NES has identified mitigation measures consistent with the guidelines as specified by the CVMSHCP (Appendix B), they are called out below.

Drainage: The current roadway design drains to the shoulder on either side. The proposed bridge structure will include deck drains that channel water down the nearest pier to discharge at grade. The retaining walls will channel water downslope until it is also discharged at grade. Neither of these designs will result in an adverse impact to water quantity or quality compared to existing conditions. The guideline is included in the NES as BIO-4, although CVCC recommends that specific actions be identified to ensure that any runoff discharged during construction does not adversely impact the surrounding Conservation Area.

Toxics: The use of chemical fertilizers and other bioproducts is not anticipated as part of the Project. BIO-4 in the NES requires the prevention of any releases of petroleum products and other harmful chemicals to the surrounding WWFP. BIO-5 specifies the implementation of best management practices to avoid the release of any toxic chemicals, although these practices are not specified. BIO-6 indicates that no vehicle fueling will take place with the WWFP.

Lighting: The current roadway does not have any streetlighting, and none is proposed as part of the Project. During construction, any night lighting will be downcast and shielded pursuant to BIO-15. For any lighting that is utilized, CVCC recommends a lighting temperature of 3,000 Kelvin or less and fixtures with motion detection and automatic shutoff functionality, as appropriate. Additional best practice recommendations from the Wildlife Agencies include an illuminance threshold not to exceed 15 lux (or 5 lux above baseline) as measured from 50 feet beyond the Project boundary.

Noise: The vehicular capacity of the roadway remains unchanged from current conditions, so the Project is not anticipated to generate any more noise than that generated by current conditions. Construction noise is not anticipated to exceed 75 dBA hourly.

Invasives: The Project does not include any landscaping. BIO-2 requires all equipment be cleaned prior to use in the WWFP to minimize the potential introduction of invasive species.

Barriers: Barriers will be constructed within the roadway to separate the multimodal path from the vehicular travel lanes, thus limiting, in part, the ability for trespass into the WWFP. As described above, these barriers have been designed to accommodate sand transport and wildlife movement.

Grading/Land Development: The Project has been designed to minimize to the extent possible the need to construct any manufactured slopes or extend the Project footprint beyond the existing right-of-way required by the roadway.

Comments on Draft Findings

Draft findings were provided to the Permittee and the Wildlife Agencies for a 30 day comment on January 16, 2026. The Permittee did not provide comments. The Wildlife Agencies provided a

comment letter on February 19, 2026[9]. Wildlife Agency comments concurred with CVCC's recommendation for more specificity to the Project's avoidance, minimization, and mitigation measures and land use adjacency guidelines, and further emphasized discussion of measures to be taken during the operations and maintenance phase of the Project. In response to these comments, minor modifications have been made to these findings. The Wildlife Agency comment letter is included as part of the final JPR submission to the Permittee under separate cover.

Conclusions

CVCC finds the Project conditionally consistent with the CVMSHCP, provided CVCC and the Wildlife Agencies have additional opportunities to review roadway design ahead of final Project approval. CVCC recommends these reviews take place at 60% and 90% design (or their functional equivalent) to ensure bridge and barrier design continue to support aeolian sand transport and wildlife connectivity beneath the proposed bridge and across the roadway. Based on this consistency review, CVCC has not identified any adverse impacts to sand transport capacity or biological connectivity.

As a Covered Activity, the Project has no impact on Rough Step proportionality within the WWFP. In addition to the above condition, final consistency also requires the implementation of the avoidance, minimization, and mitigation measures and land use adjacency guidelines discussed herein. CVCC recommends additional specification to mitigation measures BIO-3, BIO-4, BIO-5, and BIO-15 to better demonstrate consistency with the relevant Conservation Objectives. These measures may be reviewed during subsequent design submissions.

Take Authorization for this Covered Activity is dependent upon the Project's continued consistency with the CVMSHCP during the remaining planning and buildout, which can be met through adherence to the findings in this consistency determination. Deviations from the Project design reviewed here or failure to incorporate the required avoidance, minimization and mitigation measures and land use adjacency guidelines will render these findings null and void.

[9] See FWS/CDFW-2025-0060256-HCP-TA-ERV

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Tables and Figures

Table 1: Rough Step for the Whitewater Floodplain Conservation Area. Calculated values are rounded to the nearest hundredth.

Conservation Objective	Total Acres in Conservation Area	Existing Conservation Acres	Authorized Disturbance Acres	Acres to be Conserved	Acres Disturbed to Date	Acres Conserved to Date	Rough Step
Coachella Valley milkvetch - Core Habitat	5,635	2,535	310	2,790	66.36	879.52	52.59
Coachella Valley giant sand-treader cricket - Core Habitat	5,617	2,532	308	2,777	66.36	879.52	52.23
Coachella Valley fringe-toed lizard - Core Habitat	5,617	2,532	308	2,777	66.36	879.52	52.23
LeConte's thrasher - Other Conserved Habitat	7,308	2,893	441	3,974	103.57	1,196.45	60.02
Coachella Valley round-tailed ground squirrel - Core Habitat	6,115	2,655	346	3,114	74.11	917.30	52.22
Palm Springs pocket mouse - Core Habitat	6,981	2,914	407	3,660	106.80	1,180.09	52.00
Active desert sand fields	485	1	49	435	0.00	349.12	40.29
Ephemeral desert sand fields	2,959	1,584	138	1,237	34.42	523.20	31.91
Stabilized desert sand fields	582	139	45	398	0.00	6.26	5.14
Sand transport	7,404	2,931	447	4,026	107.12	1,196.45	57.13
Linkages	1,912	465	145	1,302	38.24	311.33	7.46

Table 2: Rough Step for Palm Springs within the Whitewater Floodplain Conservation Area. Calculated values are rounded to the nearest hundredth.

Conservation Objective	Total Acres in Conservation Area	Existing Conservation Acres	Authorized Disturbance Acres	Acres to be Conserved	Acres Disturbed to Date	Acres Conserved to Date	Rough Step
Coachella Valley milkvetch - Core Habitat	5,432	2,464	297	2,671	66.36	873.27	50.73
Coachella Valley giant sand-treader cricket - Core Habitat	5,418	2,464	295	2,659	66.36	873.27	50.33
Coachella Valley fringe-toed lizard - Core Habitat	5,418	2,464	295	2,659	66.36	873.27	50.33
LeConte's thrasher - Other Conserved Habitat	6,495	2,681	381	3,433	73.70	906.19	54.91
Coachella Valley round-tailed ground squirrel - Core Habitat	5,825	2,542	328	2,955	74.11	874.50	46.05
Palm Springs pocket mouse - Core Habitat	6,173	2,704	347	3,122	76.98	892.09	46.96
Active desert sand fields	436	0	44	392	0.00	349.12	39.67
Ephemeral desert sand fields	2,873	1,556	132	1,185	34.42	523.20	31.23
Stabilized desert sand fields	577	139	44	394	0.00	0.00	4.40
Sand transport	6,590	2,719	387	3,484	77.25	906.19	52.04
Linkages	1,183	284	90	809	8.37	32.92	3.93

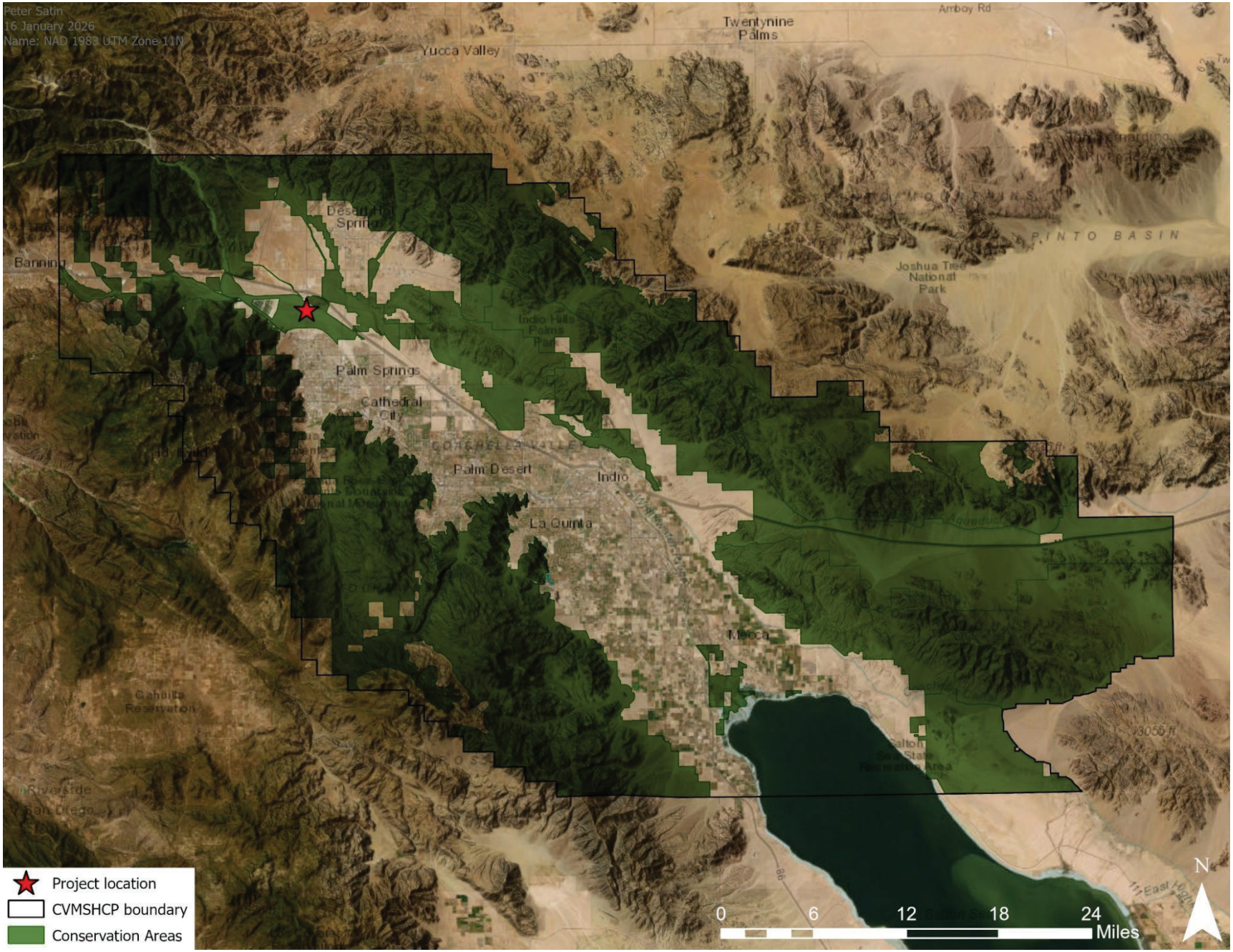


Figure 1: Project location within the Coachella Valley Multiple Species Habitat Conservation Plan area.

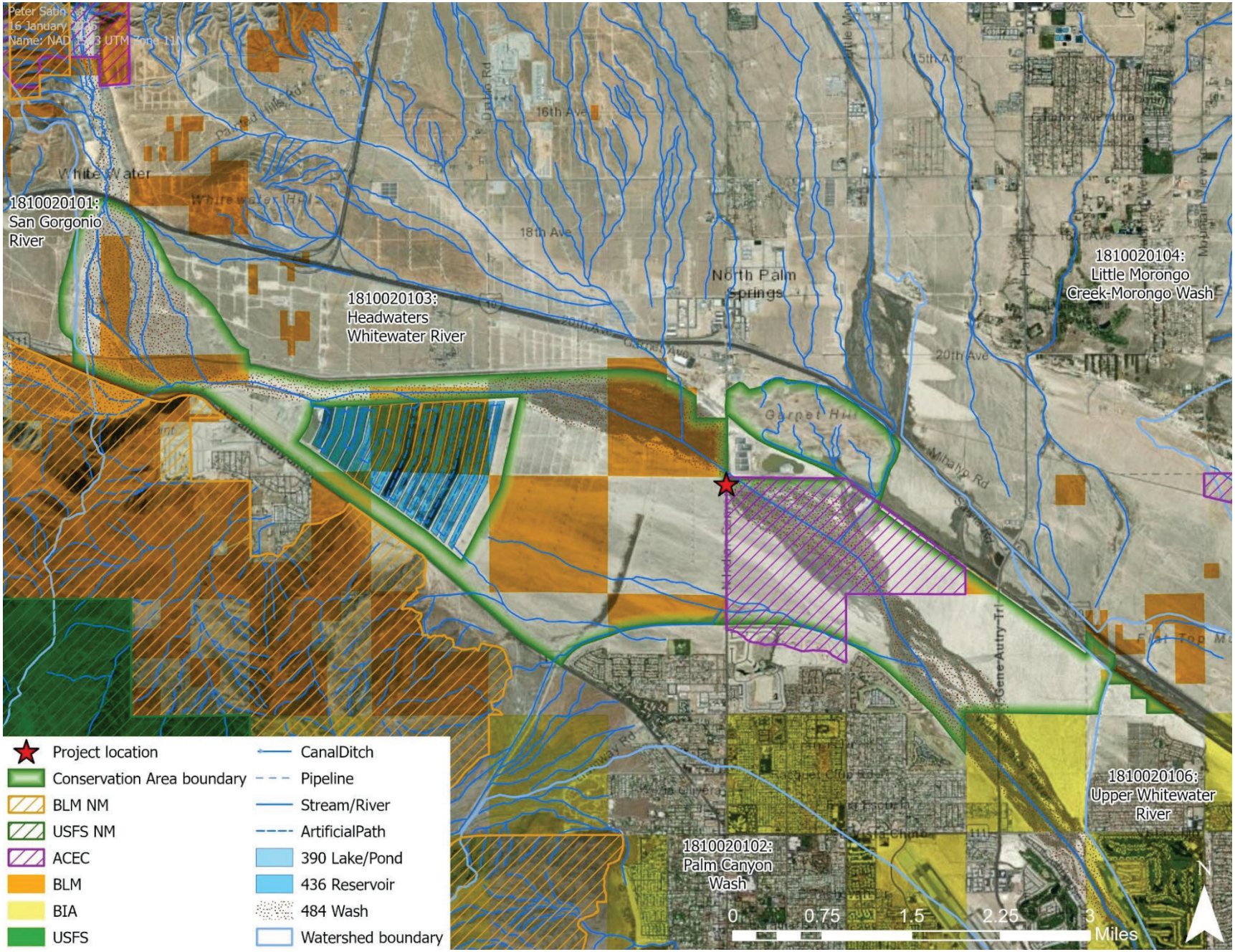


Figure 2: Land status within the Whitewater Floodplain Conservation Area.

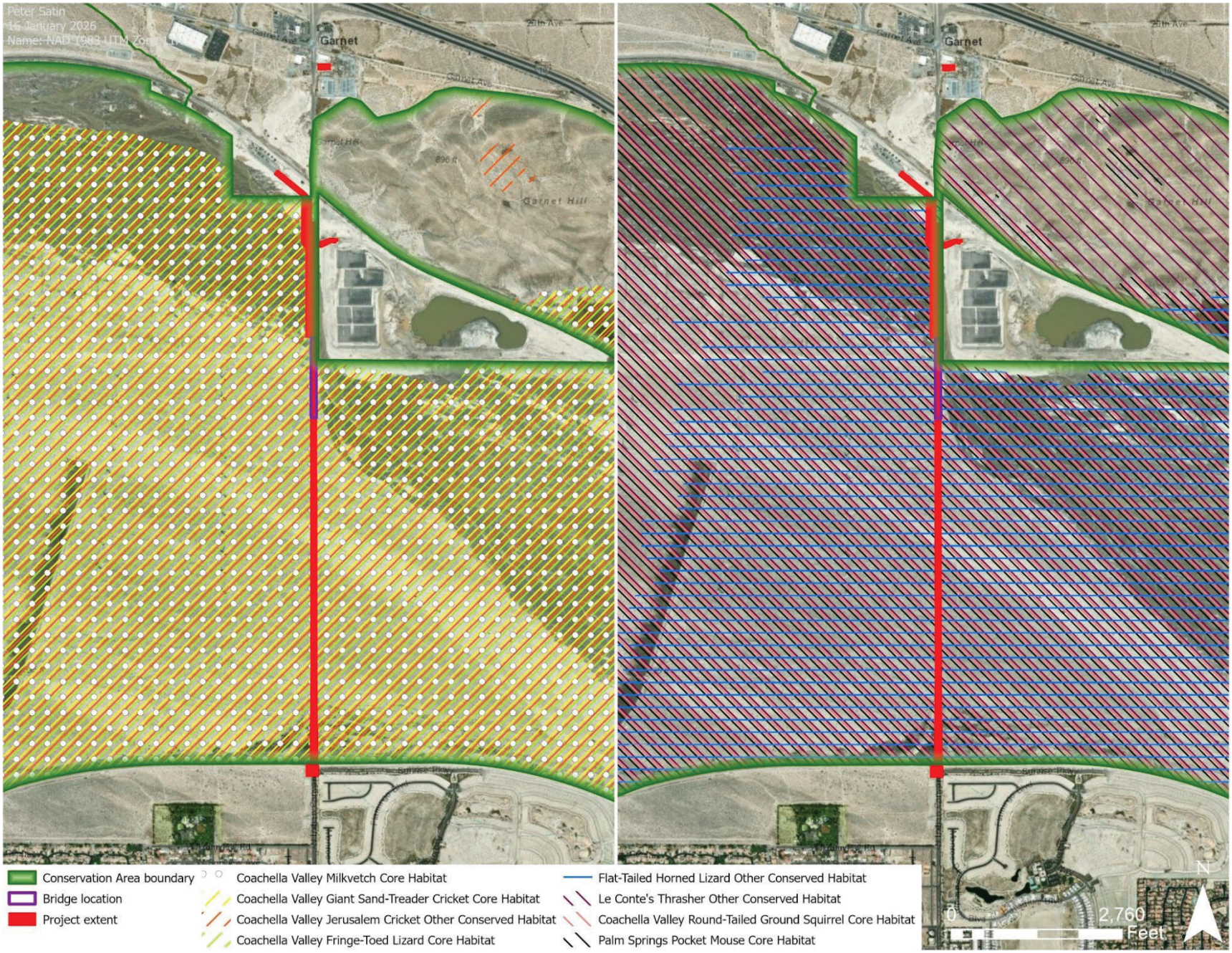


Figure 3: Modeled Covered Species habitat in the Project vicinity.

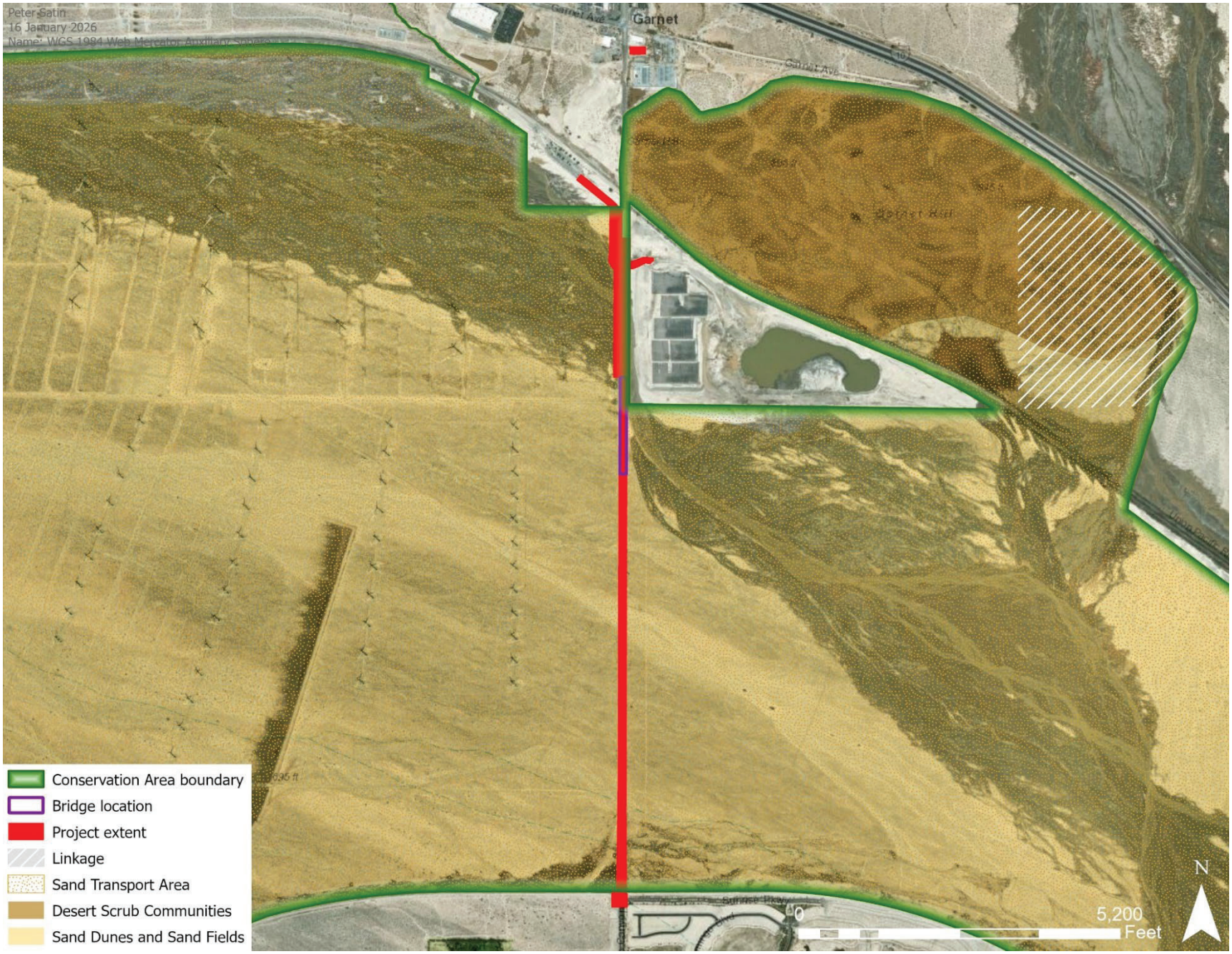


Figure 4: Natural communities and Essential Ecological Processes in the Project vicinity.

Appendix A: Avoidance, minimization and mitigation measures

Biological Corridors

Specific roads in Conservation Areas, where culverts or undercrossings are required to maintain Biological Corridors, are delineated in the Section 4.3 subsections on individual Conservation Areas.

Burrowing Owl

This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities other than levees, berms, dikes, and similar features that are known to contain burrowing owl burrows. O&M of roads is not subject to this requirement. For other projects that are subject to CEQA, the Permittees will require burrowing owl surveys in the Conservation Areas using an accepted protocol (as determined by the CVCC in coordination with the Permittees and the Wildlife Agencies). Prior to Development, the construction area and adjacent areas within 500 feet of the Development site, or to the edge of the property if less than 500 feet, will be surveyed by an Acceptable Biologist for burrows that could be used by burrowing owl. If a burrow is located, the biologist will determine if an owl is present in the burrow. If the burrow is determined to be occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No Development or O&M activities will be permitted within the buffer until the young are no longer dependent on the burrow.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the Covered Activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

Within one (1) year of Permit issuance, CVCC will cooperate with County Flood Control, CVWD and IID to conduct an inventory of levees, berms, dikes, and similar features in the Plan Area maintained by those Permittees. Burrowing owl burrow locations will be mapped and each of these Permittees will incorporate the information into its O&M practices to avoid impacts to the burrowing owl to the maximum extent Feasible. CVCC in cooperation with County Flood Control, CVWD, and IID will prepare a manual for maintenance staff, educating them about the burrowing owl and appropriate actions to take when owls are encountered to avoid impacts to the maximum extent Feasible. The manual will be submitted to the Wildlife Agencies for review and comment within two (2) years of Permit issuance. In conjunction with the Monitoring Program, the maps of the burrowing owl locations along the above-described levees, berms, dikes, and similar features will be periodically updated.

Covered Riparian Bird Species

This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot. Riparian Habitat here refers to the following natural communities: southern arroyo willow riparian forest, Sonoran cottonwood-willow riparian forest, desert fan palm oasis woodland, and southern sycamore-alder riparian woodland in the Cabazon, Stubbe and Cottonwood Canyons, Whitewater Canyon, Upper Mission Creek/Big Morongo Canyon, Thousand Palms, Indio Hills Palms, Joshua Tree National Park, Mecca Hills and Orocopia Mountains, Dos Palmas, Coachella Valley Stormwater Channel and Delta, and Santa Rosa and San Jacinto Mountains Conservation Areas. Covered Activities, including O&M of facilities and construction of permitted new projects, in riparian Habitat will be conducted to the maximum extent Feasible outside of the March 15 – September 15 nesting season for least Bell's vireo, and the May 1 – September 15 nesting season for southwestern willow flycatcher, summer tanager, yellow warbler, and yellow-breasted chat. If Covered Activities must occur during the nesting season, surveys shall be conducted to determine if any active nests are present. If active nests are identified, the Covered Activity shall not be conducted within 200 feet of an active nest. If surveys conducted during the nesting season document that Covered nesting riparian bird Species are not present, the Covered Activity may proceed.

Crissal Thrasher

This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. In modeled crissal thrasher Habitat in the Willow Hole, Thousand Palms, Indio Hills Palms, East Indio Hills, Dos Palmas, and Coachella Valley Stormwater Channel and Delta Conservation Areas, surveys will be conducted by an Acceptable Biologist prior to the start of construction activities during the nesting season, January 15 – June 15, to determine if active nest sites for this species occur on the construction site and/or within 500 feet of the construction site, or to the edge of the property boundary if less than 500 feet. If nesting crissal thrashers are found, a 500-foot buffer, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction activities will be permitted within the buffer during the breeding season of January 15 – June 15 or until the young have fledged.

Desert tortoise

This measure does not apply to single-family residences and any non-commercial accessory uses and structures, including but not limited to second units on an existing legal lot, or to O&M of Covered Activities for Permittee infrastructure facilities. Within Conservation Areas, the Permittees will require surveys for desert tortoise for Development in modeled desert tortoise Habitat. Prior to Development, an Acceptable Biologist will conduct a presence/absence survey of the Development area and adjacent areas within 200 feet of the Development area, or to the property boundary if less than 200 feet and permission from the adjacent landowner cannot be obtained, for fresh sign of desert tortoise, including live tortoises, tortoise remains, burrows, tracks, scat, or egg shells. The presence/absence survey must be conducted during the window between February 15 and October 31. Presence/absence surveys require 100% coverage of the survey area. If no sign is found, a clearance survey is not required. A presence/absence survey is valid for 90 days or indefinitely if tortoise-proof fencing is installed around the Development site.

If fresh sign is located, the Development area must be fenced with tortoise-proof fencing and a clearance survey conducted during the clearance window. Desert tortoise clearance surveys shall be conducted during the clearance window from February 15 to June 15 and September 1 to October 31 or in accordance with the most recent Wildlife Agency protocols. Clearance surveys must cover 100% of the Development area. A clearance survey must be conducted during different tortoise activity periods (morning and afternoon). All tortoises encountered will be moved from the Development site to a specified location. Prior to issuance of the Permits, CVCC will either use the *Permit Statement Pertaining to High Temperatures for Handling Desert Tortoises* and *Guidelines for Handling Desert Tortoises During Construction Projects*, revised July 1999, or develop a similar protocol for relocation and monitoring of desert tortoise, to be reviewed and approved by the Wildlife Agencies. Thereafter, the protocol will be revised as needed based on the results of monitoring and other information that becomes available.

For O&M activities in the Conservation Areas, the Permittees shall ensure that personnel conducting such activities are instructed to be alert for the presence of desert tortoise. If a tortoise is spotted, activities adjacent to the tortoise's location will be halted and the tortoise will be allowed to move away from the activity area. If the tortoise is not moving, it will be relocated by an Acceptable Biologist to nearby suitable Habitat and placed in the shade of a shrub. To the maximum extent Feasible, O&M activities will avoid the period from February 15 and October 31.

Utility development protocols have been developed to avoid or minimize potential adverse impacts to the desert tortoise in the Conservation Areas from utility and road right- of-way projects, such as the installation and maintenance of water, sewer, and electric lines and roadway maintenance. The objectives of these protocols are to provide reliable and consistent direction on utility development within the Conservation Areas. Two utility development protocols, inactive and active season, provide specific direction on site preparation and construction phases of utility projects in the Conservation Areas. The protocols include steps to be followed during the desert tortoise active and/or inactive season. The inactive season protocol must be used for utility maintenance or development within the November 1 to February 14 time frame; the active season protocol must be used for utility maintenance or development within the February 15 to October 31 time frame. Deviations from these time frames must be presented to the RMOC.

Inactive Season Protocol

This protocol is applicable to pre-construction and construction phases of utility Covered Activity projects occurring between November 1 and February 14. These protocols apply only to the site preparation and construction phases of projects. The project proponent must follow the eight pre-construction protocol requirements listed below.

1. A person from the entity contracting the construction shall act as the contact person with the representative of the appropriate RMUC. He/she will be responsible for overseeing compliance with the protective stipulations as stated in this protocol.

2. Prior to any construction activity within the Conservation Areas, the contact person will meet with the representative of the appropriate RMUC to review the plans for the project. The representative of the appropriate RMUC will review alignment, pole spacing, clearing limits, burrow locations, and other specific project plans which have the potential to affect the desert tortoise. He or she may recommend modifications to the contact person to further avoid or minimize potential impacts to desert tortoise.

3. The construction area shall be clearly fenced, marked, or flagged at the outer boundaries to define the limits of construction activities. The construction right of- way shall normally not exceed 50 feet in width for standard pipeline corridors, access roads and transmission corridors, and shall be minimized to the maximum extent Feasible. Existing access roads shall be used when available, and rights-of way for new and existing access roads shall not exceed 20 feet in width unless topographic obstacles require greater road width. Other construction areas including well sites, storage tank sites, substation sites, turnarounds, and laydown/staging sites which require larger areas will be determined in the preconstruction phase. All construction workers shall be instructed that their activities shall be confined to locations within the fenced, flagged, or marked areas.

4. An Acceptable Biologist shall conduct pre-construction clearance surveys of all areas potentially disturbed by the proposed project. Any winter burrows discovered in the Conservation Areas during the pre-construction survey shall be avoided or mitigated. The survey shall be submitted to the representative of the appropriate RMUC as part of plan review.

5. All site mitigation criteria shall be determined in the pre-construction phase, including but not limited to seeding, barrier fences, leveling, and laydown/staging areas, and will be reviewed by the representative of the appropriate RMUC prior to implementation.

6. A worker education program shall be implemented prior to the onset of each construction project. All construction employees shall be required to read an educational brochure prepared by the representative of the appropriate RMUC and/or the RMOC and attends a tortoise education class prior to the onset of construction or site entry. The class will describe the sensitive species which may be found in the area, the purpose of the MSHCP Reserve System, and the appropriate measures to take upon discovery of a sensitive species. It will also cover construction techniques to minimize potential adverse impacts.

7. All pre-construction activities which could Take tortoises in any manner (e.g., driving off an established road, clearing vegetation, etc.) shall occur under the supervision of an Acceptable Biologist.

8. If there are unresolvable conflicts between the representative of the appropriate RMUC and the contact person, then the matter will be arbitrated by the RMOC and, if necessary, by CVCC.

The following terms are established to protect the desert tortoise during utility related construction activities in the Conservation Areas and are to be conducted by an Acceptable Biologist.

- An Acceptable Biologist shall oversee construction activities to ensure compliance with the protective stipulations for the desert tortoise.

- Desert tortoises found above ground inside the project area during construction shall be moved by an Acceptable Biologist out of harm's way and placed in a winter den (at a distance no greater than 250 feet). If a winter den cannot be located, the USFWS or CDFG shall determine appropriate action with respect to the tortoise. Tortoises found above ground shall be turned over to the Acceptable Biologist

- No handling of tortoises will occur when the air temperature at 15 centimeters above ground exceeds 90 degrees Fahrenheit.

- Desert tortoise burrows shall be avoided to the maximum extent Feasible. An Acceptable Biologist shall excavate any burrows which cannot be avoided and will be disturbed by construction. Burrow excavation shall be conducted with the use of hand tools only, unless the Acceptable Biologist determines that the burrow is unoccupied immediately prior to burrow destruction.

- Only burrows within the limits of clearing and surface disturbance shall be excavated. Burrows outside these limits, but at risk from accidental crushing, shall be protected by the placement of deterrent barrier fencing between the burrow and the construction area. Installation and removal of such barrier fencing shall be under the direction and supervision of an Acceptable Biologist.

- For electrical transmission line and road construction projects, only burrows within the right-of-way shall be excavated. Burrows outside the right-of-way, but at risk from accidental crushing, shall be protected by the placement of deterrent barrier fencing between the burrow and the right-of-way. Installation and removal of such barrier fencing shall be under the direction and supervision of an Acceptable Biologist.

- Tortoises in the Conservation Areas are not to be removed from burrows until appropriate action is determined by USFWS or CDFG with respect to the tortoise. The response shall be carried out within 72 hours.

- Blasting is not permissible within 100 feet of an occupied tortoise burrow.

During construction, contractors will comply with the mitigation and minimization measures contained within this protocol. These measures are:

- All trenches, pits, or other excavations shall be inspected for tortoises by an Acceptable Biologist prior to filling.

- All pipes and culverts stored within desert tortoise Habitat shall have both ends capped to prevent entry by desert tortoises. During construction, all open ended pipeline segments that are welded in place shall be capped during periods of construction inactivity to prevent entry by desert tortoises.

- Topsoil removed during trenching shall be re-spread on the pipeline construction area following compaction of the backfill. The area shall be restored as determined during the environmental review.

- All test pump water will be routed to the nearest wash or natural drainage. The route will be surveyed by an Acceptable Biologist. If tortoises are found in the drainage area the Acceptable Biologist will remove the tortoises.

- Powerlines associated with water development, such as to provide power for pumps, should be buried underground adjacent to the pipe. All above ground structures deemed to be necessary shall be equipped with functional anti-perching devices that would prevent their use by ravens and other predatory birds, and shall adhere to the electrical distribution protocol which follows.

- In order to perform routine O&M of the water systems such as wells, pumps, water lines and storage tanks, etc., employees are to be trained in the area of desert tortoise

education. This training will be performed on a regular basis by an Acceptable Biologist for those personnel not previously trained. The training will include at a minimum the following: identification of tortoises, burrows, and other sign; and instructions on installing tortoise barrier fencing. During the course of basic O&M, desert tortoise will be avoided. Untrained employees shall not perform maintenance operations within the reserve.

- All disturbance areas around poles or concrete pads will be reduced to a size just large enough for the construction activity

- Areas disturbed around poles or construction pads will be restored as determined during the pre-construction process.

- Poles or other above ground structures necessary for electrical distribution development shall be minimized as much as possible. All above ground structures shall be equipped with functional anti-perching devices that would prevent their use by ravens and other predatory birds.

- In order to perform routine O&M of the electrical distribution systems such as transmission lines and poles, substations, etc., employees are to be trained in the area of desert tortoise education. This training will be performed on a regular basis by a qualified biologist for those personnel not previously trained. The training will include at a minimum the following: identification of tortoises, burrows, and other sign; and instructions on installing tortoise barrier fencing. During the course of basic O&M, desert tortoise will be avoided. Untrained employees shall not perform maintenance operations within the non-Take areas.

- All trash and food items shall be promptly contained and removed daily from the project site to reduce the attractiveness of the area to common ravens and other desert tortoise predators.

- Construction activities which occur between dusk and dawn shall be limited to areas which have already been cleared of desert tortoises by the Acceptable Biologist and graded or located in a fenced right-of-way. Construction activities shall not be permitted between dusk and dawn in areas not previously graded.

Active Season Protocol

This protocol is applicable to pre-construction and construction phases of utility development projects occurring between February 15 and November 1. It is identical to the Inactive Season Protocol with the following additions:

- Work areas shall be inspected for desert tortoises within 24 hours of the onset of construction. To facilitate implementation of this condition, burrow inspection and excavation may begin no more than seven (7) days in advance of construction activities, as long as a final check for desert tortoises is conducted at the time of construction.

- All pre-construction activities which could Take tortoises in any manner (e.g., driving off an established road, clearing vegetation, etc.) shall occur under the overall supervision of an Acceptable Biologist. Any hazards to tortoises created by this activity, such as drill holes, open trenches, pits, other excavations, or any steep-sided depressions, shall be checked three times a day for desert tortoises. These hazards shall be eliminated each

day prior to the work crew leaving the site, which may include installing a barrier that will preclude entry by tortoises. Open trenches, pits or other excavations will be backfilled within 72 hours, whenever possible. A 3:1 slope shall be left at the end of every open trench to allow trapped desert tortoises to escape. Trenches not backfilled within 72 hours shall have a barrier installed around them to preclude entry by desert tortoises. All trenches, pits, or other excavations shall be inspected for tortoises by a biological monitor trained and approved by the Acceptable Biologist prior to filling.

- If a desert tortoise is found, the biological monitor shall notify the Acceptable Biologist who will remove the animal as soon as possible.

- Only burrows within the limits of clearing and surface disturbance shall be excavated. Burrows outside these limits, but at risk from accidental crushing, shall be protected by the placement of deterrent barrier fencing between the burrow and the construction area. The barrier fence shall be at least 20 feet long and shall be installed to direct the tortoise leaving the burrow away from the construction area. Installation and removal of such barrier fencing shall be under the direction and supervision of the biological monitor.

- If blasting is necessary for construction, all tortoises shall be removed from burrows within 100 feet of the blast area.

Disposition of Sick, Injured, or Dead Specimens

Upon locating dead, injured, or sick desert tortoises under any utility or road project, initial notification by the contact representative or Acceptable Biologist must be made to the USFWS or CDFG within three (3) working days of its finding. Written notification must be made within five (5) calendar days with the following information: date; time; location of the carcass; photograph of the carcass; and any other pertinent information. Care must be taken in handling sick or injured animals to ensure effective treatment and care. Injured animals shall be taken care of by the Acceptable Biologist or an appropriately trained veterinarian. Should any treated tortoises survive, USFWS or CDFG should be contacted regarding the final disposition of the animals.

Fluvial Sand Transport

Activities, including O&M of facilities and construction of permitted new projects, in fluvial sand transport areas in the Cabazon, Stubbe and Cottonwood Canyons, Snow Creek/Windy Point, Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, Mission Creek/Morongo Wash, Willow Hole, Long Canyon, Edom Hill, Thousand Palms, West Deception Canyon, and Indio Hills/Joshua Tree National Park Linkage Conservation Areas will be conducted in a manner to maintain the fluvial sand transport capacity of the system.

Le Conte's Thrasher

This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. In modeled Le Conte's thrasher Habitat in all the Conservation Areas, during the nesting season, January 15 - June 15, prior to the start of construction activities, surveys will be conducted by an Acceptable Biologist on the construction site and within 500 feet of the construction site, or to the property boundary if less than 500 feet. If nesting Le Conte's thrashers are found, a 500 foot buffer, or to the property boundary if less than 500 feet, will be established

around the nest site. The buffer will be staked and flagged. No construction will be permitted within the buffer during the breeding season of January 15 - June 15 or until the young have fledged.

Little San Bernardino Mountains Linanthus

This measure does not apply to single-family residences and any non-commercial accessory uses and structures, including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. To avoid and minimize impacts to this species as much as possible, the following avoidance and minimization effort shall occur:

- **Salvage**: Salvage of top soil and/or seeds should occur prior to ground disturbance in accordance with Section 6.6.1. Salvage should be conducted by or in cooperation with the CVCC.

Mesquite Hummocks and Mesquite Bosque Natural Communities

This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. Construction activities in the Cabazon, Willow Hole, Thousand Palms, Indio Hills Palms, East Indio Hills, Dos Palmas, Coachella Valley Stormwater Channel and Delta, and Santa Rosa and San Jacinto Mountains Conservation Areas will avoid mesquite hummocks and mesquite bosque to the maximum extent Feasible.

Palm Springs Pocket Mouse

To avoid impacts to the Palm Springs pocket mouse and its habitat in the Upper Mission Creek/Big Morongo Canyon and Willow Hole Conservation Areas, Flood Control-related construction activities will comply with the following avoidance and minimization measures.

- **Clearing**: For construction that would involve disturbance to Palm Springs pocket mouse habitat, activity should be phased to the extent feasible and practicable so that suitable habitat islands are no farther than 300 feet apart at any given time to allow pocket mice to disperse between habitat patches across nonsuitable habitat (i.e., unvegetated and/or compacted soils). Prior to project construction, a biological monitor familiar with this species should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). Furthermore, during construction activities, the biological monitor will ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. Finally, construction that involves clearing of habitat should be avoided during the peak breeding season (approximately March to May), and activity should be limited as much as possible during the rest of the breeding season (January to February and June to August).

- **Revegetation**: Clearing of native vegetation (e.g., creosote, rabbitbrush, burrobush, cheesebush) should be followed by revegetation, including natural reestablishment and other means, resulting in habitat types of equal or superior biological value for Palm Springs pocket mouse.

- **Trapping/Holding**: All trapping activity should be conducted in accordance with accepted protocols and by a qualified biologist who possesses a Memorandum of Understanding with CDFG for live-trapping of heteromyid species in Southern California.

- **Translocation**: Should translocation between distinct population groups be necessary, as determined through the Adaptive Management and Monitoring Program, activity should be conducted by a qualified biologist who possesses a Memorandum of Understanding with CDFG for live-trapping of heteromyid species in Southern California. Trapping and subsequent translocation activity should be conducted in accordance with accepted protocols. Translocation programs should be coordinated by or conducted by the CVCC and/or RMOC to determine the appropriate trapping, holding, marking, and handling methods and potential translocation sites.

Peninsular Bighorn Sheep Habitat

Completion of Covered Activities in Peninsular bighorn sheep Habitat in the Cabazon, Snow Creek/Windy Point, and Santa Rosa and San Jacinto Mountains Conservation Areas will be conducted outside of the January 1 - June 30 lambing season unless otherwise authorized through a Minor Amendment to the Plan with concurrence from the Wildlife Agencies. O&M of Covered Activities, including but not limited to refinishing the inside of water storage tanks, shall be scheduled to avoid the lambing season, but may extend into the January 1 – June 30 period if necessary to complete the activity, upon concurrence with the Wildlife Agencies.

For new projects in the above listed Conservation Areas, no toxic or invasive plant species may be used for landscaping. For existing public infrastructure facilities which have landscaping in Peninsular bighorn sheep Habitat in the Cabazon, Snow Creek/Windy Point, and Santa Rosa and San Jacinto Mountains Conservation Areas, the Permittees who have such facilities will, with respect to those facilities, develop and implement a plan and schedule to remove or prevent access to oleander and any other plants known to be toxic to Peninsular bighorn sheep. The plan and schedule will be prepared within one (1) year of Permit issuance.

Triple-ribbed milkvetch

This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. It is understood that O&M for infrastructure developed as part of a private development approved in compliance with the MSHCP that is later transferred to a public entity is included as a Covered Activity. For Covered Activities within modeled triple-ribbed milkvetch Habitat in the Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, and Santa Rosa and San Jacinto Mountains Conservation Areas, surveys by an Acceptable Biologist will be required for activities during the growing and flowering period from February 1 - May 15. Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. In particular, known occurrences on a map maintained by CVCC shall not be disturbed.

Appendix B: Land Use Adjacency Guidelines

The purpose of Land Use Adjacency Guidelines is to avoid or minimize indirect effects from Development adjacent to or within the Conservation Areas. Adjacent means sharing a common boundary with any parcel in a Conservation Area. Such indirect effects are commonly referred to as edge effects, and may include noise, lighting, drainage, intrusion of people, and the introduction of non-native plants and non-native predators such as dogs and cats. Edge effects will also be addressed through reserve management activities such as fencing. The following Land Use Adjacency Guidelines shall be considered by the Permittees in their review of individual public and private Development projects adjacent to or within the Conservation Areas to minimize edge effects, and shall be implemented where applicable.

Drainage

Proposed Development adjacent to or within a Conservation Area shall incorporate plans to ensure that the quantity and quality of runoff discharged to the adjacent Conservation Area is not altered in an adverse way when compared with existing conditions. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the adjacent Conservation Area.

Toxics

Land uses proposed adjacent to or within a Conservation Area that use chemicals or generate bioproducts such as manure that are potentially toxic or may adversely affect wildlife and plant species, Habitat, or water quality shall incorporate measures to ensure that application of such chemicals does not result in any discharge to the adjacent Conservation Area.

Lighting

For proposed Development adjacent to or within a Conservation Area, lighting shall be shielded and directed toward the developed area. Landscape shielding or other appropriate methods shall be incorporated in project designs to minimize the effects of lighting adjacent to or within the adjacent Conservation Area in accordance with the guidelines to be included in the Implementation Manual.

Noise

Proposed Development adjacent to or within a Conservation Area that generates noise in excess of 75 dBA L_{eq} hourly, as measured at the property line, shall incorporate setbacks, berms, or walls, as appropriate, to minimize the effects of noise on the adjacent Conservation Area in accordance with the guidelines to be included in the Implementation Manual.

Invasives

Invasive species are a known threat to native wildlife and wildlife habitat in the Coachella Valley. Impacts of invasive species on wildlife in the Coachella Valley have been documented in research conducted by the Center for Conservation Biology at the University of California, Riverside. Invasive, non-native plant species shall not be incorporated in the landscape for land uses adjacent to or within a Conservation Area. Landscape treatments within or adjacent to a Conservation Area shall incorporate native plant materials to the maximum extent Feasible;

recommended native species are listed in Table 1. The plants listed in Table 2 shall not be used within or adjacent to a Conservation Area. This list may be amended from time to time through a Minor Amendment with Wildlife Agencies' concurrence.

Barriers

Land uses adjacent to or within a Conservation Area shall incorporate barriers in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in a Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls and/or signage.

Grading/Land Development

Manufactured slopes associated with site Development shall not extend into adjacent land in a Conservation Area.

Table 3: Coachella Valley Native Plants Recommended for Landscaping[1]

BOTANICAL NAME	COMMON NAME
TREES	
Washingtonia filifera	California Fan Palm
Cercidium floridum	Blue Palo Verde
Chilopsis linearis	Desert Willow
Olneya tesota	Ironwood Tree
Prosopis glandulosa var. torreyana	Honey Mesquite
SHRUBS	
Acacia greggii	Cat's Claw Acacia
Ambrosia dumosa	Burro Bush
Atriplex canescens	Four Wing Saltbush
Atriplex lentiformis	Quailbush
Atriplex polycarpa	Cattle Spinach
Baccharis sergiloides	Squaw Water-weed
Bebia juncea	Sweet Bush
Cassia (Senna) covesii	Desert Senna
Condalia parryi	Crucilllo
Crossosoma bigelovii	Crossosoma
Dalea emoryi	Dye Weed
Dalea (Psorothamnus) schottii	Indigo Bush
Datura meteloides	Jimson Weed
Encelia farinosa	Brittle Bush
Ephedra aspera	Mormon Tea
Eriogonum fasciculatum	California Buckwheat
Eriogonum wrightii membranaceum	Wright's Buckwheat
Fagonia laevis	(No Common Name)
Gutierrezia sarothrae	Matchweed
Haplopappus acradenius	Goldenbush
Hibiscus denudatus	Desert Hibiscus
Hoffmannseggia microphylla	Rush Pea
Hymenoclea salsola	Cheesebush
Hyptis emoryi	Desert Lavender
Isomeris arborea	Bladder Pod
Juniperus californica	California Juniper
Krameria grayi	Ratany
Krameria parvifolia	Little-leaved Ratany
Larrea tridentate	Creosote Bush
Lotus rigidus	Desert Rock Pea
Lycium andersonii	Box Thorn
Petalonyx linearis	Long-leaved Sandpaper Plant
Petalonyx thurberi	Sandpaper Plant
Peucephyllum schottii	Pygmy Cedar
Prunus fremontii	Desert Apricot
Rhus ovata	Sugar-bush
Salazaria mexicana	Paper-bag Bush
Salvia apiana	White Sage
Salvia eremostachya	Santa Rosa Sage
Salvia vaseyi	Wand Sage
Simmondsia chinensis	Jojoba
Sphaeralcia ambigua	Globemallow (Desert Mallow)
Sphaeralcia ambigua rosacea	Apricot Mallow
Trixis californica	Trixis
Zauschneria californica	California Fuchsia
GROUNDCOVERS	
Mirabilis bigelovii	Wishbone Bush (Four O'Clock)

BOTANICAL NAME	COMMON NAME
Mirabilis tenuiloba	White Four O'Clock (Thin-lobed)
VINES	
Vitis girdiana	Desert Grape
ACCENT	
Muhlenbergia rigens	Deer Grass
HERBACEOUS PERENNIALS[2]	
Adiantum capillus-veneris	Maiden-hair Fern (w)
Carex alma	Sedge (w)
Dalea parryi	Parry Dalea
Eleocharis montevidensis	Spike Rush (w)
Equisetum laevigatum	Horsetail (w)
Juncus bufonis	Toad Rush (w)
Juncus effuses	Juncus (w)
Juncus macrophyllus	Juncus (w)
Juncus mexicanus	Mexican Rush (w)
Juncus xiphioides	Juncus (w)
Notholaena parryi	Parry Cloak Fern
Pallaea mucronata	Bird-foot Fern
CACTI AND SUCCULENTS	
Agave deserti	Desert Agave
Asclepias albicans	Desert Milkweed (Buggy-whip)
Asclepias subulata	Ajamete
Dudleya arizonica	Live-forever
Dudleya saxosa	Rock Dudleya
Echinocereus engelmannii	Calico Hedgehog Cactus
Ferocactus acanthodes	Barrel Cactus
Fouquieria splendens	Ocotillo
Mamillaria dioica	Nipple Cactus
Mamillaria tetrancistra	Corkseed Cactus
Nolina parryi	Parry Nolina
Opuntia acanthocarpa	Stag-horn or Deer-horn Cholla
Opuntia bigelovii	Teddy Bear or Jumping Cholla
Opuntia basilaris	Beavertail Cactus
Opuntia echinocarpa	Silver or Golden Cholla
Opuntia ramosissima	Pencil Cholla, Darning Needle Cholla
Yucca schidigera	Mojave Yucca, Spanish Dagger
Yucca whipplei	Our Lord's Candle

[1] Source: "Coachella Valley Native Plants, Excluding Annuals (0 ft. to approximately 3,000 ft. elevation)." Compiled by Dave Heveron, Garden Collections Manager, and Kirk Anderson, Horticulturist, The Living Desert, May, 2000, for the Coachella Valley Mountains Conservancy.

[2] Common names for herbaceous perennials that are followed by "(w)" indicate a water or riparian species.

Table 4: Prohibited Invasive Ornamental Plants[1]

BOTANICAL NAME	COMMON NAME
Acacia spp. (all species except A. greggii)	Acacia (all species except native catclaw acacia)
Arundo donax (✓)	Giant Reed or Arundo Grass
Atriplex semibaccata (✓)	Australian Saltbush
Avena barbata	Slender Wild Oat
Avena fatua	Wild Oat
Brassica tournefortii (✓✓)	African or Saharan Mustard
Bromus madritensis ssp. *rubens (✓)*	Red Brome
Bromus tectorum (✓✓)	Cheat Grass or Downy Brome
Cortaderia jubata [syn.*C. atacamensis*]	Jubata Grass or Andean Pampas Grass
Cortaderia dioica [syn. *C. selloana*]	Pampas Grass
Descurainia sophia	Tansy Mustard
Eichhornia crassipes	Water Hyacinth
Elaegnus angustifolia	Russian Olive
Foeniculum vulgare	Sweet Fennel
Hirschfeldia incana	Mediterranean or Short-pod Mustard
Lepidium latifolium	Perennial Pepperweed
Lolium multiflorum	Italian Ryegrass
Nerium oleander	Oleander
Nicotiana glauca (✓)	Tree Tobacco
Oenothera berlandieri (#)	Mexican Evening Primrose
Olea europea	European Olive Tree
Parkinsonia aculeata (✓)	Mexican Palo Verde
Pennisetum clandestinum	Kikuyu Grass
Pennisetum setaceum (✓✓)	Fountain Grass
Phoenix canariensis (#)	Canary Island Date Palm
Phoenix dactylifera (#)	Date Palm
Ricinus communis (✓)	Castorbean
Salsola tragus (✓)	Russian Thistle
Schinus molle	Peruvian Pepper Tree or California Pepper
Schinus terebinthifolius	Brazilian Pepper Tree
Schismus arabicus	Mediterranean Grass
Schismus barbatus (✓✓)	Saharan Grass, Abu Mashi
Stipa capensis (✓✓)	No Common Name
Tamarix spp. (all species) (✓✓)	Tamarisk or Salt Cedar
Taeniatherum caput-medusae	Medusa-head
Tribulus terrestris	Puncturevine
Vinca major	Periwinkle
Washingtonia robusta	Mexican fan palm
Yucca gloriosa (#)	Spanish Dagger

[1] Sources: California Exotic Pest Plant Council, United States Department of Agriculture-Division of Plant Health and Pest Prevention Services, California Native Plant Society, Fremontia Vol. 26 No. 4, October 1998, The Jepson Manual; Higher Plants of California, and County of San Diego Department of Agriculture.

# indicates species not on CalEPPC October 1999 “Exotic Pest Plants of Greatest Ecological Concern in California” list

✓ indicates species known to be invasive in the Plan Area

✓✓ indicates particularly troublesome invasive species

U.S. FISH AND WILDLIFE SERVICE
Palm Springs Fish and Wildlife Office
777 E. Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

CALIFORNIA DEPARTMENT OF
FISH AND WILDLIFE
Inland Deserts Region
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In Reply Refer to:
FWS/CDFW-2025-0060256-HCP-TA-ERV

February 19, 2026
Sent by Email

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RE: Wildlife Agencies Comments Regarding Joint Project Review CVCC 25-004 North Indian Canyon Bridge Project

Dear Peter Satin and Jonathon Hoy:

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (collectively, the Wildlife Agencies) have reviewed the project application and draft Joint Project Review (JPR) prepared by the Coachella Valley Conservation Commission (CVCC) regarding the CVCC 25-004 North Indian Canyon Bridge Project (Project). The proposed Project is located within the Whitewater Floodplain Conservation Area (WFCA) of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) area. The Project proponent, the Coachella Valley Association of Governments (CVAG), proposes various roadway modifications along a 1.7-mile stretch of North Indian Canyon Drive in the City of Palm Springs. The proposed Project includes construction of a bridge over the Whitewater River channel and a multimodal pathway along the west side of North Indian Canyon Drive.

The Wildlife Agencies concur with CVCC's comments regarding CVAG providing the Wildlife Agencies with an opportunity to review and provide input on 60% and 90% construction designs. The Wildlife Agencies also concur with CVCC's recommendation that the proposed mitigation measure related to maintaining fluvial sand transport capacity identifies specific actions to be taken based on the projected work activities. Please ensure that the Project's mitigation measures clearly indicate that no fluvial or aeolian sediments will be removed from, and all fluvial and

aeolian sediments will be retained within, the sediment transport ecological processes area (see CVMSHCP Figure 4-11d) within the WFCA. Also, the Wildlife Agencies request that a designated deposition area is delineated for the aeolian and fluvial sediments that are collected from under or surrounding the proposed bridge, along with measures to ensure sediment is adequately spread out and made available for aeolian and fluvial sand transport.

Based on a review of aerial imagery using Google Earth, it appears that, currently, sediment that is collected along the roads is deposited within an approximately 2.6-acre area on the east side of North Indian Canyon Drive near Garnet Mine. Measures are needed to ensure impacts to sand-dependent Covered Species are avoided and minimized at both the sites of anticipated sediment removal and deposition. The Natural Environmental Study prepared by the Project proponent identifies avoidance and minimization measures, in addition to the required measures listed in CVMSHCP Section 4.4, and includes measures for Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) and Coachella Valley fringe-toed lizard (*Uma inornata*); however, these measures are non-specific, and Measure BIO-8 appears to only be applicable during construction. The avoidance and minimization measures need to be revised to identify specific actions to avoid and minimize impacts to sand-dependent Covered Species throughout both construction and future sediment removal and deposition activities, such as surveys conducted prior to sediment deposition to determine salvage/relocation needs. In addition, please revise BIO-15 (Lighting) to present a clear and defensible intrusion limit into adjacent habitat. Descriptors such as lighting will not exceed 15 lux 50 feet from disturbance perimeter, or exceed 5 lux above baseline levels, is necessary to minimize impacts to species occupying adjacent habitat.

Additionally, the NES includes Measure BIO-12, which requires a 160-foot buffer during the western burrowing owl (*Athene cunicularia hypugaea*; burrowing owl) non-breeding season or a 250-foot buffer during the breeding season, if occupied burrows are detected during the required preconstruction surveys, consistent with CVMSHCP Section 4.4. Please follow CDFW's Staff Report on Burrowing Owl Mitigation (2012 or most recent version) that recommends buffer sizes ranging from 50 meters to 500 meters, based on time of year and level of disturbance (see the 2012 Staff Report, Mitigation Methods [page 9]). It is important that the guidance for buffer sizes in the CDFW Staff Report is followed to avoid impacts to burrowing owl individuals, nests, and eggs throughout Project construction. The Wildlife Agencies are available to provide further guidance regarding appropriate buffer sizes.

If you have any questions about these comments, please contact Jacob Skaggs, Senior Environmental Scientist Specialist (jacob.skaggs@wildlife.ca.gov) or Lory Salazar-Velasquez, Fish and Wildlife Biologist (lory_salazar-velasquez@fws.gov).

Sincerely,

DocuSigned by:
Heather Brashear
4ADE68D237B0401...

MARY WOULFE

Digitally signed by MARY WOULFE
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Heather Brashear
Senior Environmental Scientist Supervisor
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Mary Beth Woulfe
Acting Supervisor, Colorado Desert Division
U.S. Fish and Wildlife Service

Appendix C

Water Quality Assessment Report

Water Quality Assessment Report

Coachella Valley Association of Governments

Western Coachella Valley Flooding and Blowsand Projects – Phase One – Indian Canyon Drive

LTCAPL 6164 (030)

City of Palm Springs, Riverside County, California

October 2025

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Aaron Burton, Local Assistance-Environmental Support, 464 West Fourth Street, 6th Floor, San Bernardino, CA 92401-1400; (909) 383-2841 Voice, or use the California Relay Service TTY number, (800) 735-2929.

Water Quality Assessment Report

Indian Canyon Drive Project

08-RIV-10-33.13

October 2025

STATE OF CALIFORNIA

Department of Transportation

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Mark Lancaster, Assistant Director of Transportation
Coachella Valley Association of Governments

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Executive Summary

This report evaluates how the proposed Coachella Valley Association of Governments' Indian Canyon Drive Project (proposed project) may affect the water quality of surface and groundwater resources and their beneficial uses. The proposed project would enhance traffic operations by improving mobility on Indian Canyon Drive. The bridge portion of the proposed project traverses over Chino Canyon Creek and the Whitewater River. Chino Canyon Creek and the Whitewater River are not listed on the 2024 303(d) List of impaired water bodies, and no Total Maximum Daily Loads (TMDLs) have been established. However, the Whitewater River is listed as a 2024 Integrated Report Category 3 waterbody (2024 California Waters with Insufficient Information to Assess Beneficial Use Support But Some Uses May Be Potentially Threatened). During the construction phase of the proposed project, erosion and sediment control measures will be implemented to retain soil and sediment. In addition, devices that will address the post-construction pollutants from the proposed project will be evaluated to mitigate impacts on downstream water bodies.

This report assesses the potential impacts that the proposed project may have on the water quality of nearby receiving water bodies. It evaluates the development of the proposed project; specifically, how it addresses water quality standards, how it complies with National Pollutant Discharge Elimination System (NPDES) permit requirements for redevelopment in the City of Palm Springs (Order No. R7-2013-0011). In addition, the proposed project will be evaluated for its compliance with the State Water Resources Control Board (SWRCB) NPDES Construction General Permit (CGP) (Order No. 2022-0057-DWQ). Based on the currently available information, the proposed project will require regulatory permits from the US Army Corps of Engineers (Section 404), the California Regional Water Quality Control Board, Colorado River Basin Region (Colorado River Basin RWQCB) (Section 401), and the California Department of Fish and Wildlife (1602 Streambed Alteration Agreement) for the required work within Chino Canyon Creek and the Whitewater River.

A Stormwater Pollution Prevention Plan (SWPPP) will be required and will be implemented during construction of the proposed project. The construction SWPPPs will identify specific best management practices BMPs) that will be implemented during the proposed project's construction. They will be implemented to meet the Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology requirements as stipulated in the CGP.

The proposed project will increase the impervious area by approximately 4.24 acres to the new 1.6-mile bicycle lane on Indian Canyon Drive and Palm Springs Station Road, as well as paving Granite Access Road, which will increase the amount of runoff from within the proposed project area. As described in the Riverside County Phase I Stormwater Permittees' *Whitewater River Region Stormwater Management Plan* (SWMP, January 2014, Revised January 2015), the proposed project will be required to incorporate a combination of the Structural and Non-Structural Source Control BMPs discussed in SWMP Section 4.2.1, and may include Protection of Slopes and Channels, and Common Area Litter Control (respectively, and where applicable and feasible). The proposed Structural and Non-Structural Source Control BMPs will be documented in project plans through conditions of approval or building/grading permit conditions. Implementation of these avoidance and minimization measures would minimize impacts to water resources and water quality.

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Construction General Permit Risk Assessment

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INTRODUCTION

APPROACH TO WATER QUALITY ASSESSMENT

The purpose of the Water Quality Assessment Report (WQAR) is to fulfill the requirements of the National Environmental Policy Act (NEPA) and to provide information for National Pollutant Discharge Elimination System (NPDES) permitting. The document includes a discussion of the proposed project, the general environmental setting of the proposed project's area, and the regulatory framework with respect to water quality. It also provides data on surface water and groundwater resources within the proposed project's area and the water quality of these waters, describes water quality impairments and beneficial uses, identifies potential water quality impacts/benefits associated with the proposed project, and recommends avoidance and/or minimization measures for potentially adverse impacts.

PROJECT DESCRIPTION

The Coachella Valley Association of Governments' Indian Canyon Drive Project (proposed project) alignment is approximately 1.6-miles along the Indian Canyon Drive right-of-way, south of Interstate 10 beginning at Palm Springs Station Road and continuing south, crossing the Whitewater River and Chino Canyon Creek, to Sunrise Parkway in the City of Palm Springs (City) within Riverside County. The proposed project will improve the roadway with a bridge system along Indian Canyon Drive to mitigate the adverse impacts of flood and blowsand events. Frequent and prolonged road closures on Indian Canyon Drive strain the region's transportation system. The bridge would span a portion of the Whitewater River. Proposed project development will occur in six phases over 24 months and include the following activities: clearing and grubbing; grading; foundation construction; substructure construction; superstructure construction; retaining wall construction; and roadway construction. Construction would primarily take place during daytime hours with occasional nighttime work. Staging would occur along the proposed project's alignment and at the southeast corner of the intersection of Indian Canyon Drive and Garnet Avenue. The key components of the proposed project consist of the following:

- Elevated roadway bridge system to improve drainage crossing along Indian Canyon Drive.
- Sand fencing and/or other blowsand mitigation measures at various locations within the proposed project's limits and specifically at Amtrak's Palm Springs Station.
- Construct a 1.6-mile active transportation pathway (from Sunrise Parkway to Amtrak's Palm Springs Station) connecting to CV Link (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection.
- Installation of solar panels at Amtrak's Palm Springs Station generating three megawatts and an electric vehicle (EV) charging station to advance California's climate goals.

The existing total impervious surface area is approximately 16 acres. The estimated proposed impervious surface is approximately 20.24 acres, resulting in approximately 4.24 acres of Net New Impervious (NNI) surface. The Disturbed Soil Area (DSA) is approximately 38 acres. Since the DSA is over one acre, the California State Water Resources Control Board (SWRCB) NPDES Construction General Permit (CGP) (NPDES No. CAS000002, Order No. 2022-0057-DWQ, adopted on September 8, 2022) applies, and it requires an evaluation of the estimated potential for sediment transport and risk to the receiving water (also known as "Risk Level"). Based on the information currently available, the proposed project is a Risk Level 1 project (lowest risk level). The Replaced Impervious Surface (RIS), New Impervious Surface (NIS),

Additional Treated Areas (ATA) conditions 1 and 2, and any Excluded Impervious Areas (EIA) will be determined at a later design phase.

Proposed Project Purpose and Need

The purpose of the proposed project is to construct a bridge system to address safety concerns regarding the conveyance of floodwaters and blowsand. The proposed project is designed to mitigate the adverse impacts of flood and blowsand events that occur along Indian Canyon Drive and the local vicinity. Frequent and prolonged road closures on Indian Canyon Drive due to floods and blowsand strains the region's transportation system, causing congestion, increased travel times, and emissions, which impacts the local economy by constraining people and the movement of goods.

The proposed project will address three primary needs:

1. Improve a portion of the at-grade roadway infrastructure along Indian Canyon Drive to facilitate the flow of floodwater and sand in areas of concentrated flow, including undercrossings to create a wildlife corridor and sand fencing.
2. Improve mobility for motorists and pedestrians by minimizing the frequency of roadway closures caused by flood and blowsand events.
3. Provide a multi-modal active transportation pathway and solar facility.

Further, the City's 2040 General Plan Circulation Element identifies this proposed project within Policy CR2.8: "Improve connectivity and resiliency in and out of the City by constructing all-weather bridge crossings and other infrastructure enhancements along major access corridors like Vista Chino, Gene Autry Trail, Indian Canyon Drive, and Palm Canyon Drive," and as established under Goal CR2: "Provide a circulation network that maintains a safe and efficient system for all travel modes and users of all ages and mobilities."

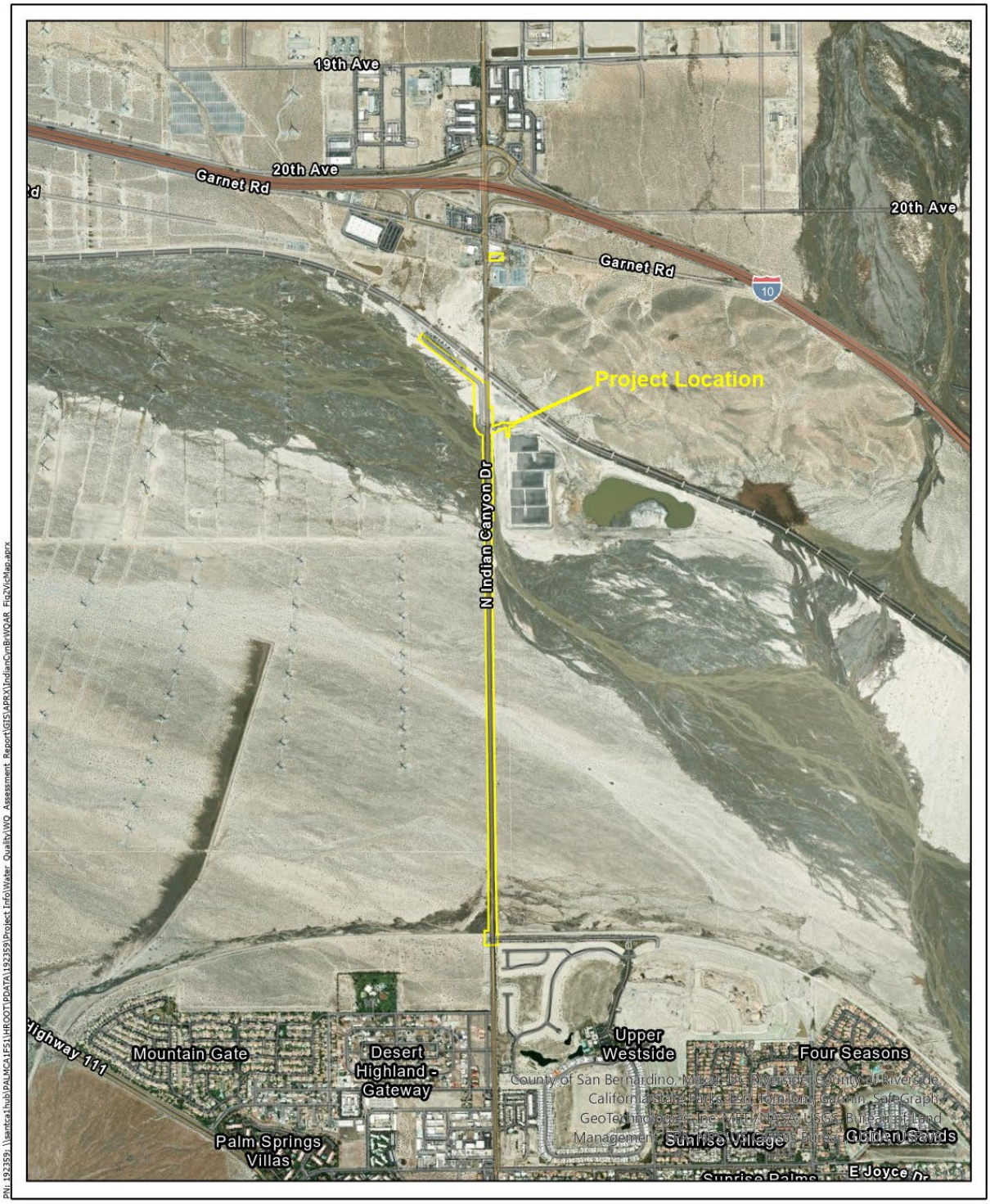
Figure 1 shows a regional vicinity map of the proposed project location. Figure 2 is a project vicinity map of the proposed project location.



WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS – PHASE ONE – INDIAN CANYON DRIVE

Regional Vicinity Map

Figure 1



WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS – PHASE ONE – INDIAN CANYON DRIVE

0 0.13 0.25 0.5 0.75 1 Miles

Source: ESRI, Google Earth

Project Vicinity Map

Figure 2

REGULATORY SETTING

FEDERAL LAWS AND REQUIREMENTS

Clean Water Act

In 1972 Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source unlawful unless the discharge is in compliance with a NPDES permit. Known today as the Clean Water Act (CWA), Congress has amended it several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit program. Important CWA sections are:

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request, see below).
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. The Federal Environmental Protection Agency delegated to the California SWRCB the implementation and administration of the NPDES program in California. The SWRCB established nine RWQCBs. The SWRCB enacts and enforces the Federal NPDES program and all water quality programs and regulations that cross Regional boundaries. The nine RWQCBs enact, administer and enforce all programs, including NPDES permitting, within their jurisdictional boundaries. Section 402(p) requires permits for discharges of stormwater from industrial, construction, and Municipal Separate Storm Sewer Systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S, including wetlands. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

The objective of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

The USACE issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to authorize a variety of minor project activities with no more than minimal effects.

There are also two types of Individual permits: Standard Individual permit and Letter of Permission. Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE’s Individual permits. For Standard Individual permit, the USACE decision to approve is based on compliance with U.S. Environmental Protection Agency’s (U.S. EPA) Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations (CFR) 40 Part 230) and whether permit approval is in the public interest. The 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only when there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA), to the proposed discharge that would have less effects on waters of the U.S., and not have any other significant adverse environmental consequences. Per Guidelines, documentation is needed that a

sequence of avoidance, minimization, and compensation measures have been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4.

STATE LAWS AND REQUIREMENTS

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the State. It predates the CWA and regulates discharges to waters of the State. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant". Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The SWRCB and RWQCBs are responsible for establishing the water quality standards as required by the CWA and regulating discharges to protect beneficial uses of water bodies. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments in their jurisdictions, and then set standards necessary to protect these uses. Consequently, the water quality standards developed for particular water body segments are based on the designated use and vary depending on such use. Water body segments that fail to meet standards for specific pollutants are included in a Statewide List in accordance with CWA Section 303(d). If a Regional Board determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-source point controls (NPDES permits or Waste Discharge Requirements), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB adjudicates water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of stormwater dischargers, including MS4s. The U.S. EPA defines an MS4 as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over stormwater, that are designed or used for collecting or conveying stormwater." The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Municipal Separate Storm Sewer System (MS4)

The *Waste Discharge Requirement for Discharges from the Municipal Separate Storm Sewer System (MS4) within the Whitewater River Watershed Riverside County Flood Control and Water Conservation District, Owner/Operator County of Riverside, Owner/Operator Coachella Valley Water District, Owner/Operator and Incorporated Cities of Riverside County within the Whitewater River Basin, Owners/Operators* (Order Number R7-2013-0011, NPDES No. CAS 617002) (Riverside County Whitewater River Region NPDES Permit) has New Development/ Significant Redevelopment requirements that define "New Development" and "Significant Redevelopment" categories with their corresponding requirements. According to the *Whitewater River Region Stormwater Management Plan*, this proposed project qualifies as an "Other Development Project" due to its significant redevelopment that discharges into the MS4 and disturbs an area of one acre or more, it must incorporate a combination of Structural and Non-Structural Source Control BMPs discussed in SWMP Section 4.2.1, and may include Protection of Slopes and Channels, and Common Area Litter Control (respectively, and where applicable and feasible). The proposed Structural and Non-Structural Source Control BMPs will be documented in project plans through conditions of approval or building/grading permit conditions (Riverside County Phase I Stormwater Permittees, 2015). The Riverside County Whitewater River Region NPDES Permit includes four basic requirements:

- Regulate the discharge of potential pollutants in urban runoff that discharge to surface waters in the Whitewater River Region;
- Implement regulatory requirements prescribed in the Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan), and requirements of Section 402(p) of the CWA and Title 40 Code of Federal Regulations (40 CFR) Part 122;
- Require implementation of preventative measures to assure maintenance of existing receiving water quality within the Whitewater River Region; and
- Implement the Coachella Valley Stormwater Channel Bacterial Indicators TMDL.

On April 7, 2015 the California SWRCB adopted the Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Trash Provisions). *These TRASH PROVISIONS shall be implemented through a prohibition of discharge (Chapter IV.A.2) and through NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act, waste discharge requirements (WDRs), or waivers of WDRs.* MS4 permittees with regulatory authority over Priority Land Uses (PLU) shall be required to comply with the prohibition of discharge by installing, operating, and maintaining Full Capture Systems (FCS) which will capture all trash 5 millimeters or greater in size. PLUs identified in the Trash Provisions include high density residential, industrial, commercial, mixed urban, and public transportation stations.

The proposed project must conform to all applicable water quality regulations and/or permit requirements of the RWQCB. It shall also comply with the SWRCB's Trash Provision as required through the City's NPDES permit.

Construction General Permit

The CGP was effective as of September 1, 2023. The permit regulates stormwater discharges from construction sites which result in a DSA of one acre or greater, and/or are smaller sites that are part of a larger common plan of development.

- For all projects subject to the CGP, the applicant is required to hire a Qualified Stormwater Pollution Prevention Plan (SWPPP) Developer (QSD) to develop and implement an effective SWPPP. A Qualified SWPP Practitioner (QSP) may be hired as

well to assist in field work. All Project Registration Documents (PRDs), including the SWPPP, Risk Level (RL) Determinations, Site map and post-construction treatment documents are required to be uploaded into the SWRCB's on-line Stormwater Multiple Application and Report Tracking System (SMARTS). A Waste Discharge Identification (WDID) number will be issued within 10 business days after the SWRCB receives a complete Notice of Intent (NOI) package.

- The 2022 CGP requires post-construction treatment permit registration documents to be submitted in SMARTS with the NOI to include: (1) An attachment or web-source containing the NPDES MS4 post-construction requirements and (2) the post-construction plans and calculations (Preliminary post-construction plans and calculations may be submitted as a Permit Registration Document, as long as the approved plans and calculations are submitted within 14 days of approval by the municipal stormwater permittee, through a Change of Information (COI) in SMARTS). Additionally, a COI in SMARTS must be submitted for any revisions to post-construction plans and calculations prior to submitting the Notice of Termination (NOT).

Based on the information currently available, the DSA is estimated to be approximately 38 acres and the proposed project would require CGP coverage and preparation of a SWPPP.

Waiver from Construction General Permit

Projects that disturb over one acre but less than five acres of soil, may qualify for waiver of CGP coverage. This occurs whenever the Rainfall Erosivity, (R) in the Revised Universal Soil Loss Equation (RUSLE) is less than five. When the R factor is below the numeric value of five, projects can be waived from coverage under the CGP. Refer to the CGP, Attachment D1, Risk Determination Worksheet of the CGP (see References Section).

Construction activity that results in soil disturbances of less than one acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop a SWPPP, to implement soil erosion and pollution prevention control measures, and to obtain coverage under the CGP.

Risk Level Inspection and Sampling Requirements

The CGP contains a risk-based permitting approach by establishing three levels of risk possible for a construction site. Risk levels are determined during the planning, design, and construction phases, and are based on project risk of generating sediment and receiving water risk of becoming impaired. Requirements apply according to the Risk Level (RL) determined, with additional monitoring and reporting requirements for higher risk projects with detailed requirements listed in Attachment D of the CGP. Requirements include:

- Visual inspections weekly, prior to Qualifying Precipitation Events (QPEs), during QPEs (every 24 hours) and post QPEs. A qualifying Storm Event (QPE) is defined as a forecasted 50% probability of precipitation of 0.5" or more within a 24-hour period and continues on subsequent 24-hour periods when 0.25 inches or more is forecast.
- RL 2 and 3 projects have sampling requirement for pH and Turbidity.
- Additionally, sampling for Numeric Action Levels (NALs) and Numeric Effluent Limits (NELs) is required for all risk level projects for TMDL-related non-visible pollutants listed in Attachment H of the CGP, if there is a discharge due to failure to implement a BMP, a container spill or leak, or a BMP breach or malfunction.

Based on the information currently available, the proposed project is a Risk Level 1 project (WQAR Appendix). A Risk Level 1 project has a low sediment risk factor (less than 15 tons per

acre erosion rate) and a low receiving water risk factor (receiving water is not impaired by sediment, no USEPA approved TMDL for sediment applies, nor are its beneficial uses "Spawning, Reproduction, and/or Early Development" [SPWN], "Cold Freshwater Habitats" [COLD], or "Migration of Aquatic Organisms" [MIGRATORY]).

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the proposed project will be in compliance with State water quality standards. The most common federal permit triggering 401 Certification is a CWA Section 404 permit, issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may prescribe a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act). WDRs may specify the inclusion of additional project features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

REGIONAL AND LOCAL REQUIREMENTS

All work on the proposed project will occur within the City's jurisdiction. The proposed project's estimated 38 acres of disturbance that will discharge into an area covered by the MS4 Permit is a regulated project under the Colorado River Basin RWQCB's New Development/Significant Redevelopment requirements. To comply with these requirements, the City requires that the proposed project incorporate a combination of Structural and Non-Structural Source Control BMPs discussed in SWMP Section 4.2.1, and may include Protection of Slopes and Channels, and Common Area Litter Control (respectively, and where applicable and feasible). The proposed Structural and Non-Structural Source Control BMPs will be documented in the proposed project's plans through conditions of approval or building/grading permit conditions (Riverside County Phase I Stormwater Permittees, 2015). During construction, compliance with the CGP will be required for the entire DSA and staging areas.

Antidegradation Policy

The SWRCB adopted an antidegradation policy (SWRCB Resolution No. 68-16) per the CWA (40 CFR 131.12), which requires that existing high quality waters are maintained unless:

> "When other factors result in the degradation of water quality beyond the levels or limits established herein as water quality objectives, the controllable factors shall not cause further degradation of water quality" (Colorado River Basin RWQCB, 2024).

The federal and state policies require that the existing instream uses and the level of water quality necessary for protection of the uses is maintained and protected. A reduction in water quality is permitted only if the reduction is necessary to accommodate important economic or social development.

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AFFECTED ENVIRONMENT

POPULATION AND LAND USE

The City's estimated population is 45,218 (U.S. Census Bureau, 2023). In the City's General Plan Figure 2-2 Land Use Map, the areas that surround the proposed project are designated as Regional Business Center, Open Space – Water, Wind Energy Overlay, Open Space – Conservation (1 dwelling unit [du]/20 acres [ac]), Desert (1 du/10 ac), and Special Policy Area (2014). No wildlife refuges or ecological reserves were identified within the proposed project area.

EXISTING TOPOGRAPHY, DRAINAGE CONDITIONS AND FACILITIES

The existing topography within the proposed project boundary slopes from north to south on Indian Canyon Drive and west to east within the Union Pacific Railroad's jurisdiction. Indian Canyon Drive elevation changes from approximately 678 feet to 617 feet, which is a change of approximately 61 feet (Google Earth, 2025). The Union Pacific Railroad elevation changes from approximately 686 feet to 672 feet, which is a change of approximately 14 feet (Google Earth, 2025). A majority of Indian Canyon Drive either sheet flows to the pervious areas adjacent to both sides of the roadway, or has existing curbs, gutters, and culverts to capture flows within the proposed project area.

REGIONAL AND LOCAL HYDROLOGY

The proposed project is located in the Whitewater River Watershed, which is located within the Colorado River Basin RWQCB's jurisdiction. It discharges to Chino Canyon Creek and Whitewater River through existing culverts and sheet flow. The Indian Canyon Drive Bridge will be installed over Chino Canyon Creek and Whitewater River, which flow southeast and confluence about two miles downstream of the proposed project. The Whitewater River flows southeast and transitions into the Coachella Valley Stormwater Channel about 20 miles downstream at the irrigation channel about 0.25 miles upstream of the Fred Waring Drive Bridge in Indio. The Coachella Valley Stormwater Channel flows east and then south about 19 miles and discharges into the Salton Sea. The Salton Sea does not have an outlet.

Precipitation and Climate

The average annual precipitation near the proposed project is about 4.84 inches (U.S. Department of Commerce National Oceanic and Atmospheric Administration National Weather Service, 2025). Overall, the desert climate in the region typically has hot, dry summers, and cool winters. Most rainfall occurs in the region during winter, early spring, and occasional monsoon showers during the summer. The average annual high temperature is 89 degrees Fahrenheit, and the average low temperature is 60 degrees Fahrenheit (U.S. Climate Data).

Floodplains

The Federal Emergency Management Agency (FEMA) identifies that the proposed project is located in the following areas:

- Zone A: Includes areas in which no base flood elevations have been determined.
- Zone AE: Includes areas in which base flood elevations have been determined.
- Zone X: Includes areas of 0.2 percent annual chance flood, areas of one percent annual chance flood with average depths of less than one foot or with drainage areas less than one square mile, and areas protected by levees from one percent annual chance flood (FEMA, 2008).

Based on the information currently available, the proposed project will impact or encroach on the 100-year floodplain or floodway.

Municipal Supply

According to the Caltrans *2025-2026 District 8 Annual Work Plan*, there are no high risk areas (highway locations where spills or other releases from District-owned ROW, roadways, or facilities may discharge directly to municipal or domestic water supply reservoirs or ground water percolation facilities) located within the proposed project (Caltrans, 2024).

Groundwater Resources

The California Department of Water Resources Sustainable Groundwater Management Act map shows that the proposed project is located within the Colorado River Region – Coachella Valley-Indio Groundwater Basin 7-021.01 (2006). Data from a water well in the vicinity of the proposed project (approximately one mile east of the proposed project, near the intersection of 20th Avenue and Little Morongo Road in the City of Desert Hot Springs) indicates that groundwater depth is approximately 170.7 feet (data collected on October 25, 2024, and cited on the map on May 22, 2025). In addition, a groundwater recharge area is located about two miles west of the proposed project. Constructing the bridge will require underground excavation, and based on the information currently available, dewatering may be required. Confirmation of dewatering will be determined when the geotechnical analysis is performed during the final design phase.

SOILS/EROSION POTENTIAL

The Soil Erodibility Factor (K factor) for the proposed project is 0.1 according to the 2022 Construction Stormwater General Permit Soil Erodibility (K) Factor Map Tool soil erodibility (K) data (WQAR Appendix). Generally, this equates to a low potential for erosion within the proposed project area and characterized by high infiltration resulting in low runoff, although these particles are easily detached. However, this is a planning-level tool (i.e., it has a low accuracy rate for local site conditions), so a detailed site-specific survey will be required for the final design phase analysis.

BIOLOGICAL COMMUNITIES

A *Natural Environment Study* (NES), *Aquatic Resources Delineation Report* (ARDR), *Burrowing Owl Survey Report*, and *Special-Status Plant Survey Report* have been prepared for the proposed project. The Biological Study Area (BSA) was determined by using a 100-foot buffer from the centerline of Indian Canyon Drive for the ARDR and special-status plant survey, and a 500-foot buffer from the centerline of Indian Canyon Drive for the burrowing owl survey. The BSA is within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and within the CVMSHCP Whitewater Floodplain Conservation Area. The CVMSHCP has prescribed conservation objectives for the Whitewater Floodplain Conservation Area related to the preservation of habitat for covered plant and animal species and the preservation of wildlife movement linkages.

Aquatic Habitat

Based on the ARDR, two ephemeral drainages cross the BSA, the Whitewater River and Chino Canyon Creek. The Whitewater River flows from San Gorgonio Mountain in the San Bernardino Mountains southeast through the BSA, then through the Coachella Valley cities before terminating at the Salton Sea. Chino Canyon Creek flows east from the San Jacinto Mountains through the BSA, until its confluence with the Whitewater River downstream of the BSA. The BSA supports 3.87 acres of non-wetland waters of the U.S. under the jurisdiction of the U.S.

Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA), 3.87 acres of non-wetland waters of the state under the jurisdiction of the California Regional Water Quality Control Board, Colorado River Basin Region (Colorado River Basin RWQCB) pursuant to Section 401 of the CWA and Porter-Cologne Water Quality Control Act, and 5.33 acres of unvegetated streambed under California Department of Fish and Wildlife (CDFW) jurisdiction pursuant to Sections 1600 et seq. of the California Fish and Game Code.

Due to the open space areas of the Whitewater River and Chino Canyon Creek, a variety of wildlife are expected to utilize these areas as an east-west travel route. Although Indian Canyon Drive is a four-lane arterial road, it is situated at-grade with the surrounding land and not considered a complete barrier to wildlife movement. There are no obstacles such as fencing or a tall center median that prevent animals from crossing the road.

Special Status Species

The literature review conducted as part of the NES found a total of 86 special-status plant species recorded in the region. Of these 86 special-status plant species, one has the potential to occur, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) due to the presence of suitable habitat and known locations in the area. The remaining species are not expected to occur due to the lack of suitable habitat. Focused special-status plant surveys were conducted focusing primarily on Coachella Valley milk-vetch. The focused surveys did not find this species within the BSA. Additionally, Coachella Valley milk-vetch is a covered species under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

Of the 41 special-status wildlife species recorded in the region, 15 have the potential to occur within the BSA. The remaining 26 species are not expected to occur due to the lack of suitable habitat. Of the 15 species with potential to occur, six species are covered for take under the CVMSHCP, Coachella Valley fringe-toed lizard (*Uma inornata*), flat-tailed horned lizard (*Phrynosoma mcallii*), burrowing owl (*Athene cunicularia*), LeConte's thrasher (*Toxostoma lecontei*), Palm Springs pocket mouse (*Perognathus longimembris bangsi*), and Palm Springs round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*). Focused surveys were conducted for burrowing owl pursuant to established protocol and none were detected within the BSA. The remaining nine wildlife species with potential to occur include Crotch's bumble bee (*Bombus crotchii*) (foraging only, no nesting habitat), coast horned lizard (*Phrynosoma blainvilii*), California glossy snake (*Arizona elegans occidentalis*), golden eagle (*Aquila chrysaetos*) (foraging only, no nesting habitat), loggerhead shrike (*Lanius ludovicianus*) (foraging only, no nesting habitat), pallid bat (*Antrozous pallidus*) (foraging only, no roosting or breeding habitat), Townsend's big-eared bat (*Corynorhinus townsendii*) (foraging only, no roosting or breeding habitat), western yellow bat (*Lasiurus xanthinus*) (foraging only, no roosting or breeding habitat), and pocketed free-tailed bat (*Nyctinomops femorosaccus*) (foraging only, no roosting or breeding habitat).

Stream/Riparian Habitats

Portions of two ephemeral drainage features occur within the BSA, Whitewater River and Chino Canyon Creek. These aquatic features supported little to no vegetation. Where vegetation occurred it consisted of sparse upland, non-native species. No riparian habitat occurs within the BSA.

Wetlands

Portions of two ephemeral drainage features occur within the BSA, Whitewater River and Chino Canyon Creek. Results of the ARDR determined that these aquatic features do not support wetlands. The BSA supports 3.87 acres of non-wetland waters of the U.S./waters of the State

under the jurisdiction of the USACE/Colorado River Basin RWQCB and 5.33 acres of unvegetated streambed under CDFW jurisdiction.

Fish Passage

The BSA does not contain any suitable aquatic habitat to support migrating fish or fish passage.

WATER QUALITY OBJECTIVES/STANDARDS AND BENEFICIAL USES

The RWQCB is responsible for the protection of beneficial uses of water resources within its jurisdiction and uses planning, permitting, and enforcement authorities to meet this responsibility. Every water body within the jurisdiction of the Colorado River Basin RWQCB is designated a set of beneficial uses that are protected by appropriate water quality objectives and identified in the Colorado River Basin RWQCB's *Water Quality Control Plan for the Colorado River Basin Region* (Basin Plan) (August 20, 2024). Per the Basin Plan, the proposed project is located in the Whitewater River Watershed Hydrologic Sub-Area of the West Colorado River Basin's Coachella Valley Planning Area, which includes the Chino Canyon Creek and Whitewater River. Furthermore, the Basin Plan notes that the proposed project is also located in the Coachella Valley groundwater basin (Number 7-21) and does not have beneficial uses identified for those groundwaters. The table below summarizes the beneficial uses of the surface and groundwater waterbodies as designated by the Basin Plan.

Table 1: Surface Water Beneficial Uses

Beneficial Use Type	Chino Canyon Creek Status of Beneficial Uses	Whitewater River Watershed Hydrologic Sub-Area Status of Beneficial Uses
Municipal and Domestic Supply (MUN) – Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.	Existing	Existing
Agricultural Supply (AGR) – Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.	None	Existing
Ground Water Recharge (GWR) – Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting salt water intrusion into fresh water aquifers.	Existing	Existing
Water Contact Recreation (REC-1) – Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing and use of natural hot springs.	Potential	Existing
Non-Contact Water Recreation (REC-2) – Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.	Existing	Existing
Warm Freshwater Habitat (WARM) – Uses of water that support warm water ecosystems including, but not limited to, preservation and enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.	Existing	Intermittent

Beneficial Use Type	Chino Canyon Creek Status of Beneficial Uses	Whitewater River Watershed Hydrologic Sub-Area Status of Beneficial Uses
Cold Freshwater Habitats (COLD) – Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.	None	Existing
Wildlife Habitat (WILD) – Uses of water that support terrestrial ecosystems including, but not limited to, the preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.	Existing	Existing
Hydropower Generation (POW) – Uses of water for hydropower generation.	None	Existing

Impaired Waterbodies

Section 303 of the CWA requires that the state adopt water quality objectives for surface waters. The Basin Plan contains water quality objectives that are considered necessary to protect the specific beneficial uses it identifies for surface waters. Section 303(d) of the CWA specifically requires the state to develop a list of impaired water bodies and Total Maximum Daily Loads (TMDLs), which are plans to determine the maximum allowable pollutant load that a water body can receive and continue to meet the designated beneficial uses. The following table summarizes the receiving water bodies that the proposed project will discharge to and their impairments (303(d) List, Some Uses May Be Potentially Threatened, and TMDL Constituents), from its initial discharge to a receiving water body and following the flow downstream to the Salton Sea. Table 2 shows the downstream water bodies that could potentially be impacted by the proposed project in their order of contact from the proposed project enroute to the Salton Sea.

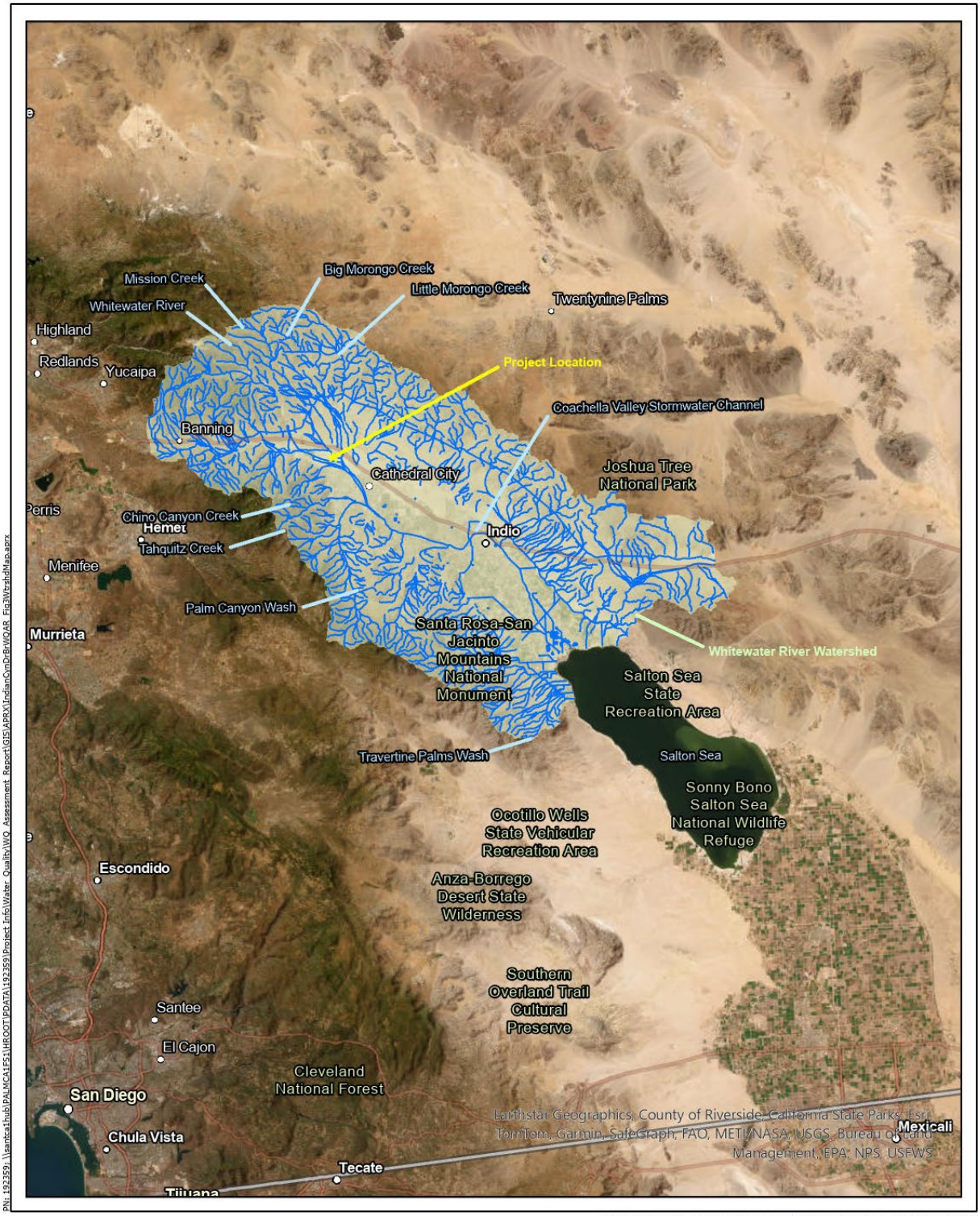
Table 2: Water Body Impairments

Water Body Name	303(d) List Constituent[1]	More Information Needed – Some Uses May Be Potentially Threatened[2]	TMDL Constituent[3]
Chino Canyon Creek	None	None	None

[1] California SWRCB Category 5 2024 California 303(d) List of Water Quality Limited Segments website, https://www.waterboards.ca.gov/water_issues/programs/tmdl/2023_2024state_ir_reports/apx-c-category-reports/category5_report.shtml.
[2] California SWRCB Category 3 2024 California Waters with Insufficient Information to Assess Beneficial Use Support But Some Uses May Be Potentially Threatened website, https://www.waterboards.ca.gov/water_issues/programs/tmdl/2023_2024state_ir_reports/apx-c-category-reports/category3_report.shtml.
[3] Colorado River Basin RWQCB TMDLs website, https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/tmdl/.

Water Body Name	303(d) List Constituent[1]	More Information Needed – Some Uses May Be Potentially Threatened[2]	TMDL Constituent[3]
Whitewater River	None	Aluminum, Ammonia, Arsenic, Benthic Community Effects, Boron, Bromide, Cadmium, Chloride, Chromium, Copper, Dissolved Oxygen, Fluoride, Indicator Bacteria, Iron, Lead, Manganese, Nickel, Nitrate/Nitrite (Nitrite + Nitrate as N), Nitrogen as Nitrate, Nitrogen as Nitrite, pH, Selenium, Silver, Sodium, Specific Conductivity, Sulfates, Total Dissolved Solids, Turbidity, and Zinc	None
Coachella Valley Storm Channel	Ammonia, Dichlorodiphenyltrichloroethane (DDT), Dieldrin, Disulfoton, Indicator Bacteria, Dissolved Oxygen, Polychlorinated biphenyls (PCBs), Toxaphene, and Toxicity	None	PCBs and Legacy OC Pesticides, and Bacterial Indicators
Salton Sea	Ammonia, Arsenic, Chloride, Chlorpyrifos, Dichlorodiphenyldichloroethylene, DDT, Enterococcus, Low Dissolved Oxygen, Nutrients, Salinity, and Toxicity	None	None

Figure 3 shows the location of the proposed project within the Whitewater River Watershed.



WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECTS – PHASE ONE – INDIAN CANYON DRIVE

Watershed Map

Figure 3

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ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This proposed project will prioritize maintaining existing drainage patterns and storm drain systems to the maximum extent practicable. The proposed project will have a DSA of 1.0 acre or more and will be required to obtain coverage under the CGP. In addition, the proposed project will be subject to post-construction treatment control requirements as part of the Riverside County Whitewater River Watershed NPDES Permit (Permit No. R7-2013-0011). As such, post-construction BMPs will be proposed where feasible in compliance with the Riverside County Whitewater River Watershed NPDES Permit's New Development/Redevelopment Program.

PROJECT FEATURES/STANDARDIZED MEASURES

The following project features/standardized measures implemented by the proposed project to address permit requirements will minimize temporary or permanent water quality (WQ) impacts created by the proposed project. These measures are taken into consideration prior to determining the proposed project's impacts:

PF-WQ-1 The proposed project will comply with the provisions of the *Waste Discharge Requirement for Discharges from the Municipal Separate Storm Sewer System (MS4) within the Whitewater River Watershed Riverside County Flood Control and Water Conservation District, Owner/Operator County of Riverside, Owner/Operator Coachella Valley Water District, Owner/Operator and Incorporated Cities of Riverside County within the Whitewater River Basin, Owners/Operators* (Order No. R7-2013-0011, NPDES No. CAS617002) and the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities* (Order No. WQ 2022-0057-DWQ, NPDES No. CAS000002), and any subsequent permits in effect at the time of design and/or construction.

PF-WQ-2 A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared in compliance with the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities* (Order No. 2022-0057-DWQ, NPDES No. CAS000002), and any subsequent permits in effect at the time of design and/or construction. The SWPPP will be implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and include the construction site BMPs to control pollutants such as catch basin inlet protection and non-stormwater Best Management Practices (BMPs). These include, but are not limited to temporary soil stabilization, scheduling, waste management, materials handling, and other non-stormwater BMPs. All work must conform to the Construction Site BMP requirements specified in the latest edition of the California Stormwater Quality Association Construction BMP Handbook (January 2024 or latest version) or City of Palm Springs construction-specific guidance if available to control and minimize the impacts of construction and construction related activities, material and pollutants on the watershed.

PF-WQ-3 If dewatering is required, construction site dewatering must comply with Attachment J of the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities* (Order No. 2022-0057-DWQ, NPDES No. CAS000002). Attachment J's requirements address temporary dewatering operations during construction. Monitoring and reporting on the discharges must comply with the Attachment J discharge requirements.

POTENTIAL IMPACTS TO WATER QUALITY

Since the proposed project is a bridge installation project, the expected pollutants of concern that will impact water quality are suspended solids/sediment, nutrients, heavy metals, pathogens, oil and grease, toxic organic compounds, and trash and debris. To avoid and minimize impacts, temporary construction BMPs and post-construction BMPs will be implemented where feasible.

Anticipated Changes to the Physical/Chemical Characteristics of the Aquatic Environment

Substrate

Constructing the proposed project is anticipated to change the streambed sediment of Chino Canyon Creek and the Whitewater River, which are a soft bottom creek and river, respectively. The proposed project will install bridge footings and retaining walls in the substrate but also provide an undercrossing to facilitate the flow of floodwater, sand, and wildlife.

Currents, Circulation or Drainage Patterns

The proposed project area currently sheet flows to Chino Canyon Creek and the Whitewater River, which will continue post-construction. The only change to existing drainage patterns will be an increase in elevation for the bridge portion of the proposed project. In addition, the proposed project will result in an increase in impervious surface area (4.24 acres) due to the new 1.6-mile bicycle lane on Indian Canyon Drive and Palm Springs Station Road, as well as paving Granite Access Road that will result in an increase in flow.

Suspended Particulates (Turbidity)

Due to the construction and maintenance of the proposed project, sediment is likely to occur, particularly while the proposed project is constructed. The turbidity in downstream water bodies may increase due to construction of the new bridge.

Oil, Grease and Chemical Pollutants

Since the proposed project involves constructing a new bridge for vehicular traffic, oil, grease, metals, and chemical pollutants may impair downstream water bodies.

Temperature, Oxygen, Depletion and Other Parameters

The proposed project does not include landscaped areas. Therefore, no oxygen depletion and no rise in temperature is anticipated.

Flood Control Functions

According to the *CVAG Flood and Blow Sands Improvements Project for Indian Canyon Drive Hydraulic Basis of Design Report – Stage 2 Project Limits: Indian Canyon Drive from Palm*

Springs Road to Sunrise Parkway in the City of Palm Springs report, the proposed project will introduce abutments within the 100-year floodplain and modeling shows it is unlikely that the floodplain will experience any channel incision or long term scour due to the narrowing of the floodplain since the proposed abutments will only shift the concentrated flow along the northern and southern sections inward toward the middle of the floodplain without necessarily narrowing the flow path across the site (Michael Baker International, 2025). The concentration of flow from the proposed project will sheet flow and discharge directly to Chino Canyon Road and the Whitewater River. Regionally, the area is rural with regional commercial and open space neighboring the proposed project, and it participates in the National Flood Insurance Program.

Storm, Wave and Erosion Buffers

No wetlands are within the proposed project's area of potential effect. Therefore, no changes to storm, wave and erosion buffers are anticipated.

Erosion and Accretion Patterns

It is not anticipated that the proposed project will cause a change to erosion and accretion patterns. The exposed soil areas will be stabilized with temporary pollution control materials during the construction phase, and stabilization measures such as sediment controls and erosion controls will be implemented once the proposed project is completed to meet the CGP's project closeout requirements.

Aquifer Recharge/Groundwater

No aquifer recharge basins are within the proposed project's area of potential effect, but a groundwater recharge basin is located about two miles west of the proposed project. Based on the currently available information, excavation will be required during construction of the proposed new bridge and groundwater may be encountered.

Baseflow

Baseflow is the result of groundwater entering mountain and desert washes that cross many geologic strata. No current data on a baseflow measurement for the Whitewater River could be identified. No baseflow changes are anticipated because of the proposed project.

Anticipated Changes to the Biological Characteristics of the Aquatic Environment

Special Aquatic Sites

Portions of two ephemeral drainage features occur within the BSA, Whitewater River and Chino Canyon Creek. Results of the ARDR determined that these aquatic features do not support wetlands or other special aquatic sites.

Habitat for Fish and Other Aquatic Organisms

Fish Passage (Beneficial Uses)

The BSA does not support habitat for fish passage.

Wildlife Habitat

The BSA supports three vegetation communities and land cover types: disturbed *Ambrosia salsola-Bebbia juncea* shrubland alliance, ephemeral desert sand fields, and developed. None of these are considered sensitive natural communities; however, disturbed *Ambrosia salsola-*

Bebbia juncea shrubland alliance and ephemeral desert sand fields provide habitat for a variety of wildlife.

Wildlife Passage (Beneficial Uses)

The BSA provides local wildlife movement opportunities due to the open and relatively unfragmented land between I-10 and Sunrise Parkway. The Whitewater River and Chino Canyon Creek provide an east-west travel route for a variety of wildlife species including species dependent upon sandy and shrub habitats such as Palm Springs pocket mouse and Coachella Valley fringe-toed lizard. Although Indian Canyon Drive is a four-lane arterial road, it is situated at-grade with the surrounding land and not considered a complete barrier to wildlife movement. There are no obstacles such as fencing or a tall center median that prevent animals from crossing the road.

The BSA does not occur within a CVMSHCP designated wildlife linkage or biological corridor; however, it is approximately 1.5 miles east of the Whitewater River Biological Corridor and 1.0 mile west of the Mission Creek Biological Corridor. The BSA is also within the CVMSHCP Whitewater Floodplain Conservation Area which includes a conservation measure to ensure that wildlife movement opportunities exist during long-term operation of the proposed project. As a result, the project vicinity provides important natural habitat between the two corridors.

Endangered or Threatened Species

Three federally and/or state-listed plant and animal species have the potential to occur within the BSA: Coachella Valley milk-vetch (federally endangered), Coachella Valley fringe-toed lizard (federally threatened, state endangered), and Crotch's bumble bee (state candidate endangered). Focused surveys for Coachella Valley milk-vetch did not detect this species and no impacts are expected to occur. Coachella Valley fringe-toed lizard is assumed to be present within the BSA and the proposed project may affect this species. Crotch's bumble bee may utilize floral resources within the BSA for foraging but is not expected to nest in the BSA and no impacts are expected.

Invasive Species

Six plant species non-native to California that are classified as invasive by the California Invasive Plant Council were observed within the BSA: stinknet (*Oncosiphon pilulifer*), Tournefort's mustard (*Brassica tournefortii*), shortpod mustard (*Hirschfeldia incana*), prickly Russian thistle (*Salsola tragus*), redstem stork's bill (*Erodium cicutarium*), and common Mediterranean grass (*Schismus barbatus*). Adherence to the terms and conditions of the CVMSHCP including the Avoidance, Minimization, and Mitigation Measures set in CVMSHCP Section 4.4 and the Land Use Adjacency Guidelines set in CVMSHCP Section 4.5 would ensure compliance with U.S.E.O. 13112.

Anticipated Changes to the Human Use Characteristics of the Aquatic Environment

Existing and Potential Water Supplies/Water Conservation

Since there are no high risk areas (highway locations where spills or other releases from Caltrans-owned ROW, roadways, or facilities may discharge directly to municipal or domestic water supply reservoirs or ground water percolation facilities) located within the proposed project, no changes to existing and potential water supplies are anticipated.

Recreational or Commercial Fisheries

Since no recreational or commercial fisheries are located within or near the proposed project, no changes to these human uses are anticipated.

Other Water Related Recreation

No changes to other water related recreation in the aquatic environment are anticipated.

Aesthetics of the Aquatic Ecosystem

The BSA consists of portions of ephemeral aquatic features, Chino Canyon Creek and Whitewater River, and only support surface water flow during storm events. The proposed project would create a bridge over Chino Canyon Creek and a portion of the Whitewater River, allowing surface water and blowsand to flow more naturally, providing a benefit to the ecosystem. In addition, a new flood wall will be installed near the existing levee at the southern end of the proposed project.

Parks, National and Historic Monuments, National Seashores, Wild and Scenic Rivers, Wilderness Areas

Since no parks, national monuments, historic monuments, national seashores, wild and scenic rivers, or wilderness areas are located within or near the proposed project, no changes to these uses are anticipated.

Traffic/Transportation Patterns

During the construction period, temporary lane closures may be required, which could result in delays on Indian Canyon Drive. However, because of the limited duration of construction activities in a given area along the proposed project's alignment, such closures would affect only a small portion of Indian Canyon Drive at a particular time. Additionally, work that requires roadway closures, such as falsework and structure demolition, would occur mostly during non-peak commute hours, at night, or on weekends. Access to local roads, the Amtrak Station, and neighborhoods, would be maintained at all times during construction. Furthermore, at least one lane would remain open on Indian Canyon Drive in both directions for the duration of construction. As such, delays are not expected to be substantial. Access to all properties along Indian Canyon Drive would be maintained throughout the construction period.

Following the construction period, transit via Indian Canyon Drive and the local City roads will improve due to the new bridge. The operation of public transportation within the proposed project area would not be impacted. Any changes to transit service as a result of implementing the proposed project would be negligible. Furthermore, the proposed improvements will enhance traffic circulation to Indian Canyon Drive and access from local City roads by eliminating closures due to flooding and blowsand.

Energy Consumption or Generation

The proposed project includes installation of solar panels at Amtrak's Palm Springs Station and an EV charging station. These proposed project components will generate three megawatts of electricity and advance California's climate goals, respectively.

Navigation

No changes to navigation in the aquatic environment are anticipated.

Safety

Implementation of the proposed project will improve safety and mobility by installing a bridge to connect the northern and southern sections of Indian Canyon Drive. The proposed project will replace existing low water crossings to address safety concerns related to floodwaters and blowsand that causes frequent and prolonged road closures. These improvements will result in enhanced travel safety and reliability for all people and goods in the region. Therefore, the proposed project would improve safety in the City.

Temporary Impacts During Construction

During construction, the proposed project's DSA is approximately 38 acres, and will include the following elements:

- Clearing and grubbing
- Grading
- Constructing foundation, substructure, superstructure, retaining wall, and road improvements

Dewatering may occur during construction of the proposed project. If groundwater and any other non-stormwater dewatering activities are necessary, these activities are subject to the dewatering requirements of the CGP Attachment J. Pollutants during construction of the proposed project include:

- Sediment (from activities including, but not limited to, demolition, erosion, on-site and off-site runoff, and general construction);
- Metals (from activities including, but not limited to, equipment storage);
- Trash (from activities including, but not limited to, general construction and waste management);
- Petroleum products (from activities, including but not limited to, equipment storage);
- Concrete waste (dry and wet) (from activities, including but not limited to, demolition, construction, and general construction);
- Sanitary waste (from activities including, but not limited to, general construction); and
- Chemicals (from activities including, but not limited to, general construction).

Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality during construction of the proposed project.

The proposed project will require regulatory permits from the US Army Corps of Engineers (Section 404), the Colorado River Basin RWQCB (Sections 401 and 402), and the California Department of Fish and Wildlife (1602 Streambed Alteration Agreement).

Permanent Impacts During Operation and Maintenance

The proposed project's bridge and roadway improvements will be constructed within the City's jurisdiction. The new impervious area will result in an increase in runoff and typical roadway pollutants, such as the following:

- Dissolved metals;
- Suspended solids/sediment;
- Particulate metals;
- Pathogens; and
- Litter/Trash.

Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. As traffic moves through the proposed project, vehicles could

be a source of dissolved metals through oil leaks, brake dust, exhaust, and installing electrical equipment (for solar panels and the EV charging station). Dissolved and particulate metals could directly affect the biological structure of the ecosystem through bioaccumulation in the food chain and easy absorption of small quantities by aquatic organisms. The impact of suspended solids/sediment in a downstream water body include high turbidity which decreases the amount of light that can be transmitted through the water column, therefore decreasing the ability of aquatic plants to perform photosynthesis and aquatic organisms to navigate through the water body. Trash and sanitary waste could be a source of bacteria in the physical environment. All of these pollutants in large quantities could smother and ultimately kill aquatic plants and animals.

IMPACT ASSESSMENT METHODOLOGY

The proposed project will result in increased impervious area of approximately 4.24 acres. The identified temporary construction impacts must be addressed in the SWPPP prepared for the proposed project to meet the CGP requirements. Moreover, the temporary erosion and sediment control BMPs detailed in the SWPPP must be implemented during construction. If construction BMPs are properly designed, implemented, and maintained, as presented in the Avoidance and Minimization Measures in Project Features/Standardized Measures section, then no adverse water quality impacts will occur during construction of the proposed project.

Because the proposed project consists of a new bridge installation and roadway improvements, the post-construction activities will result in a permanent increase in impervious surfaces and a permanent increase in runoff and pollutant loading. The operation and maintenance of the proposed project is subject to the requirements of the Riverside County NPDES Permit.

The BMPs that must be considered during the planning and design phase include construction site, general pollution prevention, and structural BMPs. During the proposed project's site design phase, the increase in flows and pollutant loading will be evaluated and documented per the Riverside County *Drainage Area Management Plan*'s requirements.

Since the estimated proposed project will result in a permanent increase in impervious surfaces, treatment BMPs will be required for the proposed project. Currently, stormwater runoff from within the proposed project area is untreated. As part of the proposed project, structural and nonstructural BMPs must be implemented to target the constituents of concern, as well as non-stormwater sources, in runoff from the proposed project. Where feasible, structural and nonstructural source control BMPs will be incorporated into the proposed project to maximize pollutant treatment where feasible.

CUMULATIVE IMPACTS

When the proposed project's increase in impervious surface (4.24 acres) is compared with the total watershed area (approximately 367 square miles or 234,880 acres in the Whitewater River watershed) (Riverside County Phase I Stormwater Permittees, 2015), the proposed increase in impervious surface is less than 0.00001% of the watershed area. The construction and implementation of the proposed project's increase in impervious surface could contribute to exceeding the waste load allocations in approved TMDLs and impairments in the California CWA, Section 303(d) listed downstream waterbodies. The implementation of appropriate avoidance and minimization measures, such as structural and non-structural BMPs, within the proposed project to treat pollutants should adequately address any potential cumulative impacts of constructing or long-term maintenance and operation of the proposed project.

REGULATORY REQUIREMENT SUMMARY

The table below summarizes the regulatory requirements that must be met to construct this proposed project.

Table 3: Regulatory Requirements

Regulatory Number	Regulatory Requirement	Avoidance and Minimization Measures to Address Requirement
WQ-1	NPDES Permit Requirements	The proposed project will comply with the provisions of the *Waste Discharge Requirement for Discharges from the Municipal Separate Storm Sewer System (MS4) within the Whitewater River Watershed Riverside County Flood Control and Water Conservation District, Owner/Operator County of Riverside, Owner/Operator Coachella Valley Water District, Owner/Operator and Incorporated Cities of Riverside County within the Whitewater River Basin, Owners/Operators* (Order No. R7-2013-0011, NPDES No. CAS617002) and the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities* (Order No. WQ 2022-0057-DWQ, NPDES No. CAS000002), and any subsequent permits in effect at the time of design and/or construction.
WQ-2	Preparation of SWPPP	A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared in compliance with the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities* (Order No. 2022-0057-DWQ, NPDES No. CAS000002), and any subsequent permits in effect at the time of design and/or construction. The SWPPP will be implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall identify the sources of pollutants that may affect the quality of stormwater and include the construction site BMPs to control pollutants such as catch basin inlet protection and non-stormwater Best Management Practices (BMPs). These include, but are not limited to temporary soil stabilization, scheduling, waste management, materials handling, and other non-stormwater BMPs. All work must conform to the Construction Site BMP requirements specified in the latest edition of the California Stormwater Quality Association Construction BMP Handbook (January 2024 or latest version) or City of Palm Springs construction-specific guidance if available to control and minimize the impacts of construction and construction related activities, material and pollutants on the watershed.
WQ-3	Dewatering Requirements (if needed)	If dewatering is required, construction site dewatering must comply with Attachment J of the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activities* (Order No. 2022-0057-DWQ, NPDES No. CAS000002). Attachment J's requirements address temporary dewatering operations during construction. Monitoring and reporting on the discharges must comply with the Attachment J discharge requirements.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As a result of the construction and operation of the proposed project, temporary and permanent impacts to the existing infrastructure and downstream waterbodies are anticipated. To address these impacts, avoidance and minimization measures are designated to ensure that these impacts are minimized. The following sections describe the BMPs that are applicable to the proposed project and the Avoidance and Minimization Measures identified for the proposed project.

BEST MANAGEMENT PRACTICES

Post-Construction BMPs and Runoff Reduction Measures

Post construction (structural and non-structural) BMPs and runoff reduction measures applicable to the proposed project may include, but are not limited to the following:

- Implement minimum BMPs as applicable to the proposed project
- Preservation of existing flow patterns

Temporary Construction BMPs

Temporary construction BMPs applicable to the proposed project may include, but are not limited to the following:

- Implement minimum BMPs as applicable to the proposed project
- Site Management BMPs
- Erosion Control BMPs
- Sediment Control BMPs

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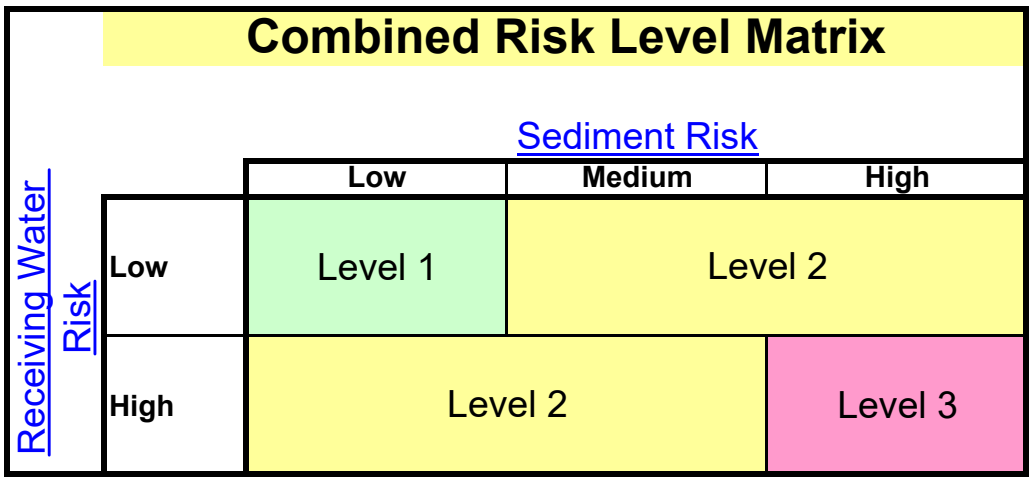
Appendix: Construction General Permit Risk Assessment

Western Coachella Valley Flooding and Blowsand Projects – Phase One – Indian Canyon Drive
Construction General Permit Risk Assessment

Sediment Risk Factor Worksheet	Entry
A) R Factor	
Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site. http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm	
R Factor Value	13.88
B) K Factor (weighted average, by area, for all site soils)	
The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted. Site-specific K factor guidance	
K Factor Value	0.1
C) LS Factor (weighted average, by area, for all slopes)	
The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction. LS Table	
LS Factor Value	1.06
Watershed Erosion Estimate (=RxKxLS) in tons/acre	1.47128
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

Western Coachella Valley Flooding and Blowsand Projects – Phase One – Indian Canyon Drive
Construction General Permit Risk Assessment

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml	**No**	**Low**
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) http://www.waterboards.ca.gov/waterboards_map.shtml		



Project Sediment Risk: **Low**
Project RW Risk: **Low**
Project Combined Risk: **Level 1**

Western Coachella Valley Flooding and Blowsand Projects – Phase One – Indian Canyon Drive
Construction General Permit Risk Assessment Supporting Documentation

Facility Information

Start Date: 06/01/2026	**Latitude:** 33.8884
End Date: 06/01/2028	**Longitude:** -116.5456

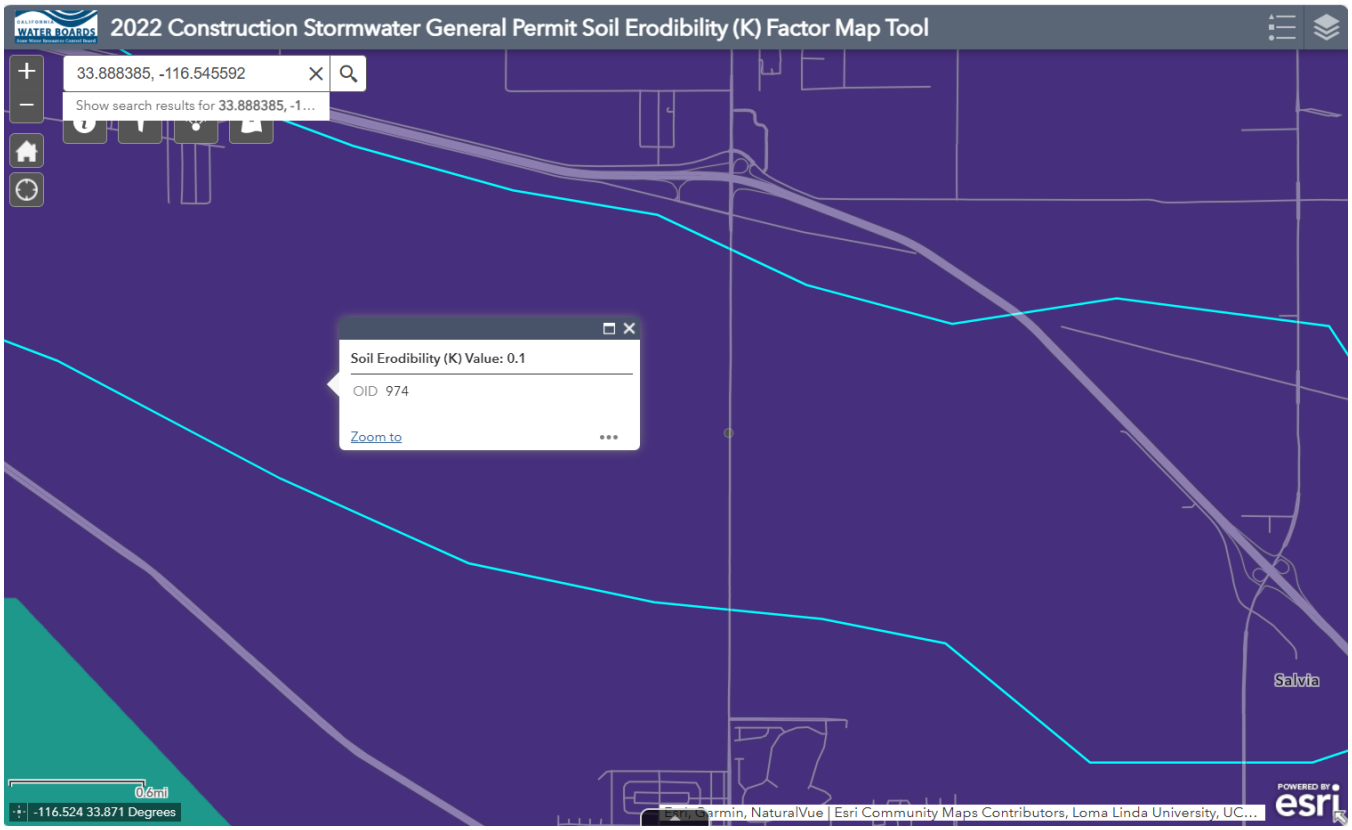
Calculation Results

Rainfall erosivity factor (R Factor) = **13.88**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

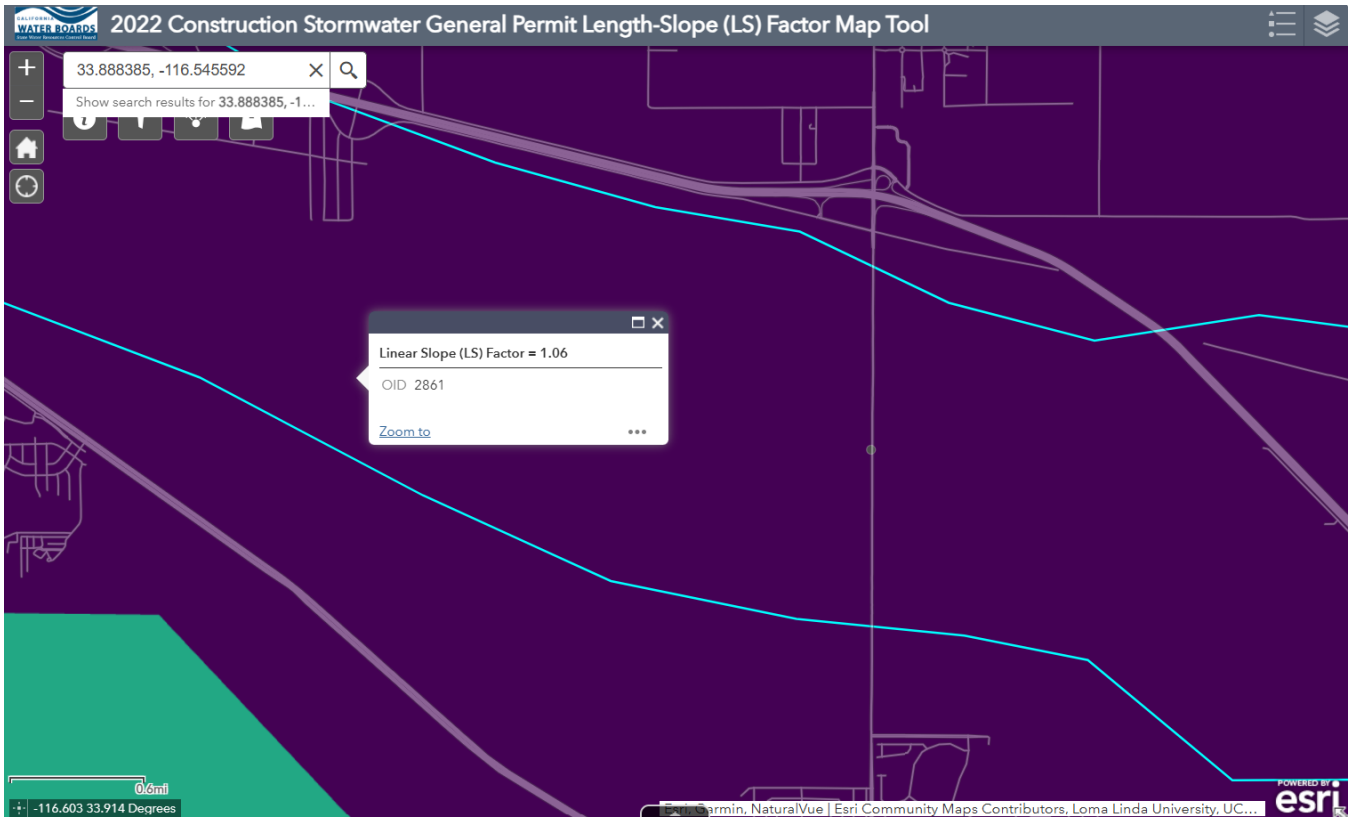
You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority (pdf), you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

EPA's Rainfall Erosivity Factor Calculator, **R Factor = 13.88**



California State Water Resources Control Board 2022 Construction Stormwater General Permit Soil Erodibility (K) Factor Map Tool, **K-Factor = 0.1** (The soil-erodibility factor (K) represents: (1) the susceptibility of soil or surface material to erosion, (2) the transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff, although these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values,

which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high runoff rates and large runoff volumes.)



California State Water Resources Control Board 2022 Construction Stormwater General Permit Length-Slope (LS) Factor Map Tool, **LS-Factor = 1.06** (The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases.)

Appendix D

Noise

Site Number: NM-1	
Recorded By: Dennis Dinh, Darshan Shivaiah	
Job Number: 192359	
Date: 11/12/2025	
Time: 10:58 a.m.	
Location: Northwest corner of the Miralon residential community	
Source of Ambient Noise: Traffic along Sunrise Parkway and Indian Canyon Drive	

Noise Data		
L_{eq} (dB)	**L_{min} (dB)**	**L_{max} (dB)**
53.5	35.3	71.0

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**06/04/2023**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**06/04/2023**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**06/04/2023**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**06/04/2023**	

Weather Data			
Est.		**Sky:** Sunny	
	Note: dBA Offset = 0.0	**Sensor Height (ft):** 5 ft	
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	4	84	29.99

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		11/12/2025 10:58:18
End Time:		11/12/2025 11:08:18
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.10

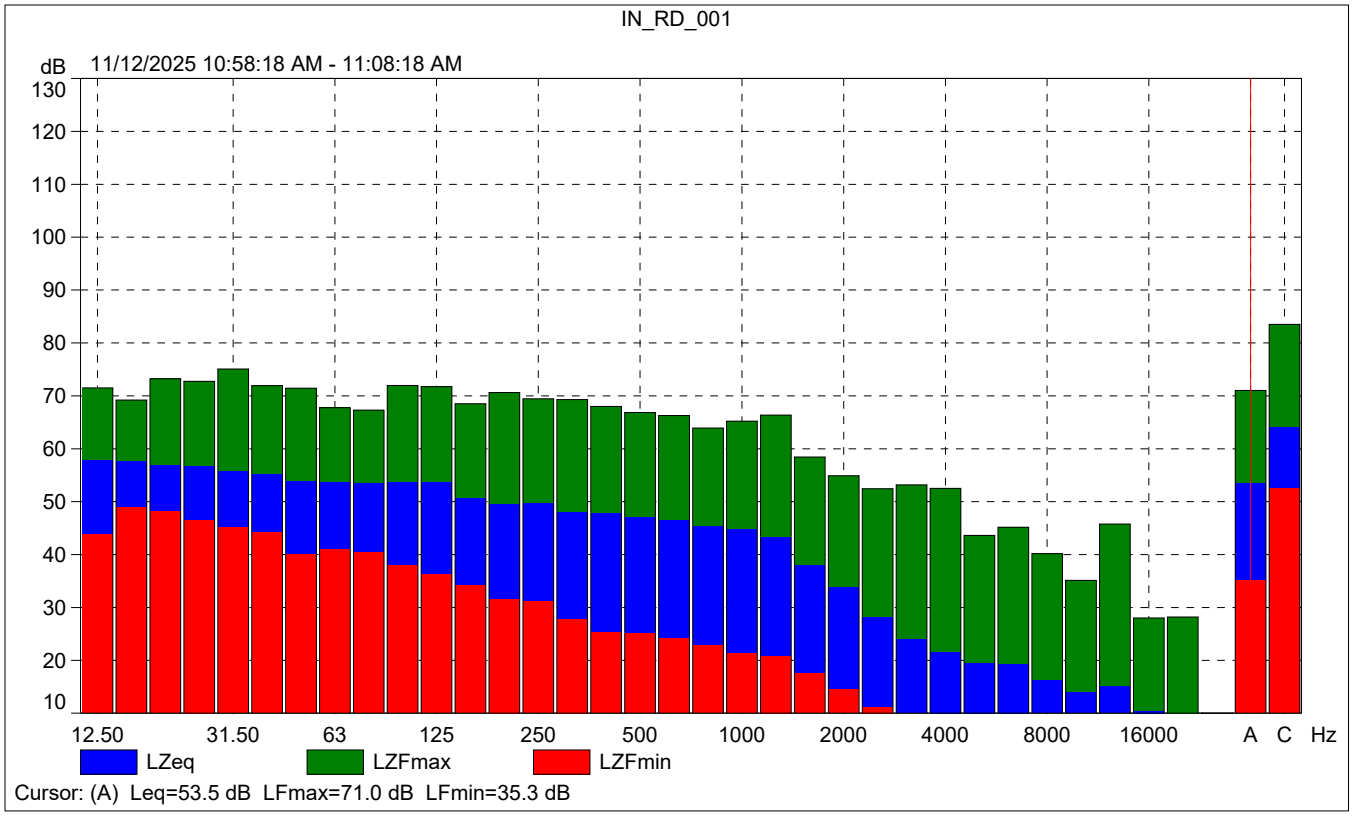
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

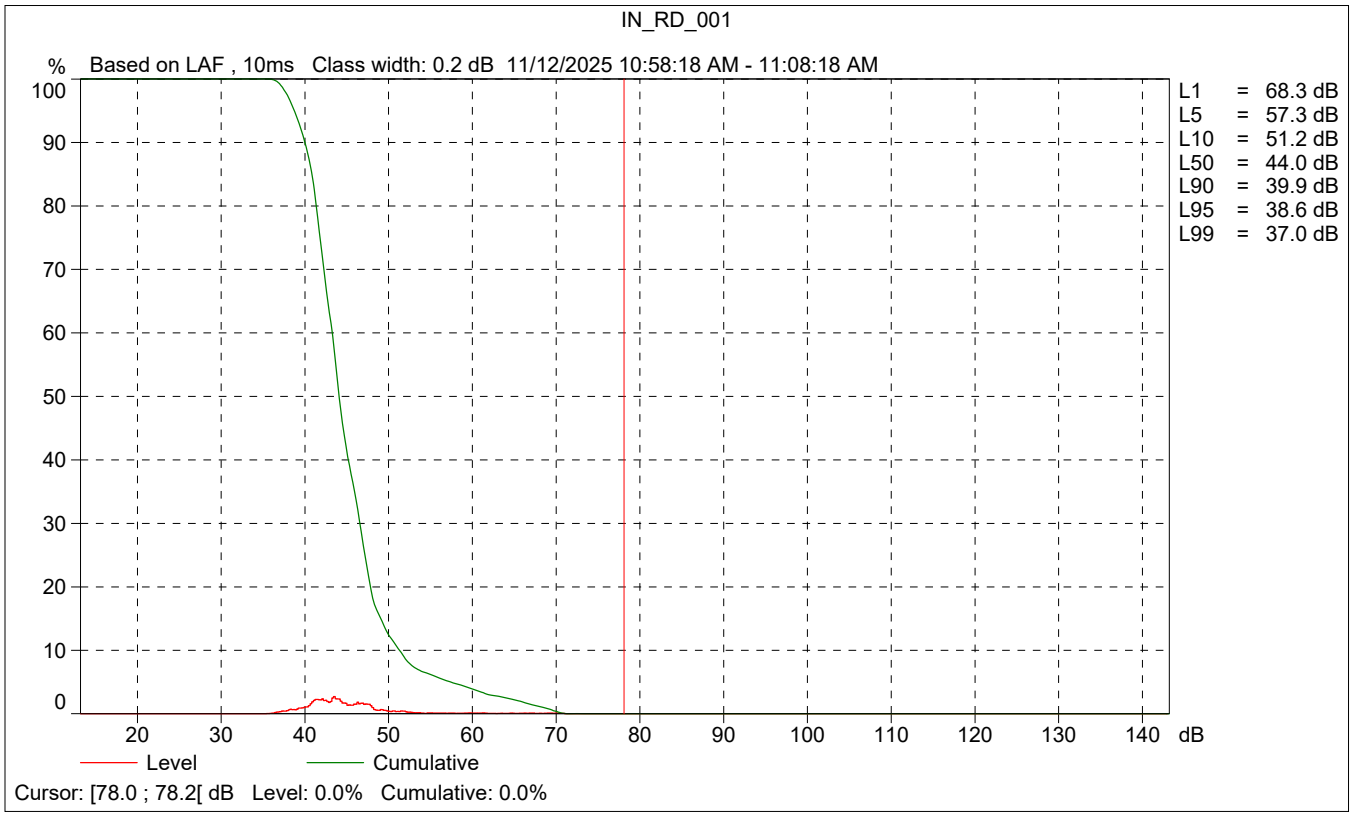
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

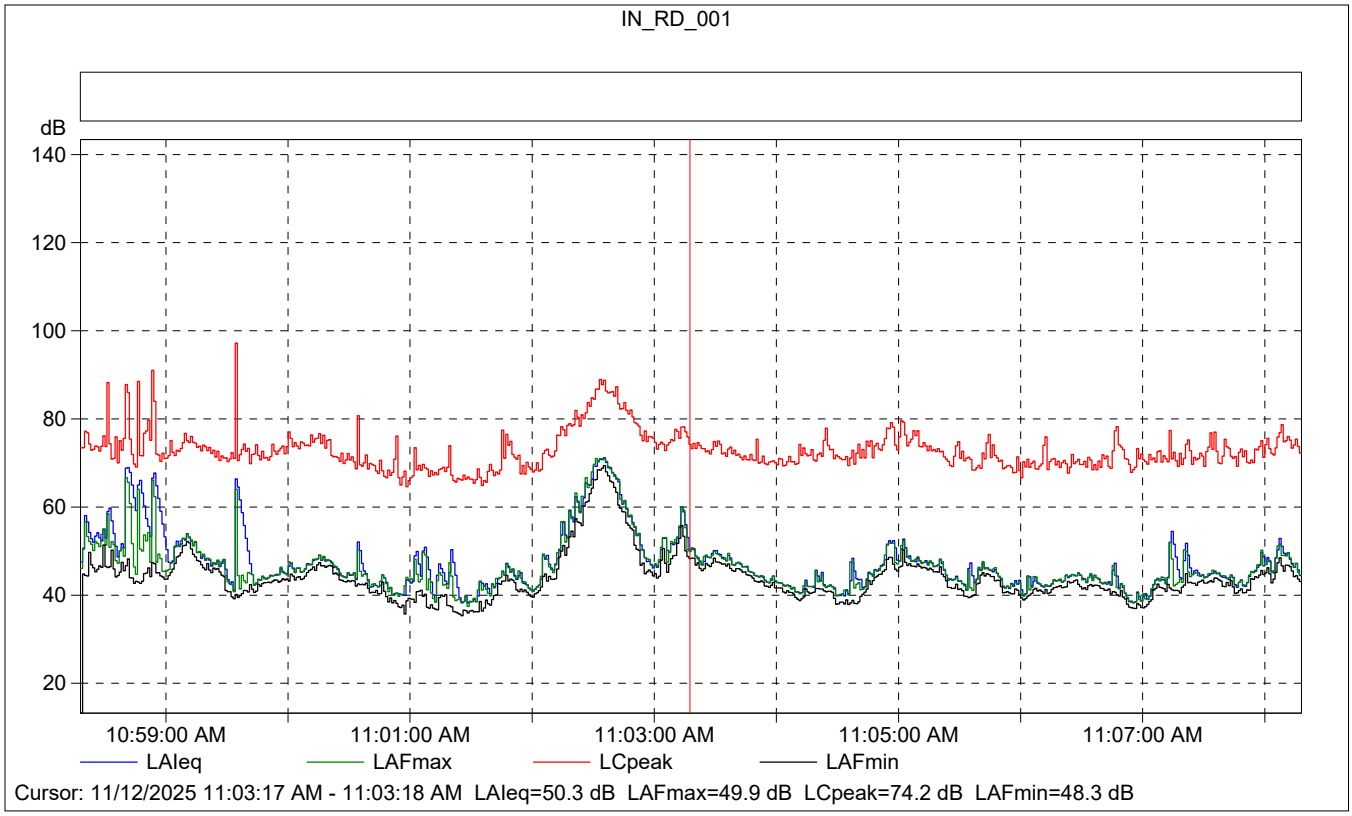
Calibration Time:		11/12/2025 10:57:36
Calibration Type:		External reference
Sensitivity:		43.7099188566208 mV/Pa

IN_RD_001

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	53.5	71.0	35.3
Time	10:58:18 AM	11:08:18 AM	0:10:00				
Date	11/12/2025	11/12/2025					

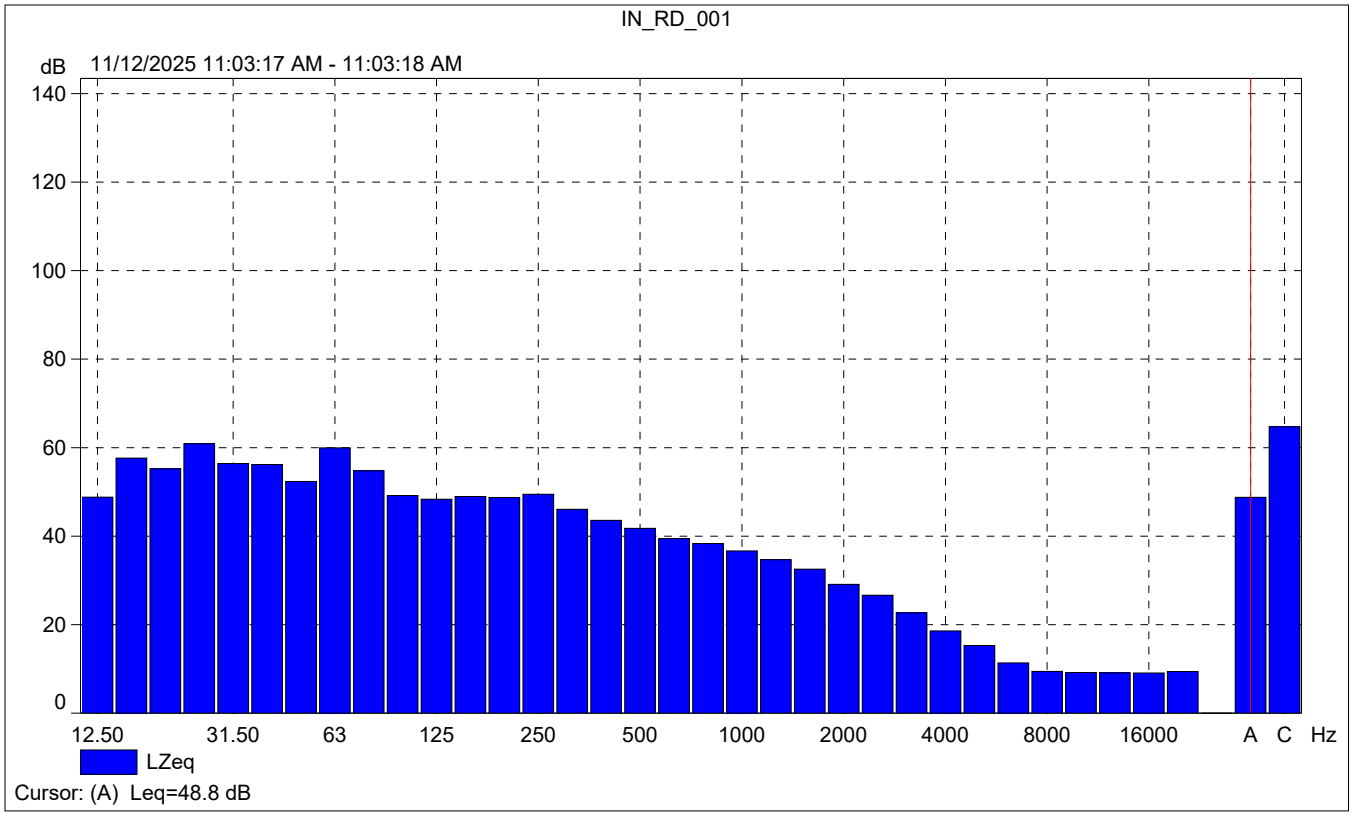

IN_RD_001
dB
11/12/2025 10:58:18 AM - 11:08:18 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=53.5 dB LFmax=71.0 dB LFmin=35.3 dB

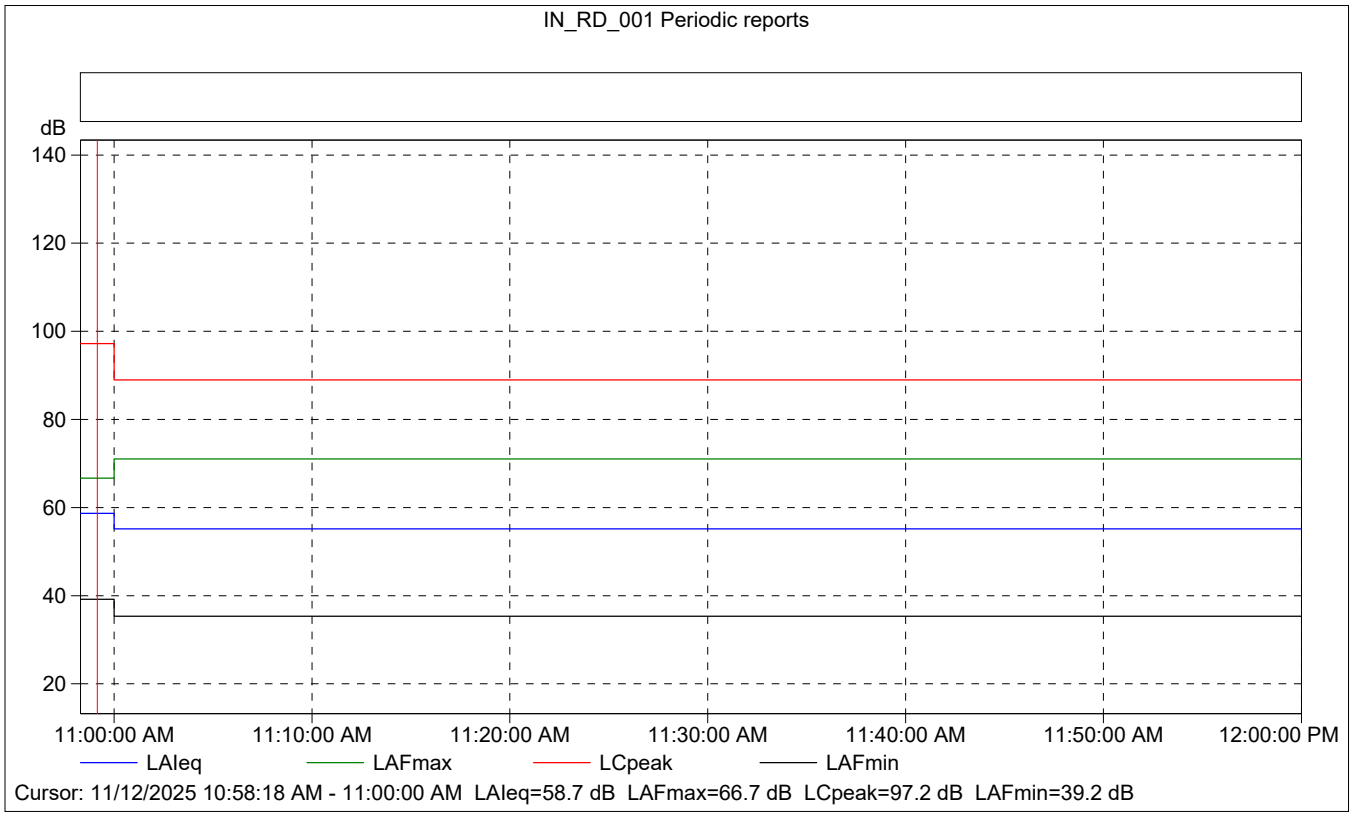

IN_RD_001
%
Based on LAF , 10ms Class width: 0.2 dB 11/12/2025 10:58:18 AM - 11:08:18 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 68.3 dB
L5 = 57.3 dB
L10 = 51.2 dB
L50 = 44.0 dB
L90 = 39.9 dB
L95 = 38.6 dB
L99 = 37.0 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%



IN_RD_001

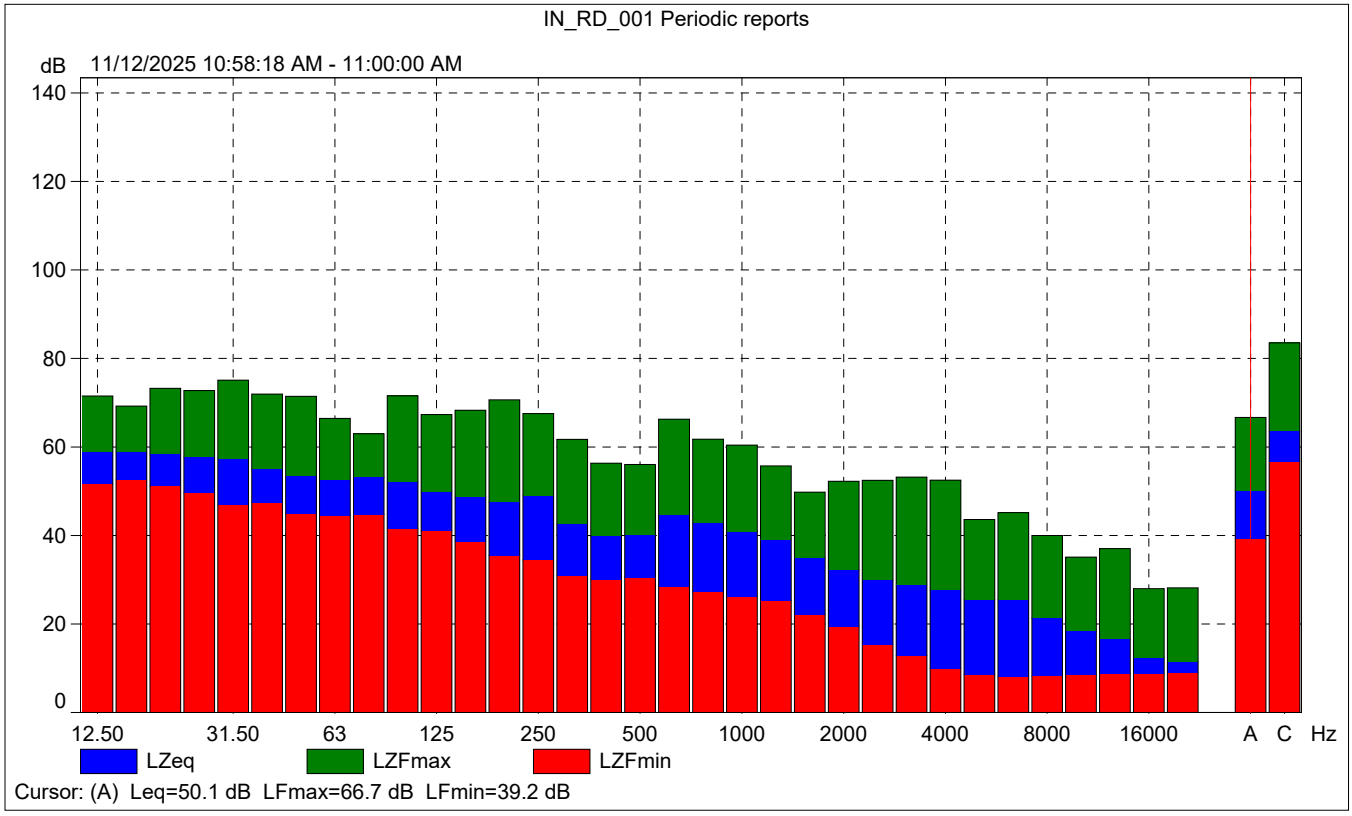
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	50.3	49.9	48.3
Time	11:03:17 AM	0:00:01				
Date	11/12/2025					

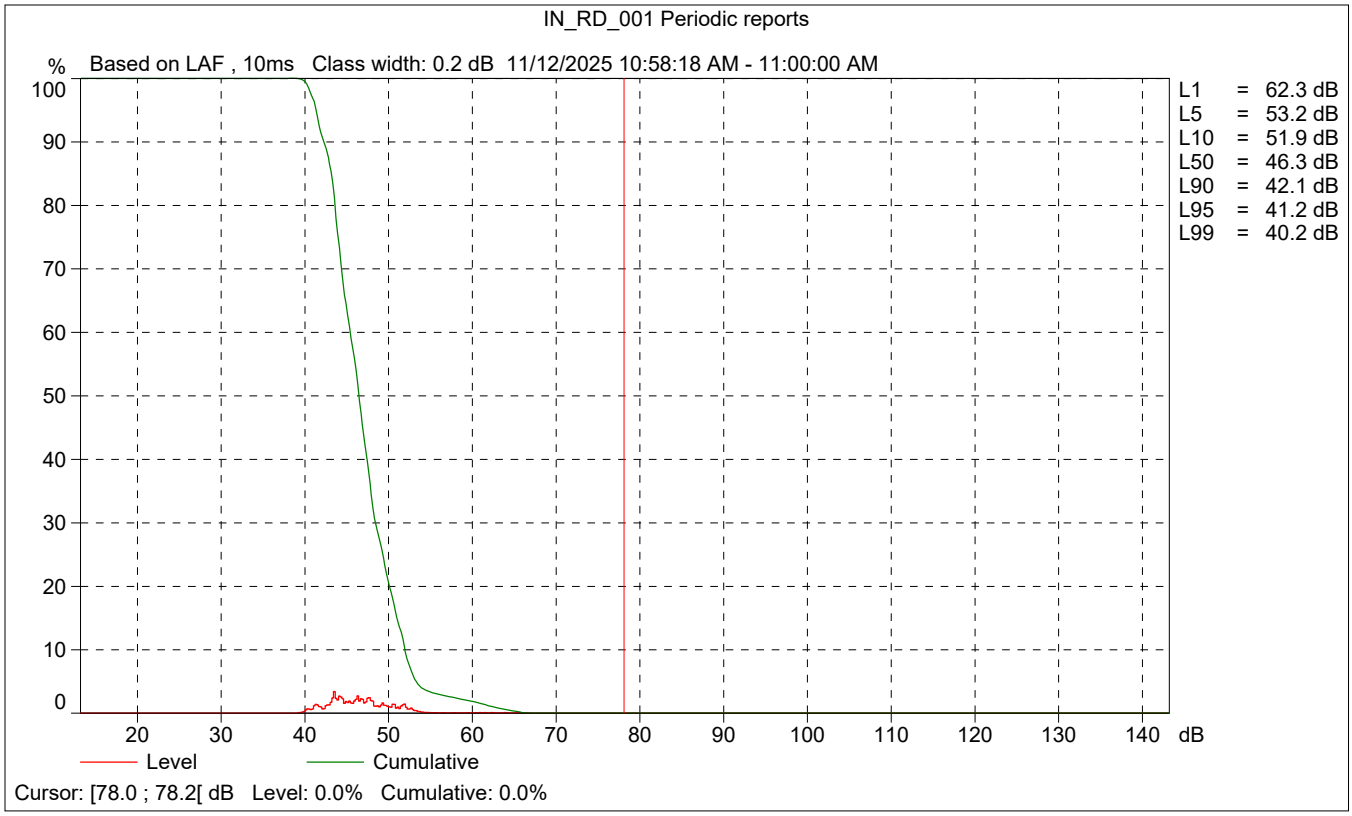

IN_RD_001
dB
11/12/2025 11:03:17 AM - 11:03:18 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=48.8 dB


IN_RD_001 Periodic reports
dB
140
120
100
80
60
40
20
11:00:00 AM
11:10:00 AM
11:20:00 AM
11:30:00 AM
11:40:00 AM
11:50:00 AM
12:00:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 11/12/2025 10:58:18 AM - 11:00:00 AM LAIeq=58.7 dB LAFmax=66.7 dB LCpeak=97.2 dB LAFmin=39.2 dB

IN_RD_001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	58.7	66.7	39.2
Time	10:58:18 AM	0:01:42				
Date	11/12/2025					




IN_RD_001 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 11/12/2025 10:58:18 AM - 11:00:00 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 62.3 dB
L5 = 53.2 dB
L10 = 51.9 dB
L50 = 46.3 dB
L90 = 42.1 dB
L95 = 41.2 dB
L99 = 40.2 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%

Site Number: NM-2	
Recorded By: Dennis Dinh, Darshan Shivaiah	
Job Number: 192359	
Date: 11/12/2025	
Time: 11:20 a.m.	
Location: Northeast corner of the Desert Highland Park	
Source of Ambient Noise: Wind blowing; roadway noise from Tramview Road and Indian Canyon Drive	

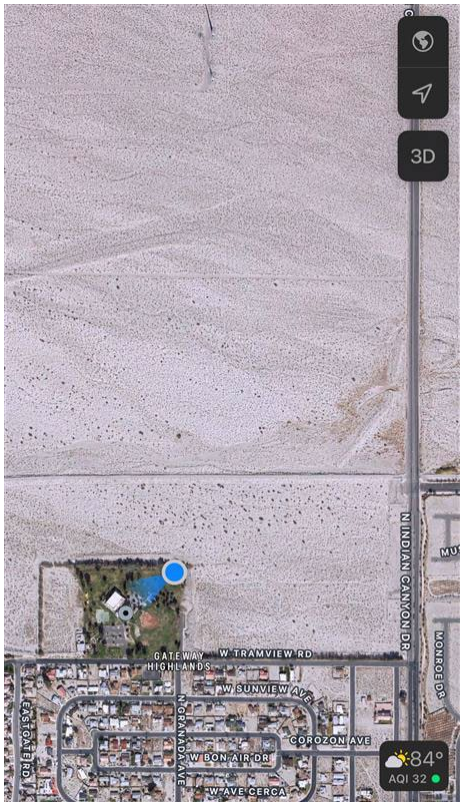
Noise Data		
L_{eq} (dB)	**L_{min} (dB)**	**L_{max} (dB)**
52.7	34.3	72.0

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**06/04/2023**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**06/04/2023**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**06/04/2023**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**06/04/2023**	

Weather Data			
Est.		**Sky:** Sunny	
	Note: dBA Offset = 0.0	**Sensor Height (ft):** 5 ft	
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	4	84	29.99

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		11/12/2025 11:20:52
End Time:		11/12/2025 11:30:52
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.10

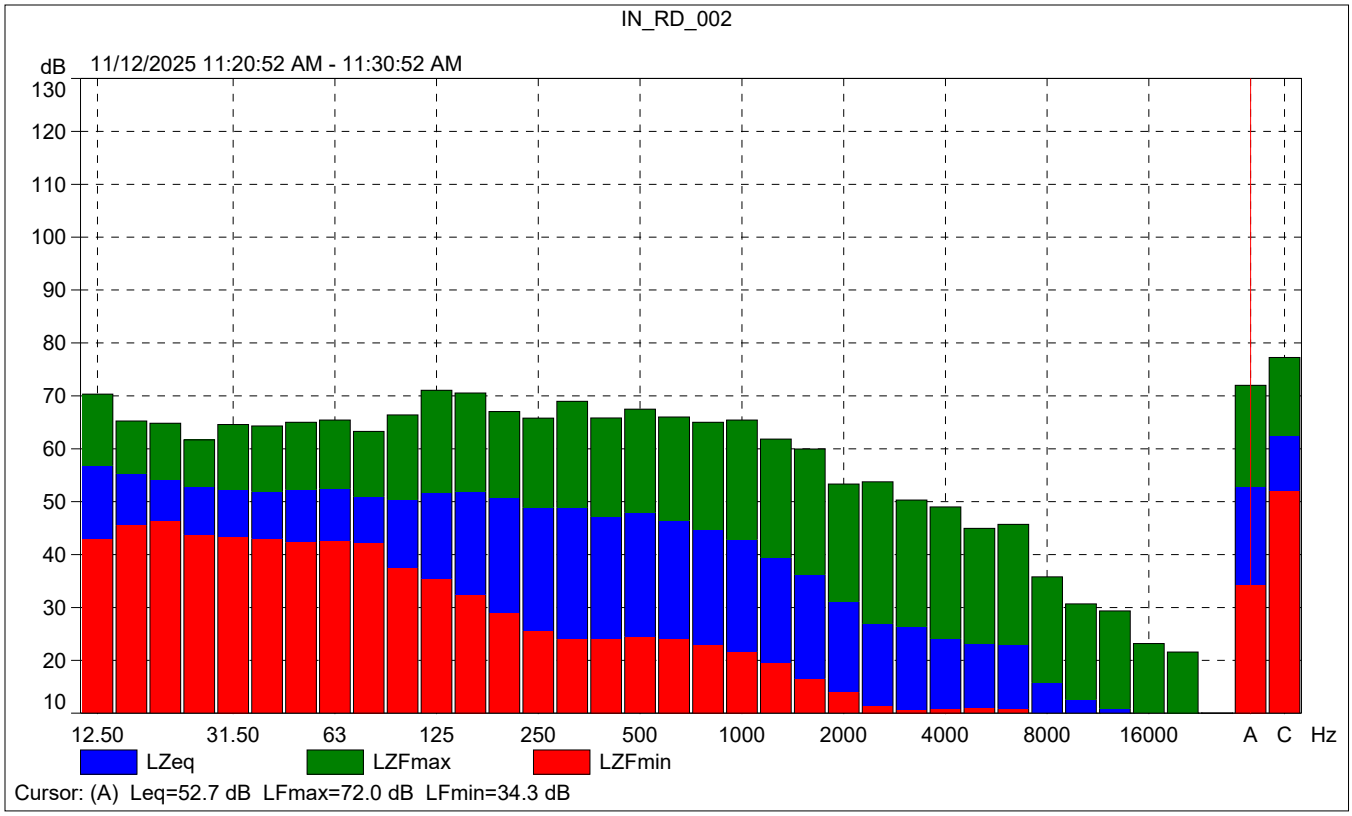
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

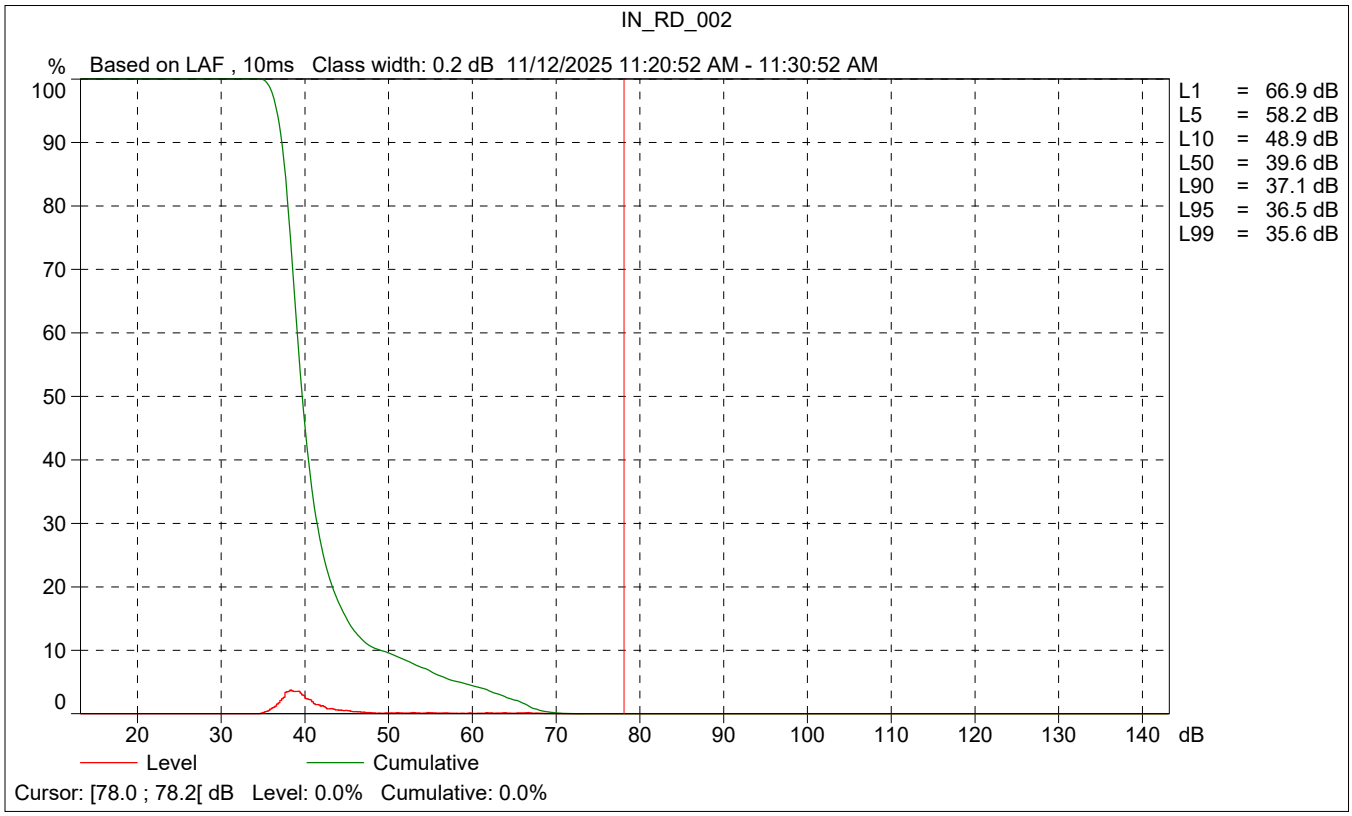
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

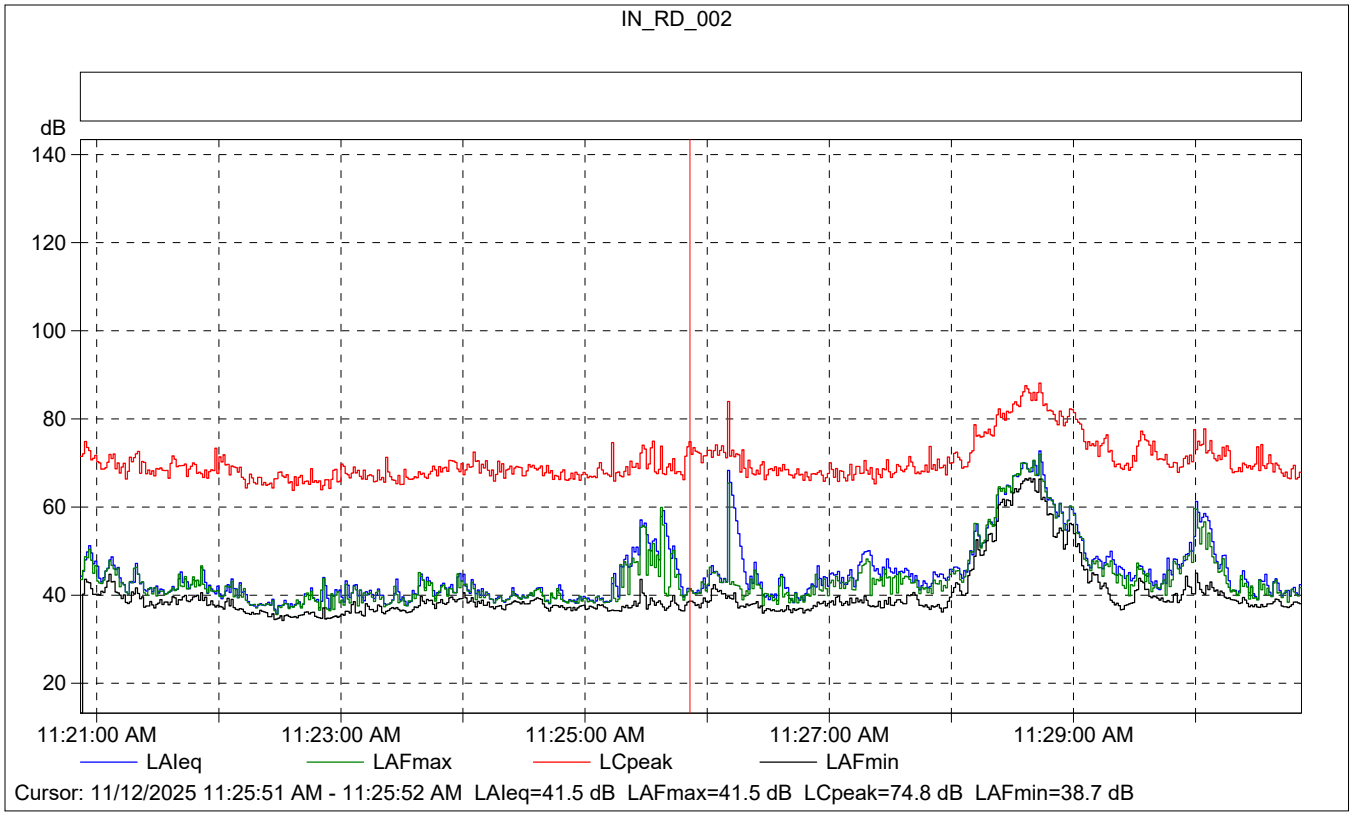
Calibration Time:		11/12/2025 10:57:36
Calibration Type:		External reference
Sensitivity:		43.7099188566208 mV/Pa

IN_RD_002

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	52.7	72.0	34.3
Time	11:20:52 AM	11:30:52 AM	0:10:00				
Date	11/12/2025	11/12/2025					

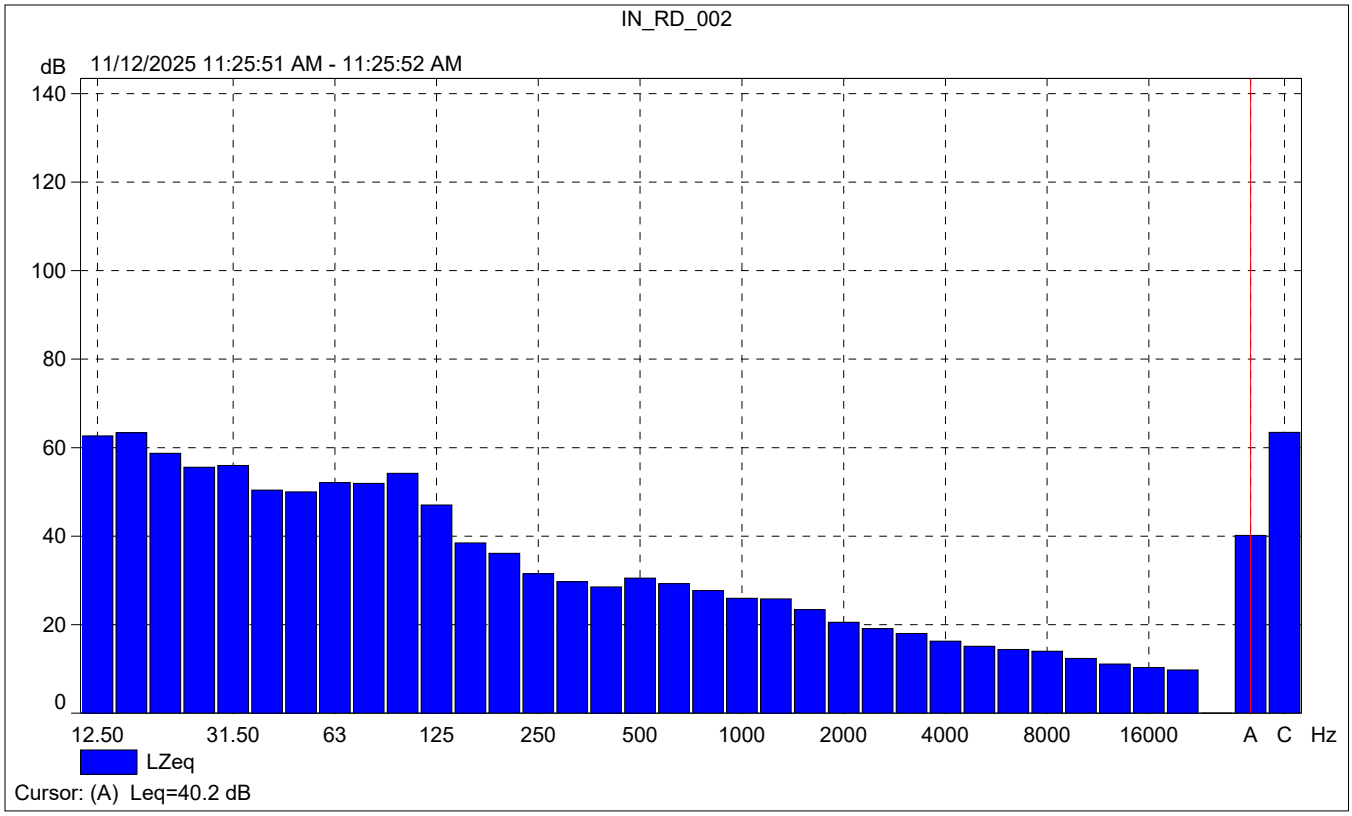

IN_RD_002
dB
11/12/2025 11:20:52 AM - 11:30:52 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=52.7 dB LFmax=72.0 dB LFmin=34.3 dB

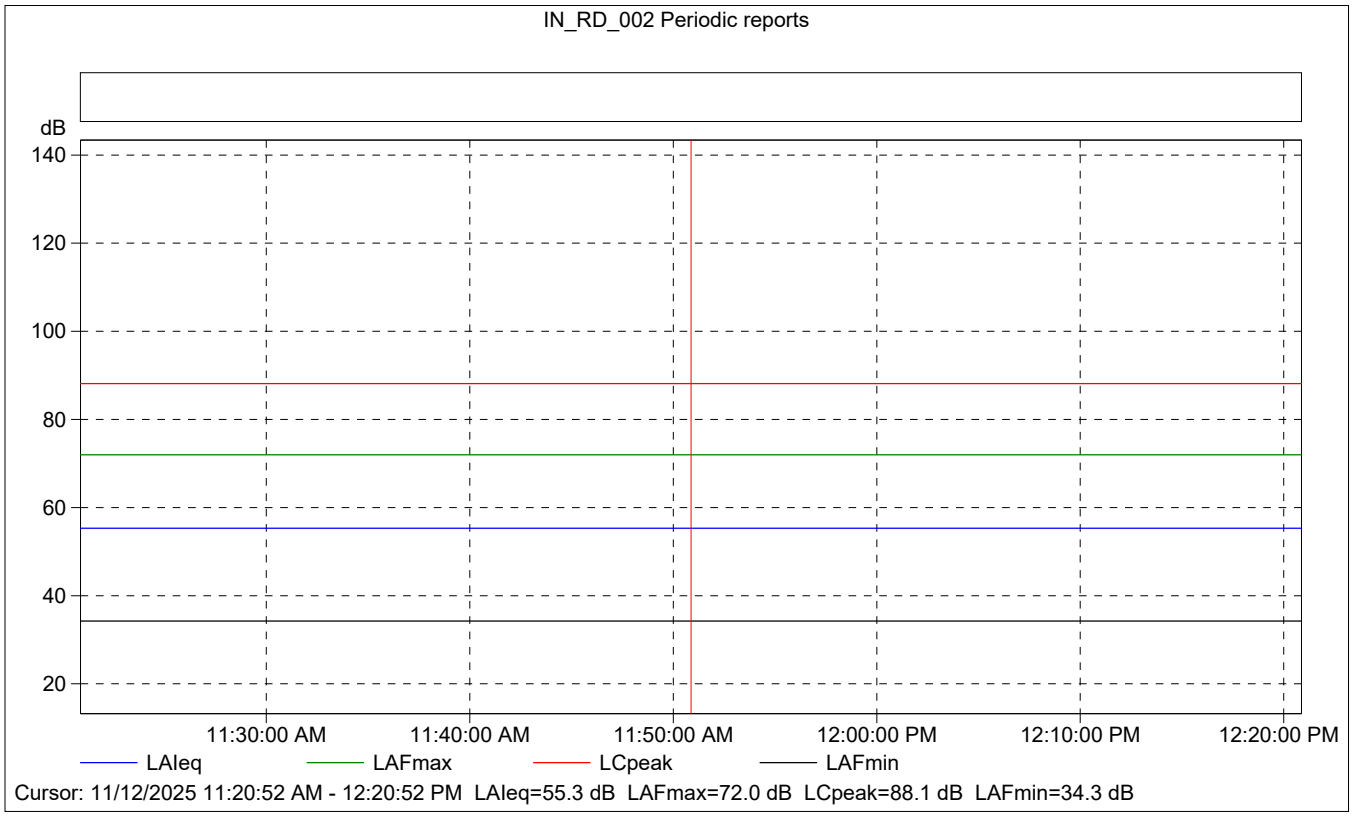

IN_RD_002
%
Based on LAF , 10ms Class width: 0.2 dB 11/12/2025 11:20:52 AM - 11:30:52 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 66.9 dB
L5 = 58.2 dB
L10 = 48.9 dB
L50 = 39.6 dB
L90 = 37.1 dB
L95 = 36.5 dB
L99 = 35.6 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%



IN_RD_002

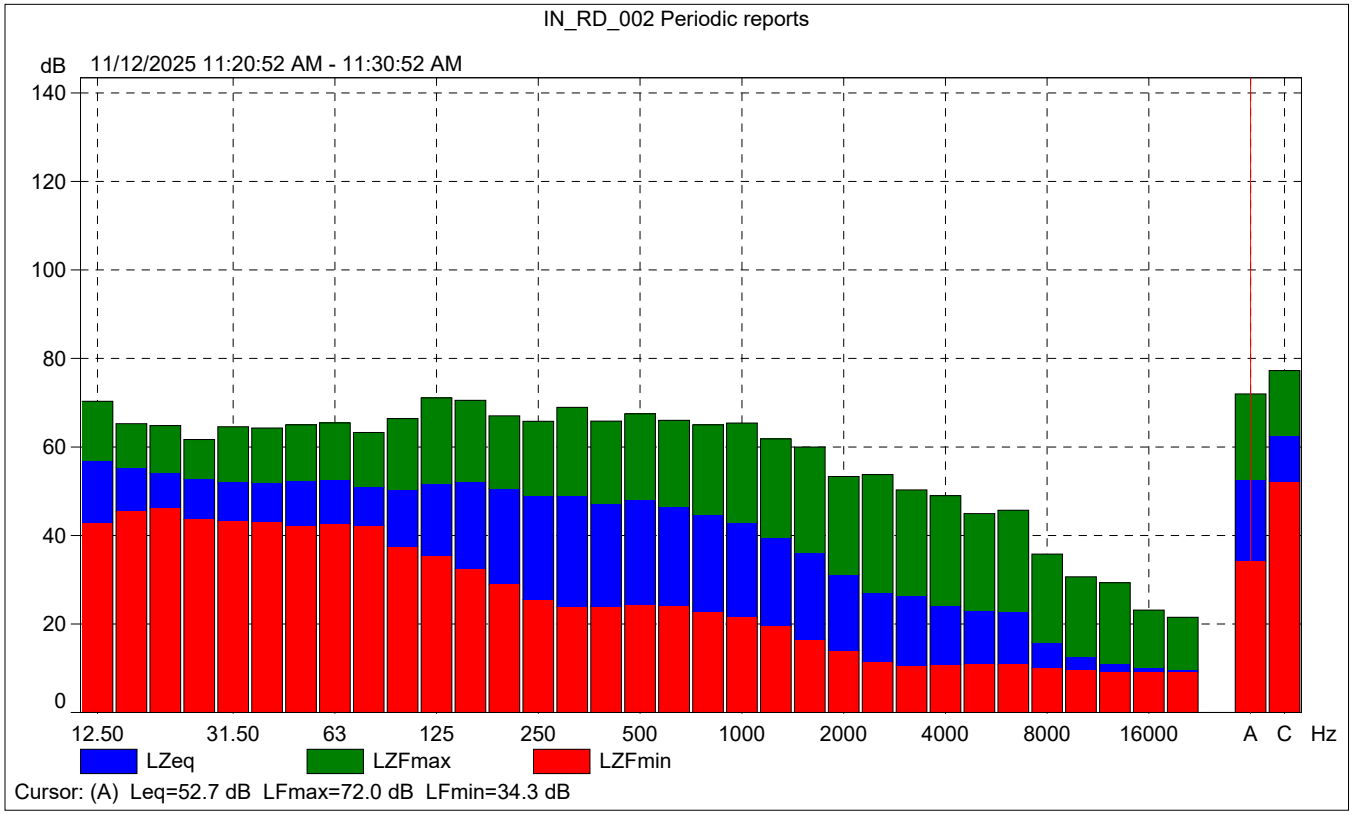
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	41.5	41.5	38.7
Time	11:25:51 AM	0:00:01				
Date	11/12/2025					

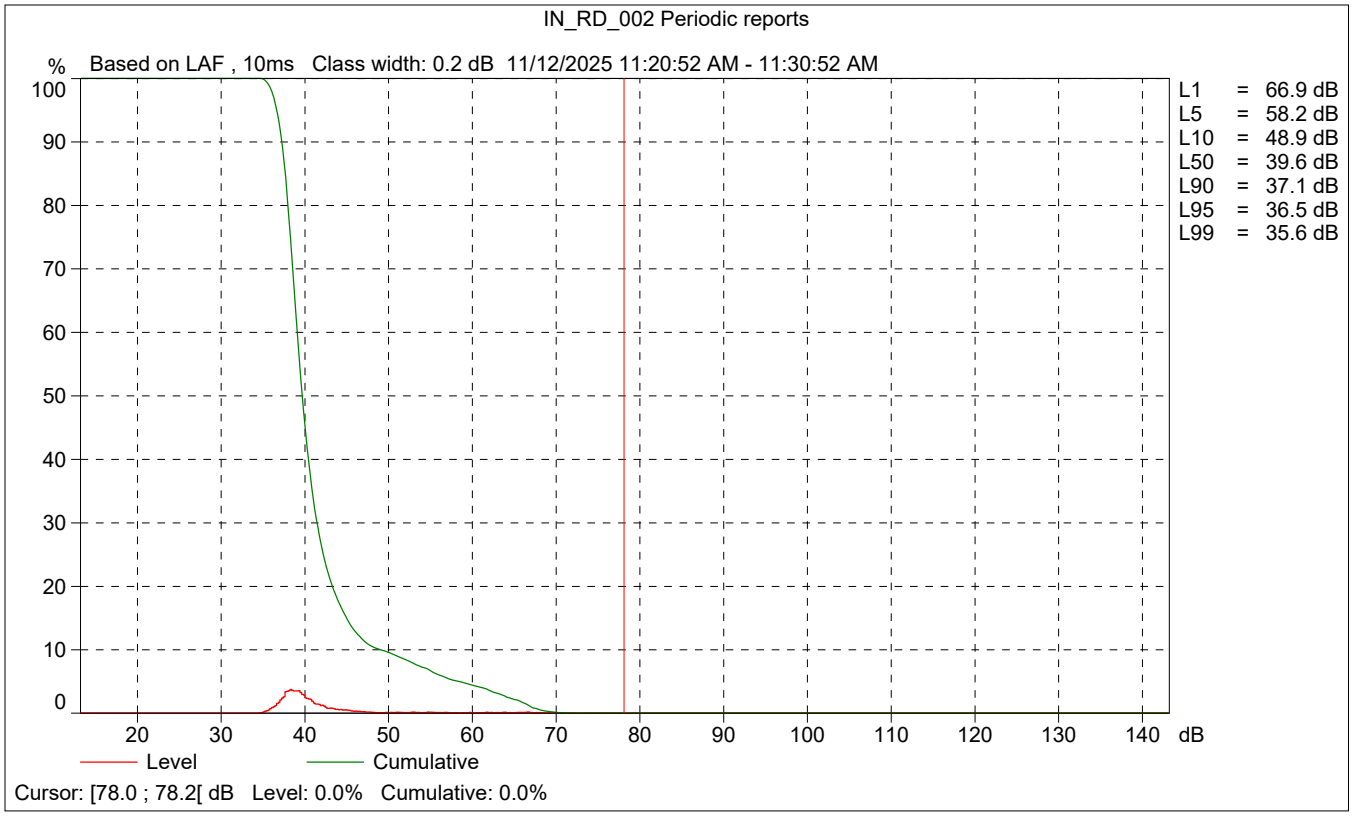

IN_RD_002
dB
11/12/2025 11:25:51 AM - 11:25:52 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=40.2 dB


IN_RD_002 Periodic reports
dB
140
120
100
80
60
40
20
11:30:00 AM
11:40:00 AM
11:50:00 AM
12:00:00 PM
12:10:00 PM
12:20:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 11/12/2025 11:20:52 AM - 12:20:52 PM LAIeq=55.3 dB LAFmax=72.0 dB LCpeak=88.1 dB LAFmin=34.3 dB

IN_RD_002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	55.3	72.0	34.3
Time	11:20:52 AM	0:10:00				
Date	11/12/2025					




IN_RD_002 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 11/12/2025 11:20:52 AM - 11:30:52 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 66.9 dB
L5 = 58.2 dB
L10 = 48.9 dB
L50 = 39.6 dB
L90 = 37.1 dB
L95 = 36.5 dB
L99 = 35.6 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.0%

Site Number: NM-3	
Recorded By: Dennis Dinh, Darshan Shivaiah	
Job Number: 192359	
Date: 11/12/2025	
Time: 11:43 a.m.	
Location: Approximately 200 feet west of the Indian Canyon Drive and 20th Avenue intersection; in front of Motel 6 North Palm Springs	
Source of Ambient Noise: Traffic along 20th Avenue, Indian Canyon Drive, and Interstate 10 Freeway	

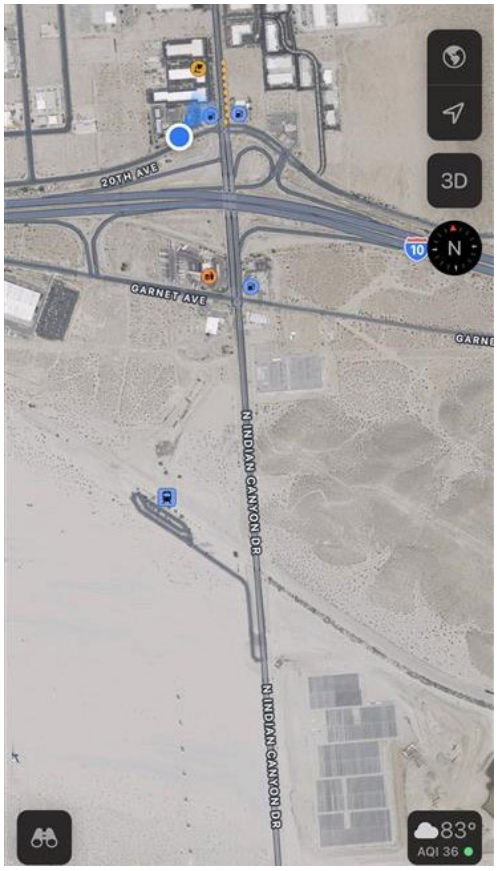
Noise Data		
L_{eq} (dB)	**L_{min} (dB)**	**L_{max} (dB)**
63.1	56.1	80.8

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**06/04/2023**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**06/04/2023**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**06/04/2023**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**06/04/2023**	

Weather Data			
Est.		**Sky:** Sunny	
	Note: dBA Offset = 0.0	**Sensor Height (ft):** 5 ft	
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	4	83	29.99

Photo of Measurement Location





2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		11/12/2025 11:43:51
End Time:		11/12/2025 11:53:51
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.10

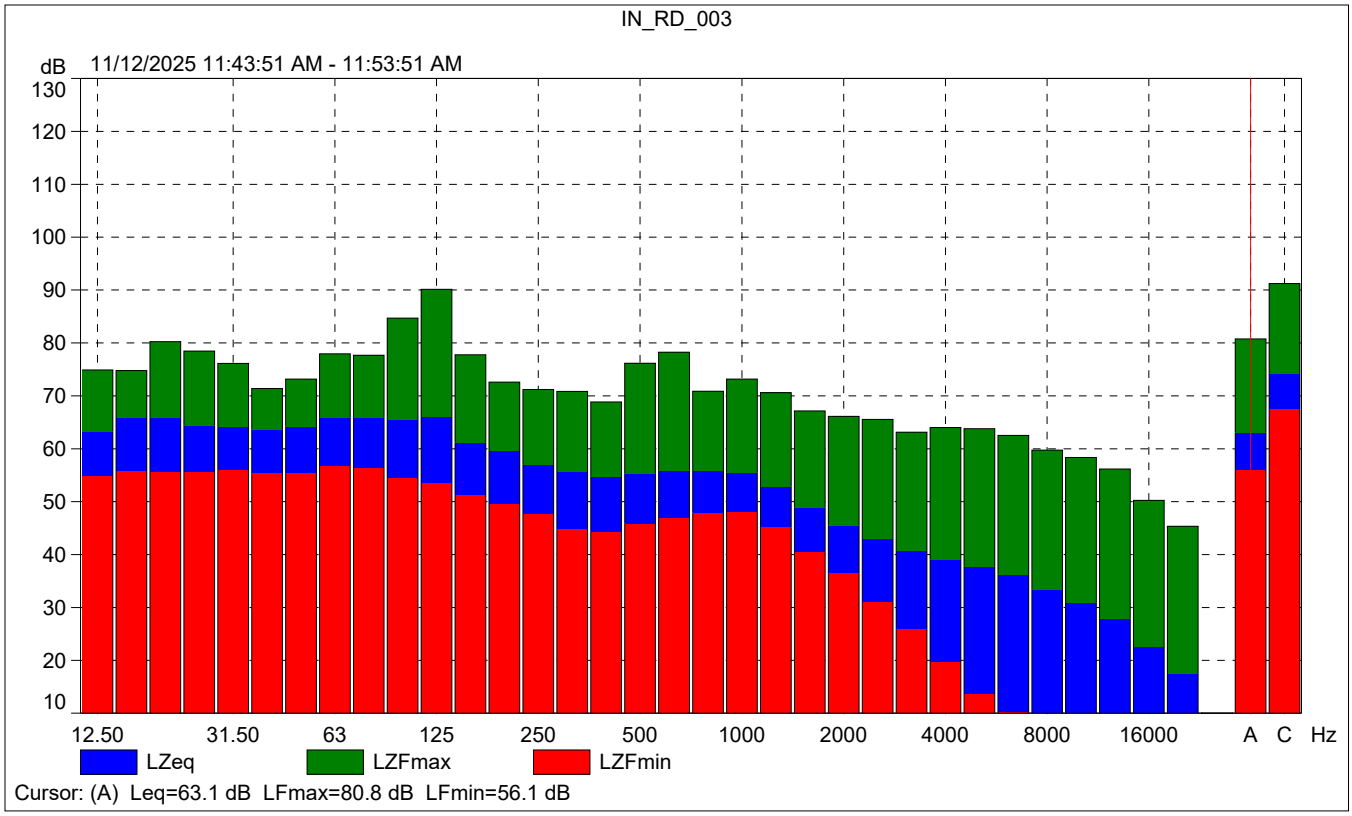
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

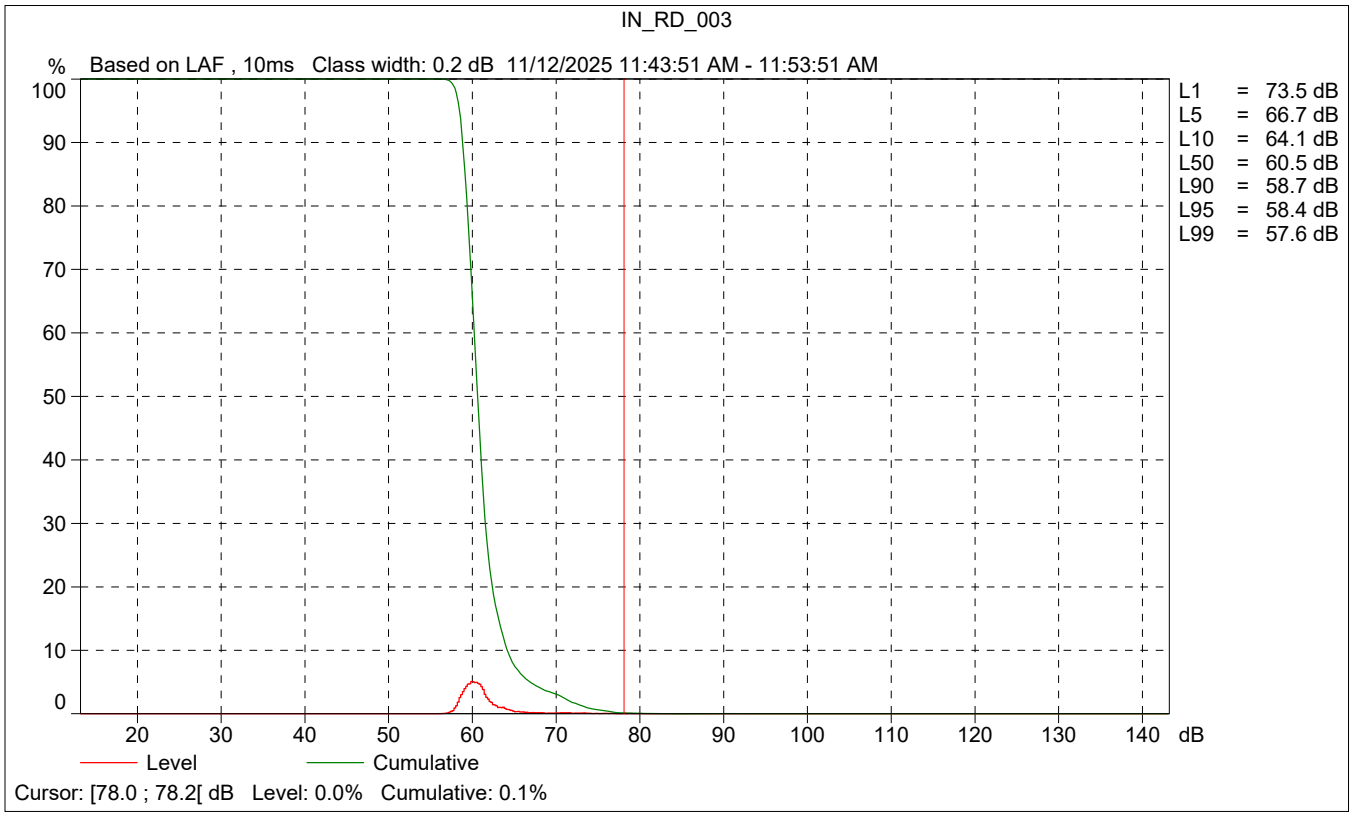
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

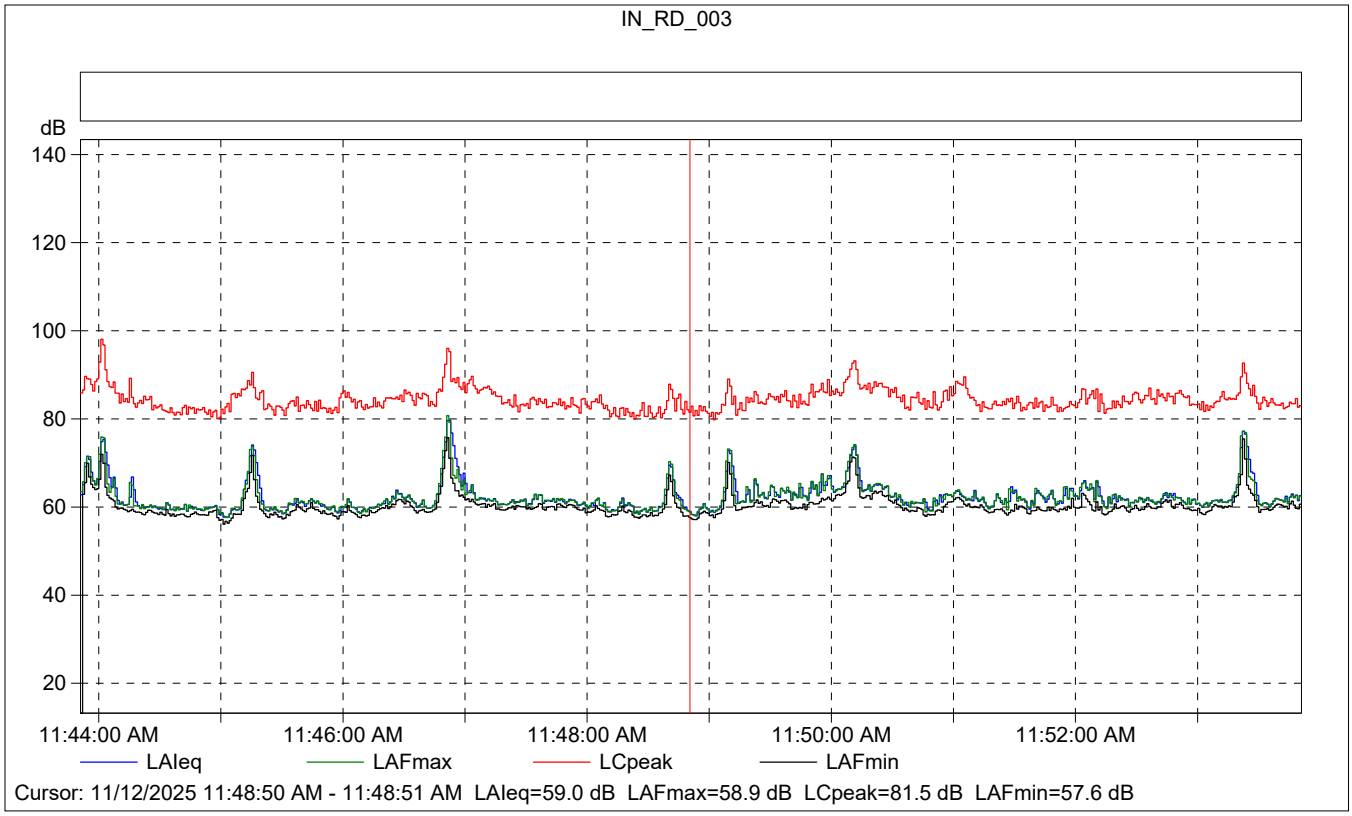
Calibration Time:		11/12/2025 10:57:36
Calibration Type:		External reference
Sensitivity:		43.7099188566208 mV/Pa

IN_RD_003

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	63.1	80.8	56.1
Time	11:43:51 AM	11:53:51 AM	0:10:00				
Date	11/12/2025	11/12/2025					

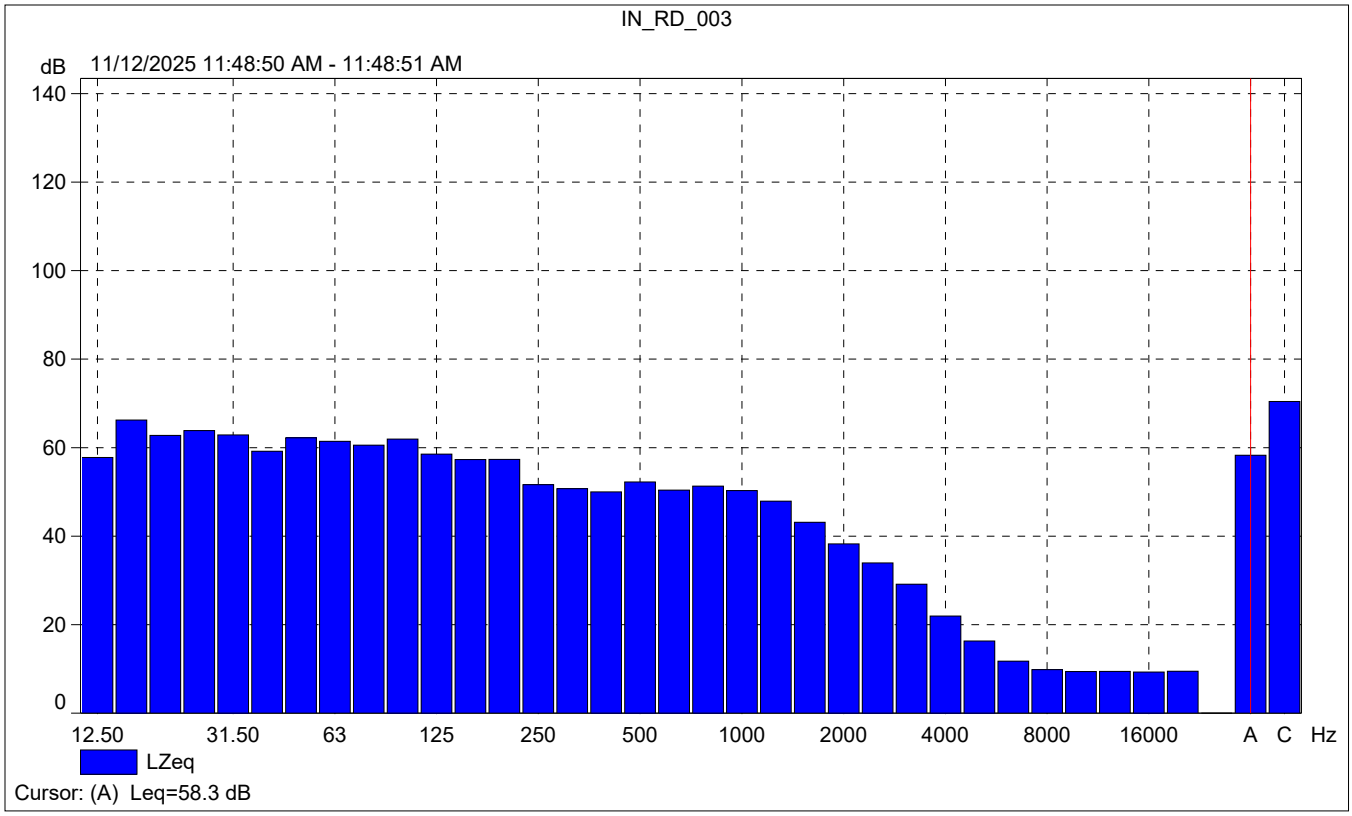

IN_RD_003
dB
11/12/2025 11:43:51 AM - 11:53:51 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=63.1 dB LFmax=80.8 dB LFmin=56.1 dB

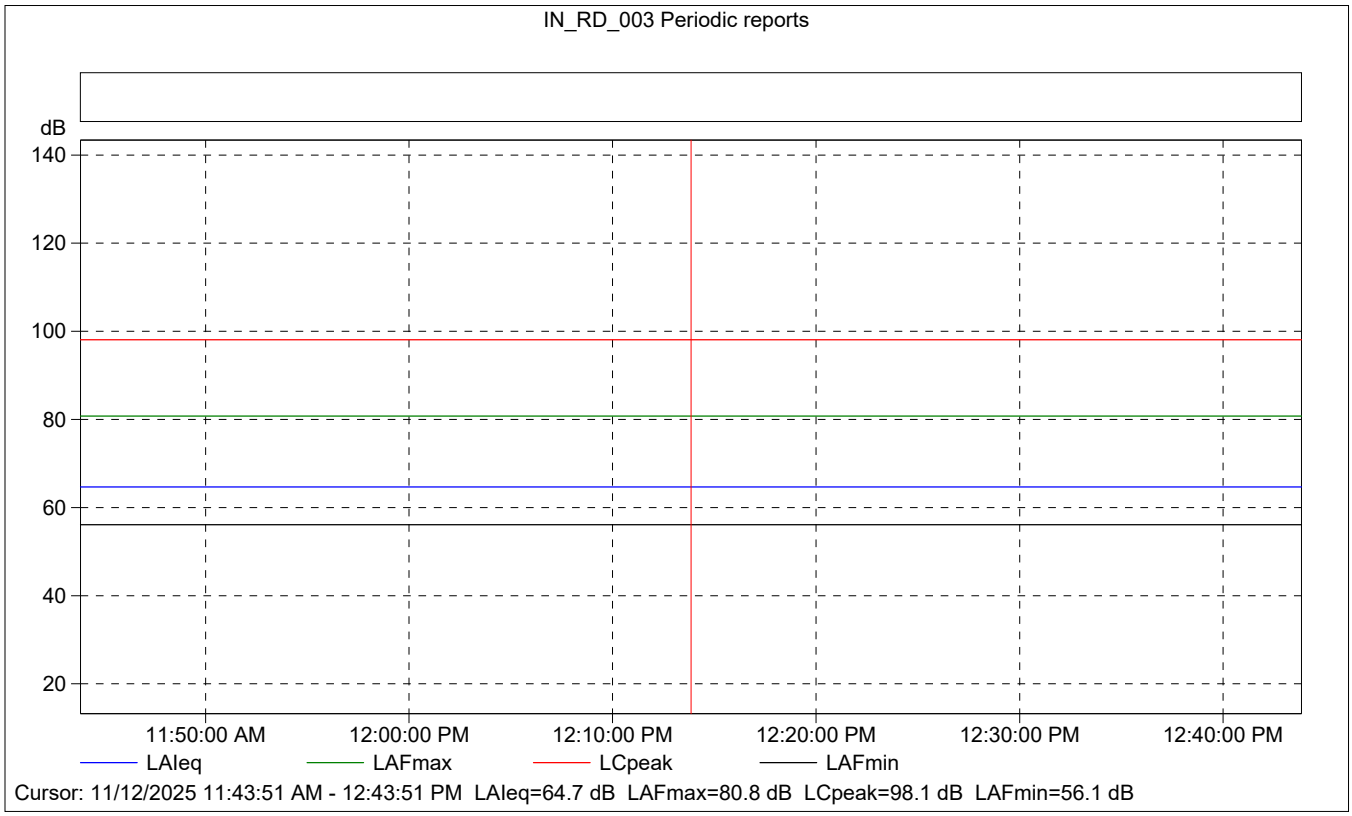

IN_RD_003
%
Based on LAF , 10ms Class width: 0.2 dB 11/12/2025 11:43:51 AM - 11:53:51 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 73.5 dB
L5 = 66.7 dB
L10 = 64.1 dB
L50 = 60.5 dB
L90 = 58.7 dB
L95 = 58.4 dB
L99 = 57.6 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.1%



IN_RD_003

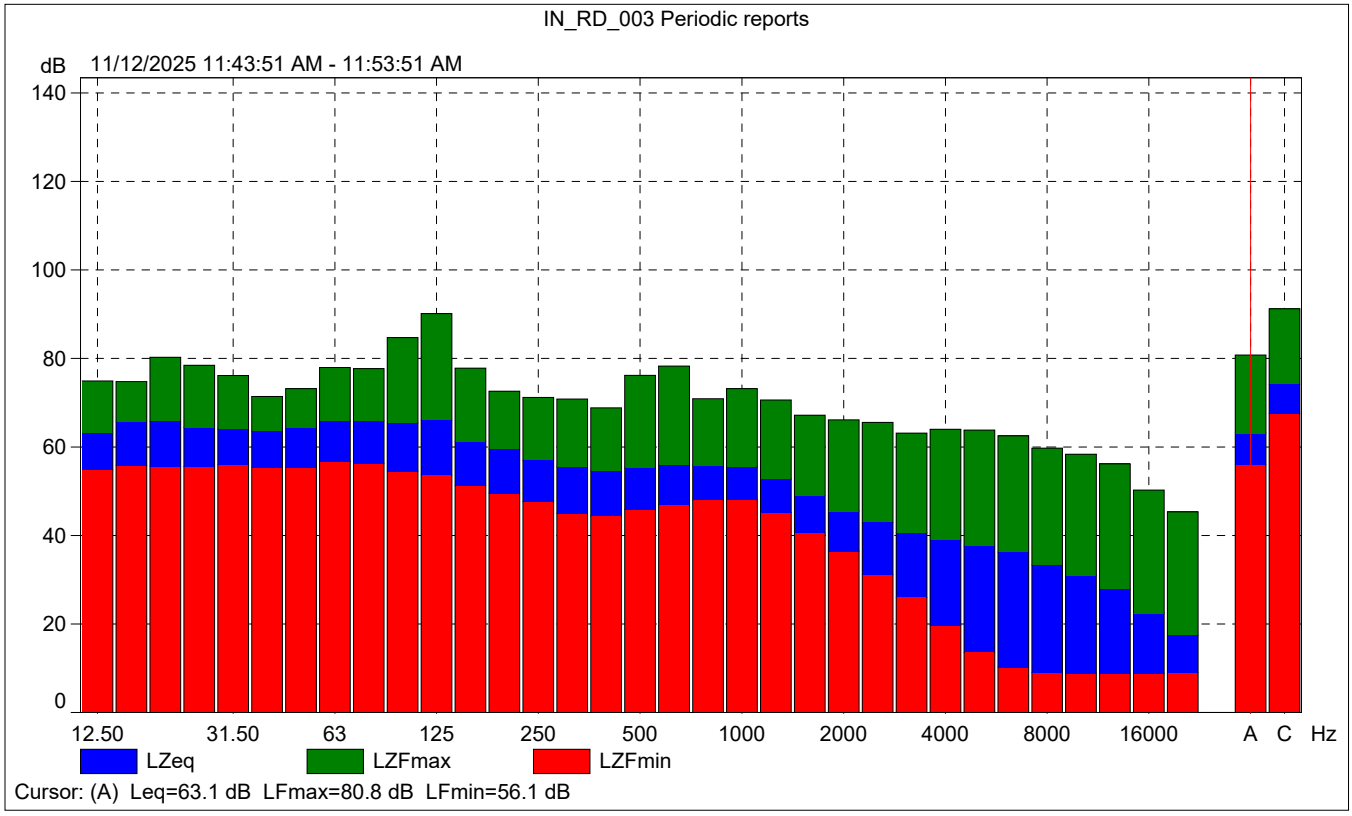
	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	59.0	58.9	57.6
Time	11:48:50 AM	0:00:01				
Date	11/12/2025					

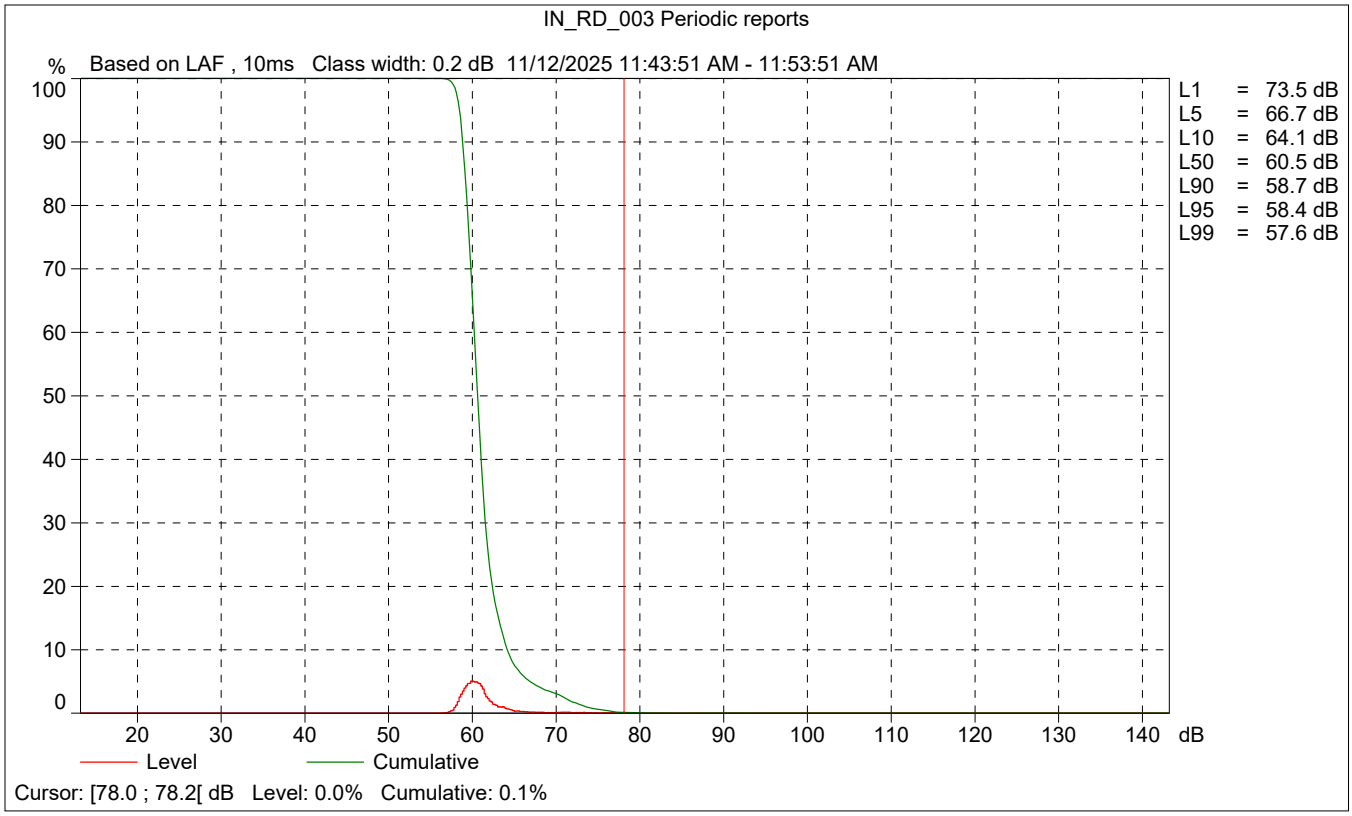

IN_RD_003
dB
11/12/2025 11:48:50 AM - 11:48:51 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=58.3 dB


IN_RD_003 Periodic reports
dB
140
120
100
80
60
40
20
11:50:00 AM
12:00:00 PM
12:10:00 PM
12:20:00 PM
12:30:00 PM
12:40:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 11/12/2025 11:43:51 AM - 12:43:51 PM LAIeq=64.7 dB LAFmax=80.8 dB LCpeak=98.1 dB LAFmin=56.1 dB

IN_RD_003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	64.7	80.8	56.1
Time	11:43:51 AM	0:10:00				
Date	11/12/2025					




IN_RD_003 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 11/12/2025 11:43:51 AM - 11:53:51 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 73.5 dB
L5 = 66.7 dB
L10 = 64.1 dB
L50 = 60.5 dB
L90 = 58.7 dB
L95 = 58.4 dB
L99 = 57.6 dB
Level
Cumulative
Cursor: [78.0 ; 78.2[dB Level: 0.0% Cumulative: 0.1%

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Grubbing & Land Clearing_120 Feet

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (120 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Tractor	No	40	84.0		120.0	0.0
Excavator	No	40		80.7	120.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	76.4	72.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.4	74.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Grading & Excavation

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (120 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	120.0	0.0
Tractor	No	40	84.0		120.0	0.0
Grader	No	40	85.0		120.0	0.0
Roller	No	20		80.0	120.0	0.0
Tractor	No	40	84.0		120.0	0.0
Front End Loader	No	40		79.1	120.0	0.0
Scraper	No	40		83.6	120.0	0.0
Crane	No	16		80.6	120.0	0.0

Results

			Noise Limits (dBA)				Noise Limit Exceedance (dBA)			
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	73.1	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.4	72.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	77.4	73.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	72.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.4	72.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	71.5	67.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	76.0	72.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	72.9	65.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.4	79.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Construction_120 Feet

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (120 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Scraper	No	40		83.6	120.0	0.0
Pickup Truck	No	40		75.0	120.0	0.0
Tractor	No	40	84.0		120.0	0.0
Grader	No	40	85.0		120.0	0.0
Compactor (ground)	No	20		83.2	120.0	0.0
Pumps	No	50		80.9	120.0	0.0
Compressor (air)	No	40		77.7	120.0	0.0
Generator	No	50		80.6	120.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper	76.0	72.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	67.4	63.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.4	72.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	77.4	73.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	75.6	68.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	73.3	70.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	70.1	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	73.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.4	79.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Paving_120 Feet

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential (120 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Roller	No	20		80.0	120.0	0.0
Paver	No	50		77.2	120.0	0.0
Paver	No	50		77.2	120.0	0.0
Tractor	No	40	84.0		120.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Roller	72.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	69.6	66.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	69.6	66.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	76.4	72.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	76.4	74.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Grubbing & Land Clearing

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (4,200 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		4200.0	0.0
Tractor	No	40	84.0		4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.5	46.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Grubbing & Land Clearing

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (4,200 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Excavator	No	40		80.7	4200.0	0.0
Tractor	No	40	84.0		4200.0	0.0
Tractor	No	40	84.0		4200.0	0.0
Tractor	No	40	84.0		4200.0	0.0
Grader	No	40	85.0		4200.0	0.0
Grader	No	40	85.0		4200.0	0.0
Grader	No	40	85.0		4200.0	0.0
Roller	No	20		80.0	4200.0	0.0
Roller	No	20		80.0	4200.0	0.0
Roller	No	20		80.0	4200.0	0.0
Roller	No	20		80.0	4200.0	0.0
Roller	No	20		80.0	4200.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A														
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Excavator	42.2	38.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Grader	46.5	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Grader	46.5	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Grader	46.5	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														
Total	46.5	52.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A														

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Grading & Excavation Part 2

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (4,200 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		4200.0	0.0
Tractor	No	40	84.0		4200.0	0.0
Tractor	No	40	84.0		4200.0	0.0
Front End Loader	No	40		79.1	4200.0	0.0
Front End Loader	No	40		79.1	4200.0	0.0
Front End Loader	No	40		79.1	4200.0	0.0
Front End Loader	No	40		79.1	4200.0	0.0
Scraper	No	40		83.6	4200.0	0.0
Scraper	No	40		83.6	4200.0	0.0
Scraper	No	40		83.6	4200.0	0.0
Scraper	No	40		83.6	4200.0	0.0
Scraper	No	40		83.6	4200.0	0.0
Scraper	No	40		83.6	4200.0	0.0
Crane	No	16		80.6	4200.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	40.6	36.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	40.6	36.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	40.6	36.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

														N/A
Front End Loader	40.6	36.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	42.1	34.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	45.5	51.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Construction_4200 Feet

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (4,200 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Scraper	No	40	83.6	4200.0	0.0	
Scraper	No	40	83.6	4200.0	0.0	
Scraper	No	40	83.6	4200.0	0.0	
Scraper	No	40	83.6	4200.0	0.0	
Scraper	No	40	83.6	4200.0	0.0	
Scraper	No	40	83.6	4200.0	0.0	
Pickup Truck	No	40	75.0	4200.0	0.0	
Pickup Truck	No	40	75.0	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	
Grader	No	40	85.0	4200.0	0.0	
Grader	No	40	85.0	4200.0	0.0	
Grader	No	40	85.0	4200.0	0.0	
Compactor (ground)	No	20	83.2	4200.0	0.0	
Compactor (ground)	No	20	83.2	4200.0	0.0	
Pumps	No	50	80.9	4200.0	0.0	
Pumps	No	50	80.9	4200.0	0.0	

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	45.1	41.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	36.5	32.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	36.5	32.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	46.5	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	46.5	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	46.5	42.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	44.7	37.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	44.7	37.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	42.5	39.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	42.5	39.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	46.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Construction_4200 Feet_Part 1

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential (4,200 feet)	Residential	50.0	50.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	4200.0	0.0
Compressor (air)	No	40		77.7	4200.0	0.0
Generator	No	50		80.6	4200.0	0.0
Generator	No	50		80.6	4200.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	39.2	35.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	39.2	35.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	42.1	39.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	42.1	39.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	42.1	43.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/11/2025
Case Description: Linear, Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential (4,200 feet)	Residential	50.0	50.0	50.0

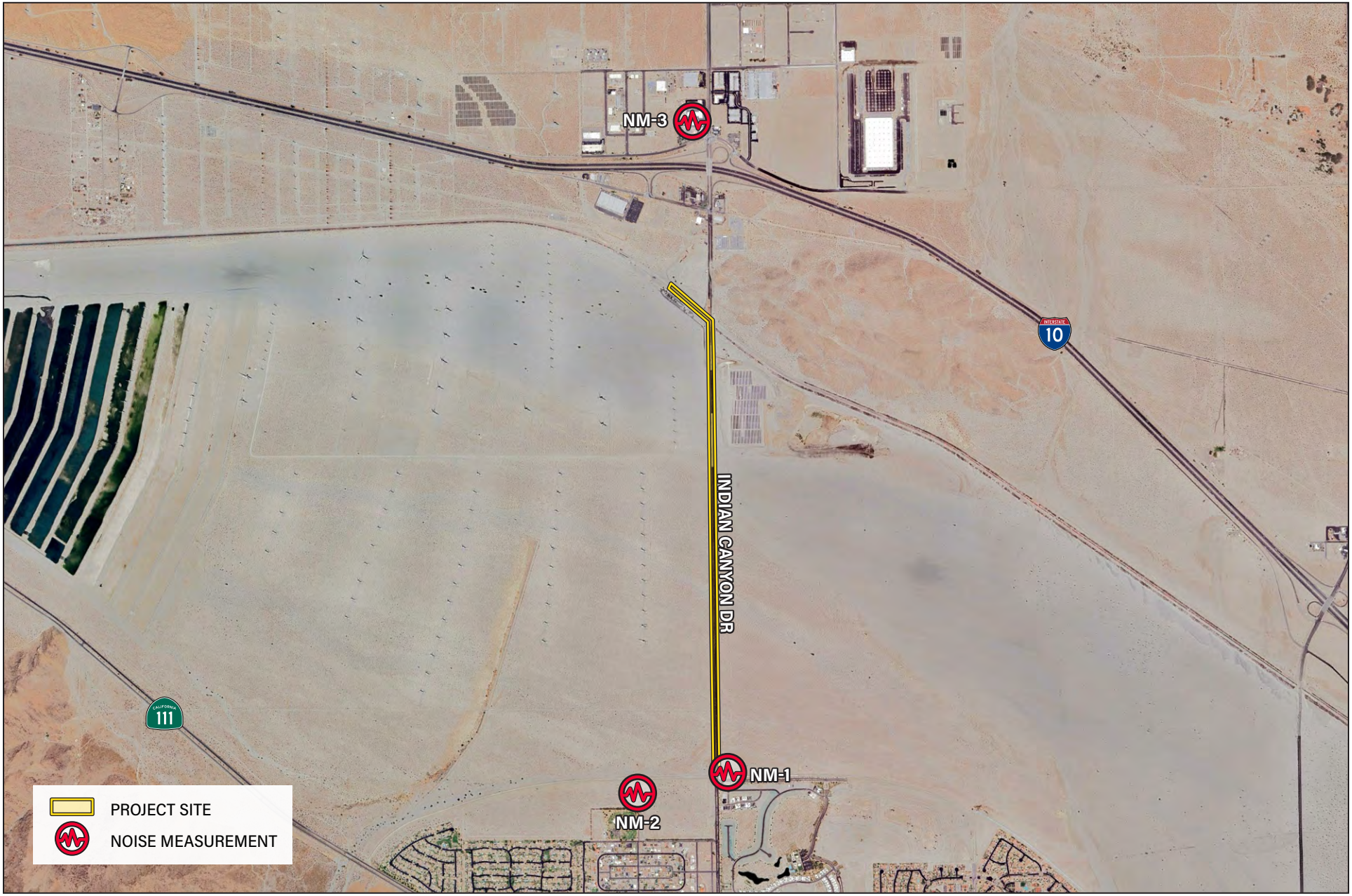
Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Roller	No	20	80.0	4200.0	0.0	
Roller	No	20	80.0	4200.0	0.0	
Roller	No	20	80.0	4200.0	0.0	
Roller	No	20	80.0	4200.0	0.0	
Paver	No	50	77.2	4200.0	0.0	
Paver	No	50	77.2	4200.0	0.0	
Paver	No	50	77.2	4200.0	0.0	
Paver	No	50	77.2	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	
Tractor	No	40	84.0	4200.0	0.0	

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	41.5	34.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	38.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	38.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	38.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A															
Paver		38.7	35.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A															
Tractor		45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A															
Tractor		45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A															
Tractor		45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A															
Tractor		45.5	41.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A															
	Total	45.5	49.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
N/A															



Source: Google Earth Pro, November 2025

Michael Baker INTERNATIONAL

NOT TO SCALE

11/2025 • JN 192359

NORTH INDIAN CANYON ROAD IMPROVEMENT PROJECT

Noise Measurement Locations

Exhibit 4.13-1

Appendix E

Vehicle Miles Traveled Screening Analysis

Michael Baker INTERNATIONAL

We Make a Difference

MEMORANDUM

To: Coachella Valley Association of Governments

From: Michael Baker International

Date: December 5, 2025

Subject: Western Coachella Valley Flood and Blowsand Road Improvement Project – Indian Canyon Drive VMT Screening Analysis

---

Introduction

The purpose of this memorandum is to document the Vehicle Miles Travelled (VMT) screening analysis for the proposed transportation improvement project along Indian Canyon Drive. The proposed improvements intend to safely convey floodwaters while at the same time allowing for the continuation of blowsand movement. These improvements are being proposed in the City of Palm Springs, in Riverside County, California. This memorandum has been prepared to support the Transportation component of the environmental document analysis as part of the California Environmental Quality Act (CEQA) process.

Project Information

The project site is approximately 1.6-miles (8,500 linear feet) along Indian Canyon Drive right-of-way, south of Interstate 10 (I-10) starting at Palm Springs Station Road (signaled intersection) and continuing south to Sunrise Parkway (signaled intersection). Under the City of Palm Springs 2040 General Plan Circulation Element, Indian Canyon Drive is classified as Major Throughfare. The posted speed limit in the project vicinity is 55 miles per hour (mph).

The purpose of the project is to construct a bridge system to address safety concerns regarding the conveyance of floodwaters and blowsand. The project is designed to mitigate the adverse impacts of flood and blowsand events that occur along Indian Canyon Drive and the local vicinity.

The project will address three primary needs:

1. Improve the existing at-grade transportation infrastructure along Indian Canyon Drive to facilitate the flow of floodwater and sand in areas of concentrated flow, including undercrossings to create a wildlife corridor and sand fencing.
2. Improve mobility for motorists and pedestrians by minimizing the frequency of roadway closures caused by flood and blowsand events.
3. Provide a multi-modal active transportation pathway.

The proposed roadway improvements associated with this project include two main components:

- Elevated roadway bridge system along a portion of Whitewater River to improve drainage crossing along Indian Canyon Drive.
- 1.6-mile multi-use trail (from Sunrise Parkway to Amtrak's Palm Springs Station) connecting to CV Link (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection.

The project is not proposing any capacity enhancements that will affect traffic operations. Under the No Build and Build conditions, the roadway lane configurations will remain identical.

Exhibit 1 shows the project location within the region and the project Geometric Approval Drawing is shown in **Exhibit 2.**

Other Transportation Projects in Vicinity

There are currently two other projects currently under construction in the vicinity of the project:

1) **Indian Canyon Drive and Bridge Widening Project** – The project from Garnet Avenue to Palm Springs Station Road includes the widening of Indian Canyon Drive to four lanes and the replacement of the existing Union Pacific Railroad bridge with a new two-span structure. This project covers approximately 0.62 miles and is expected to be completed in 2027.
2) **Indian Canyon Sewer Main Extension Project** – The project is extending public sewer service by providing a new sewer main within and along Indian Canyon Drive from Tramview Road to Garnet Avenue. This project is expected to be completed in 2026.

These projects and associated improvements are independent and do not preclude the Flood and Blowsand Road Improvement Project assessed in this screening.

Analysis Guidelines

The City of Palm Springs Traffic Impact Analysis Guidelines (July 2020) *(City Guidelines)* and the Riverside County Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled (December 2020) (*County Guidelines*) have been utilized in the development of this evaluation. The Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA,* December 2018 *(Technical Advisory)* was used as a secondary resource.

Screening Criteria

Per *County Guidelines* and *OPR Technical Advisory,* transportation projects that increase motor vehicle capacity can lead to additional travel on the roadway network, therefore potentially resulting in increased VMT. VMT assessments for transportation projects require an analysis to determine if the transportation project induces substantial additional VMT. While the *City Guidelines* focus on VMT screening analysis relative to potential land use development projects, the *County Guidelines* provide screening criteria to be considered on a project-by-project basis to determine whether a VMT transportation impact analysis should be performed.

The *County Guidelines* and *OPR Technical Advisory* both provide lists of transportation projects that are <u>not</u> likely to lead to a substantial or measurable increase in vehicle travel. A detailed VMT analysis is <u>not required</u> and a less-than-significant impact determination would result if the project meets at least one of project types. The types of projects that are relevant to this project and that are evaluated in the screening analysis are shown in **Table 1** along with the project evaluation.

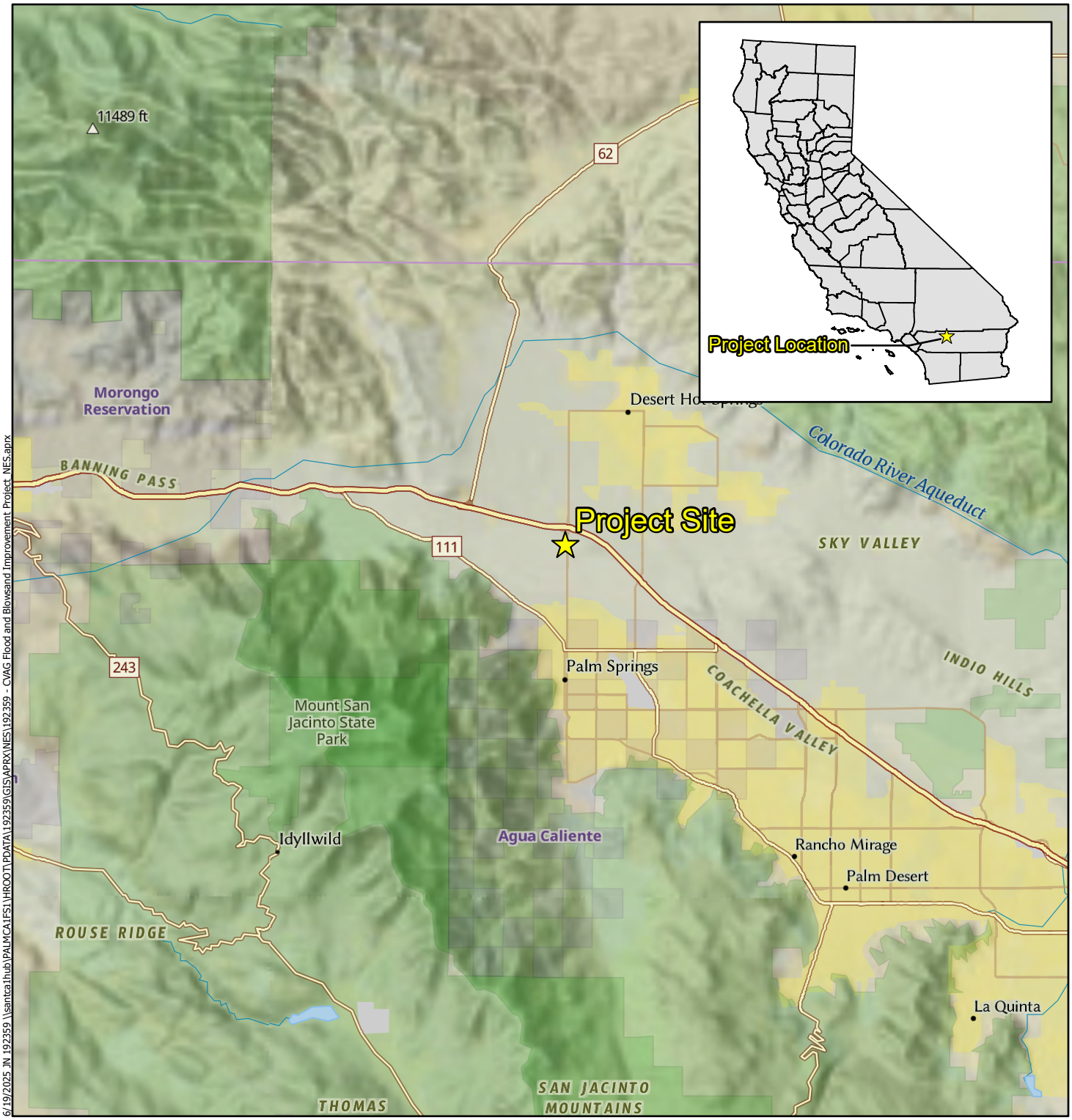
Table 1: Project Screening Analysis

Project Type		Project Evaluation	Result
1	Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts)	The project includes the construction of a bridge system to address safety concerns regarding the conveyance of floodwaters and blowsand.	Project Meets
2	Rehabilitation and maintenance projects that do not add motor vehicle capacity	The project does not include adding motor vehicle capacity or additional vehicular travel lanes within the entire study area. The City of Palm Springs has a project currently underway to make improvements along Indian Canyon Drive, including the northern portion of the project corridor. As previously discussed, the Indian Canyon Drive and Bridge Widening Project is under construction and is expected to be completed by 2027. The improvements primarily focus on widening the roadway from Palm Springs Station Drive to Garnet Avenue, providing four lanes on the roadway and replacement of the existing bridge over the Union Pacific Railroad.	Project Meets
3	Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way	The project includes construction of a 1.6-mile multi-use trail along the west side of Indian Canyon Drive. No pedestrian or bicycle facilities are currently present along this section of the roadway.	Project Meets
4	Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve nonmotorized travel		Project Meets

Conclusion

The VMT evaluation of the proposed Flood and Blowsand Road Improvement project along Indian Canyon Drive in the City of Palm Springs shows that ***the project meets multiple Screening Criteria for transportation projects; therefore, the project is presumed to cause a less-than-significant impact on VMT. Given this finding, a project-specific VMT assessment including a VMT calculation is <u>not</u> required.***

Attachments



Legend

★ Project Site

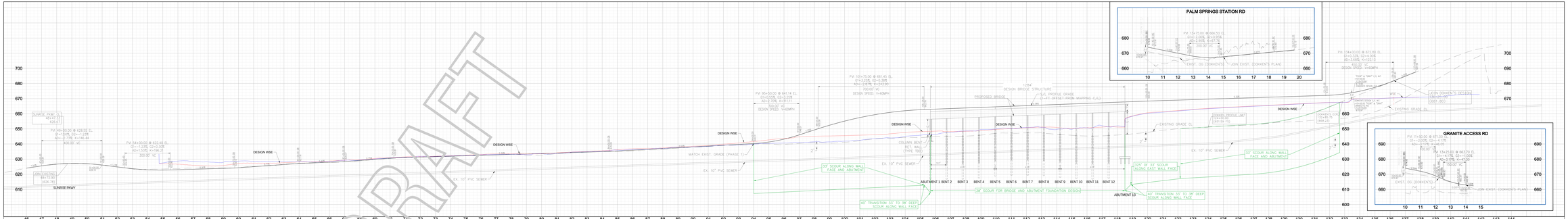
CVAG WESTERN COACHELLA VALLEY FLOODING AND BLOWSAND PROJECT - PHASE ONE, INDIAN CANYON DRIVE

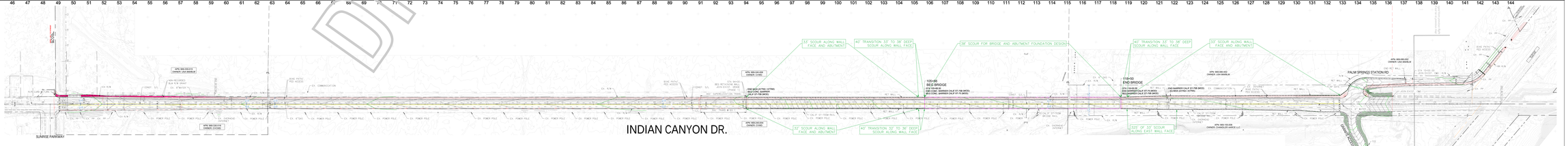
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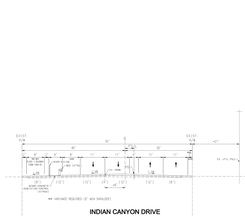
Source: Esri, ArcGIS Online, USGS, Riverside County

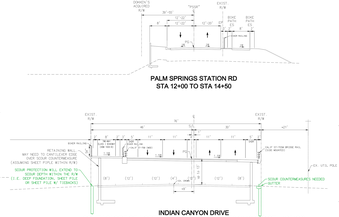
Regional Vicinity

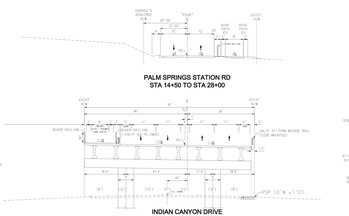
Exhibit 1

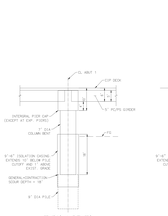


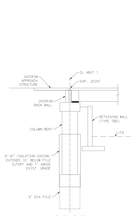


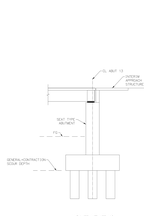

INDIAN CANYON DRIVE
STA 54+75 TO STA 94+00

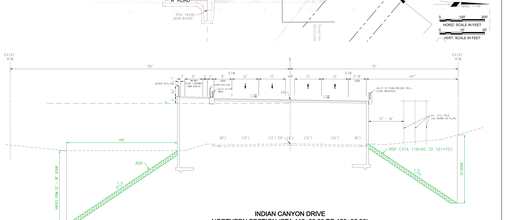

INDIAN CANYON DRIVE
SOUTH SLOPE OF NORTH BRIDGE SECTION (~STA 94+00 TO STA 105+66)


INDIAN CANYON DRIVE
NORTH BRIDGE SECTION (STA 105+66 TO STA 118+50)


TYPICAL BENTS


ABUTMENT 1


ABUTMENT 13


INDIAN CANYON DRIVE
NORTHERN SECTION (STA 118+50.00 TO 129+85.90)

PALM SPRINGS STATION RD
STA 12+00 TO STA 14+50

PALM SPRINGS STATION RD
STA 14+50 TO STA 28+00

DRAFT

30% SUBMITTAL

INDIAN CANYON DRIVE
GEOMETRIC APPROVAL DRAWING
REVISED: Jul. 7, 25

Michael Baker
INTERNATIONAL
Phone: (760) 776-8700 Website: MBAKERINTL.COM

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
CVAG

LEGEND:
- INDICATES EXISTING RIGHT-OF-WAY
- INDICATES EXISTING CENTERLINE
- INDICATES EXISTING EDGE OF PAVEMENT
- INDICATES EXISTING STRIPING
- INDICATES EXISTING CONCRETE SWALE/APRON
- INDICATES EXISTING UTILITY POLE
- INDICATES EXISTING FRONTIER COMMUNICATION LINE
- INDICATES EXISTING OVERHEAD ELECTRICAL LINE
- INDICATES EXISTING WATER LINE
- INDICATES EXISTING METAL LINE
- INDICATES EXISTING SPECTRUM COMMUNICATION LINE
- INDICATES EXISTING SEWER LINE
- INDICATES EXISTING UNDERGROUND ELECTRICAL LINE
- INDICATES PROPOSED GUARD STRIPING
- INDICATES PROPOSED YELLOW STRIPING
- INDICATES PROPOSED EDGE OF PAVEMENT
- INDICATES PROPOSED BUFFER RAILING
- INDICATES PROPOSED CURB
- INDICATES PROPOSED CONCRETE BARRIER
- INDICATES PROPOSED RETAINING WALL
- INDICATES PROPOSED STORM DRAIN IMPROVEMENTS
- INDICATES NON-RECORDED R/W FLOW SPACE
- INDICATES PROPOSED MULTI-USE TRAIL AREA
- INDICATES CURRENT DESIGN
- INDICATES EXISTING DRAINAGE
- INDICATES DRAINAGE / SCOUR COUNTER MEASURES

C:\Projects\Palm Springs\Indian Canyon\Geometrics\Geometrics_Sheets\IndianCanyon_Geometrics_Sheet_Template_Plan_Profile_Typ_Sections.dwg, Wed, 7/9/2025 9:19:16 PM

Appendix F

Traffic

Michael Baker
INTERNATIONAL

WESTERN COACHELLA VALLEY FLOOD AND BLOWSAND ROAD IMPROVEMENT PROJECT

PALM SPRINGS, CALIFORNIA

INDIAN CANYON DRIVE TRAFFIC STUDY

Prepared For:

Coachella Valley Association of Governments

Update: April 13, 2026

Original Version: July 11, 2023

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1.0 Executive Summary

1.1 Introduction

The Coachella Valley Association of Governments (CVAG) has proposed road improvements along Indian Canyon Drive to safely convey floodwaters while at the same time allowing for the continuation of blowsand movement. These road improvements are located in the City of Palm Springs (City), in Riverside County, California. The proposed road improvements consist of installation of a bridge structure, multi-use trail, and lift station along Indian Canyon Drive. The purpose and need of the Project is to mitigate the adverse impacts of flood and blowsand events that occur along Indian Canyon Drive and the local vicinity. A previous report prepared by Michael Baker International, Flood & Blowsand Risk Assessment and Improvement Plan for Western Coachella Valley [November 2020] (**2020 Risk Assessment**), identified this location as an area of concern.

The proposed improvements include:

- **Elevated Roadway Bridge System** – Construct an elevated roadway bridge system along a portion of the Whitewater River to improve drainage crossing Indian Canyon Drive. The bridge would be approximately 1,280-feet in length, and up to 20-feet high from surface elevation. The bridge foundation will be drilled piles with an approximate depth of up to 100 feet and approximately 7.5 feet in diameter. The bridge will be supported by 13 piers (including abutments) with 2 columns per pier, for a total of 26 drilled piles
- **Multi-use Trail** – An approximate 1.6-mile multi-use trail from Sunrise Parkway to Amtrak's Palm Springs Station connecting to the existing Coachella Valley Link [trail] (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection. The trail system would be located on the western side of the roadway and terminate at the Amtrak station. The multi-use trail would be a two-way Class I bikeway approximately eight feet wide.
- **Lift Station** – The existing sewer pipeline alignment would be elevated at the bridge and include a new lift station to accommodate the elevation gain. The lift station would be located near the northwest intersection at Indian Canyon Drive and Palm Spring Station Road at a site of approximately 0.25-acres. The lift station would be constructed on a 20 foot by 20 foot concrete pad and would include an 84-inch diameter manhole with two submersible wastewater pumps. The lift station would be accessed by a proposed 20-foot wide access road extending from Palm Springs Station Road to the lift station site. Electrical service, electrical controls, and equipment would be installed in utility cabinets on the lift station pad. Wastewater flows in the 10-inch gravity sewer in Indian Canyon Drive would be conveyed into the lift station. Flows would then be conveyed through two four-inch discharge pipes and ultimately conveyed into one four-inch force main. The force main would extend to Indian Canyon Drive and continue south.

The project is not proposing any capacity enhancements that will affect traffic operations. Under the No Build and Build conditions, the lane configuration will remain identical. Some cross-section dimensions may vary between the two conditions.

Study Locations

The study intersections evaluated as part of this effort include:

1) Indian Canyon Drive and Palm Springs Station Road
2) Indian Canyon Drive and Sunrise Parkway

Study Segments

The study segments evaluated as part of this study include:

A. Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road
B. Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway

1.2 Analysis Scenarios

The traffic study analysis scenarios have been defined as the following:

1) Existing Year 2023
2) Opening Year 2027 No Build
3) Opening Year 2027 Build
4) Design Year 2047 No Build
5) Design Year 2047 Build

1.3 Study Methodologies

For this study, the Highway Capacity Manual (HCM) 6th Edition, published by the Transportation Research Board in 2016, was utilized in this analysis to determine the operating level of service (LOS) at each of the study intersections. LOS is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and experienced delay at the intersection, measured in seconds per vehicle. Synchro version 11 software was utilized to conduct the intersection traffic operations analysis.

HCM 7th Edition methodologies were used in the evaluation of roadway segments. For two-lane facilities, LOS is based on the follower density, measured in followers per mile per lane. For multi-lane facilities, LOS is based on vehicle density, measured in passenger car per mile per lane. HCS version 2023 was utilized to conduct the segment traffic operations analysis. Riverside County segment capacity thresholds were also used to evaluate the study segments.

1.4 Traffic Volumes

Intersection turning movement counts were collected for the weekday AM Peak period and PM Peak period. Roadway segment counts were collected over multiple weekdays. Existing count data was collected in February and March 2023. Opening Year 2027 and Design Year 2047 traffic volume forecasts were developed by applying a compound annual growth rate to estimate background growth along. The growth rate was determined using information from the Palm Spring General Plan and SCAG 2020 RTP/SCS.

1.5 Other Planned Projects

The City of Palm Springs has a Project currently underway to make improvements along Indian Canyon Drive. The Indian Canyon Drive Widening Project has completed the design phase and construction is anticipated to begin in late 2023. The improvements primarily focus on widening the roadway from Palm Springs Station Drive to Garnet Avenue, providing four-lanes on the roadway and signalization of the Indian Canyon Drive and Palm Springs Station Road (#1) intersection. These improvements are assumed to be in place prior to the Opening Year of this Project.

1.6 Analysis Findings

1.6.1 Existing Year 2023

Intersection Analysis – The intersection of Indian Canyon Drive and Palm Springs Station Road (#1) operates at unacceptable LOS F and E during the AM Peak Hour and PM Peak Hour, respectively. The intersection of Indian Canyon Drive and Sunrise Parkway operates acceptably during both the AM Peak Hour and PM Peak Hour.

Segment Analysis – Based on the Highway Capacity Software (HCS) analysis, Segment B of Indian Canyon Drive operates at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour with two travel lanes per direction. Segment A of Indian Canyon Drive operates at unacceptable LOS E in the AM Peak Hour, in the southbound direction with one travel lane. Additionally, Segment A operates at unacceptable LOS E in the PM Peak Hour, in the northbound direction with one travel lane. Based on the City's capacity guidelines, the two-lane Indian Canyon Drive Segment A operates over LOS D capacity. The four-lane Indian Canyon Drive Segment B operates under LOS D capacity.

1.6.2 Opening Year 2027 No Build

Intersection Analysis – Both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour.
Segment Analysis – Both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour based on the HCS analysis. Additionally, both segments of Indian Canyon Drive operate under the City's LOS D ADT capacity.

1.6.3 Opening Year 2027 Build

Intersection Analysis – Both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour.
Segment Analysis – Both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour based on the HCS analysis. Additionally, both segments of Indian Canyon Drive operate under the City's LOS D ADT capacity.

1.6.4 Design Year 2047 No Build

Intersection Analysis – Both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour.
Segment Analysis – Both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour based on the HCS analysis. Additionally, both segments of Indian Canyon Drive operate under the City's LOS D ADT capacity.

1.6.5 Design Year 2047 Build

Intersection Analysis – Both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour.
Segment Analysis – Both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour based on the HCS analysis. Additionally, both segments of Indian Canyon Drive operate under the City's LOS D ADT capacity.

1.6.6 Analysis Conclusions

The results of the analysis indicate that the proposed Project lane configurations combined with the improvements associated with another planned projects in the area will result in acceptable traffic operational conditions during both the Opening Year 2027 and Design Year 2047. The proposed improvements associated with the flood and blowsand improvements are not anticipated to negatively impact the vehicular traffic flow in the study area.

2.0 Introduction

2.1 Project Description

The Coachella Valley Association of Governments (CVAG) has proposed road improvements along Indian Canyon Drive to safely convey floodwaters while at the same time allowing for the continuation of blowsand movement. These road improvements are located in the City of Palm Springs (City), in Riverside County, California. The proposed road improvements consist of installation of a bridge structure, multi-use trail, and lift station along Indian Canyon Drive. The purpose of the project is to construct a bridge system to address safety concerns regarding the conveyance of floodwaters and blowsand. The project needs include improving existing infrastructure to facilitate flow of floodwater and sand, improving mobility for motorists and pedestrians, and providing a multi-modal active transportation pathway. A previous report prepared by Michael Baker International, Flood & Blowsand Risk Assessment and Improvement Plan for Western Coachella Valley [November 2020] (**2020 Risk Assessment**), identified this location as an area of concern.

The proposed improvements include:

- **Elevated Roadway Bridge System** – Construct an elevated roadway bridge system along a portion of the Whitewater River to improve drainage crossing Indian Canyon Drive. The bridge would be approximately 1,280-feet in length, and up to 20-feet high from surface elevation. The bridge foundation will be drilled piles with an approximate depth of up to 100 feet and approximately 7.5 feet in diameter. The bridge will be supported by 13 piers (including abutments) with 2 columns per pier, for a total of 26 drilled piles
- **Multi-use Trail** – An approximate 1.6-mile multi-use trail from Sunrise Parkway to Amtrak's Palm Springs Station connecting to the existing Coachella Valley Link [trail] (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection. The trail system would be located on the western side of the roadway and terminate at the Amtrak station. The multi-use trail would be a two-way Class I bikeway approximately eight feet wide.
- **Lift Station** – The existing sewer pipeline alignment would be elevated at the bridge and include a new lift station to accommodate the elevation gain. The lift station would be located near the northwest intersection at Indian Canyon Drive and Palm Spring Station Road at a site of approximately 0.25-acres. The lift station would be constructed on a 20 foot by 20 foot concrete pad and would include an 84-inch diameter manhole with two submersible wastewater pumps. The lift station would be accessed by a proposed 20-foot wide access road extending from Palm Springs Station Road to the lift station site. Electrical service, electrical controls, and equipment would be installed in utility cabinets on the lift station pad. Wastewater flows in the 10-inch gravity sewer in Indian Canyon Drive would be conveyed into the lift station. Flows would then be conveyed through two four-inch discharge pipes and ultimately conveyed into one four-inch force main. The force main would extend to Indian Canyon Drive and continue south.

The project is not proposing any capacity enhancements that will affect traffic operations. Under the No Build and Build conditions, the lane configuration will remain identical. Some cross-section dimensions may vary between the two conditions.

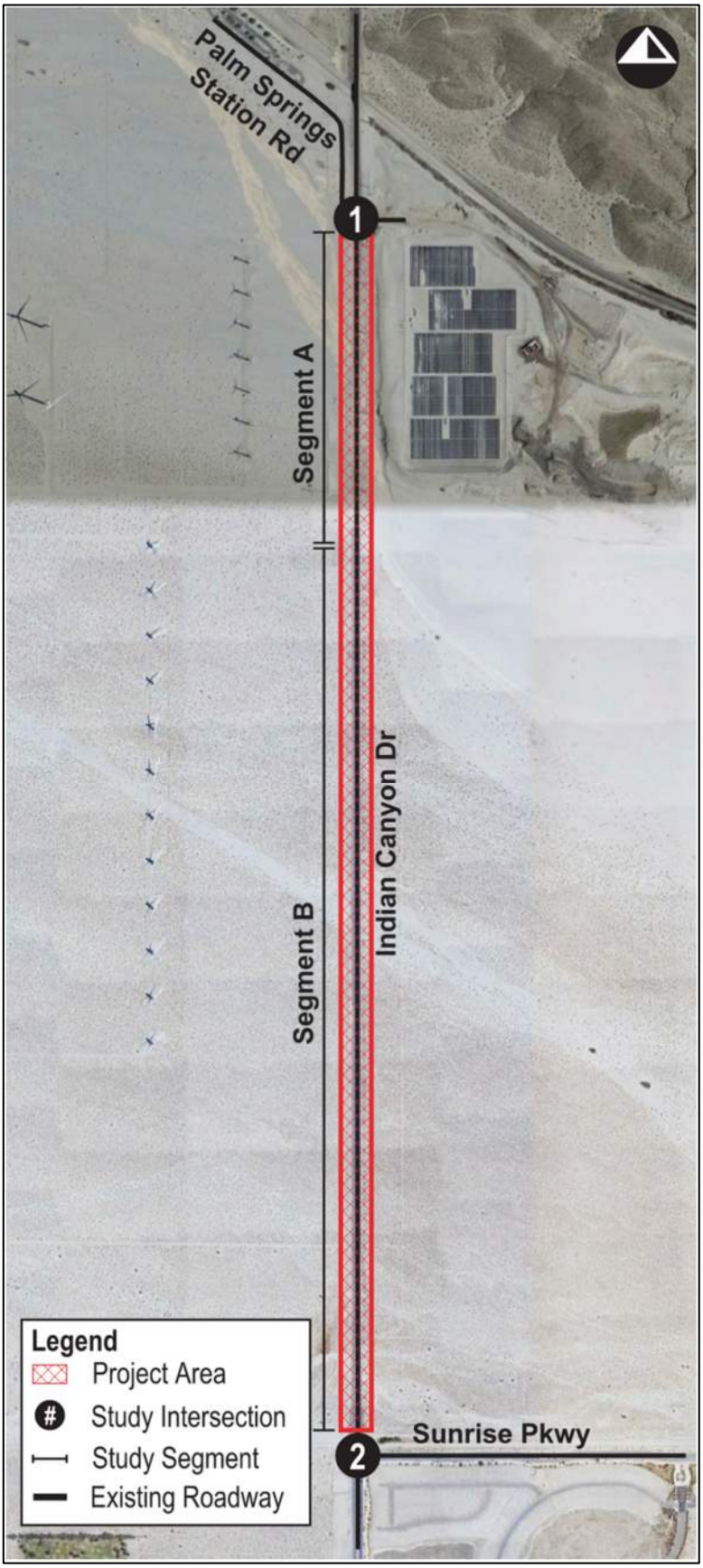
2.2 Project Location

Regionally, the Project area is located within the City of Palm Springs, California, located in Riverside County. Indian Canyon Drive is a primary north-south transportation corridor within the City that provides local transportation access, as well as regional access via an interchange with Interstate 10. The Project study area focuses on Indian Canyon Drive from Palm Springs Station Road to Sunrise Parkway. **Exhibit 2-1** shows the Project location within the region and the study area is shown in **Exhibit 2-2**.

Exhibit 2-1: Project Location



Exhibit 2-2: Study Area



2.3 Study Facilities

The southern portion of Indian Canyon Drive is currently a four-lane roadway which transitions to a two-lane roadway within the study area. Two (2) study intersections were evaluated as listed in **Table 2-1** along with their existing traffic control and the controlling jurisdiction. **Table 2-2** lists the study segments along with their segment type.

Table 2-1: Study Intersections

ID	Study Intersection	Existing Traffic Control	Jurisdiction
1	Indian Canyon Drive and Palm Springs Station Road	Two-Way Stop Control	City of Palm Springs
2	Indian Canyon Drive and Sunrise Parkway	Signalized	City of Palm Springs

Table 2-2: Study Segments

ID	Study Segment	Segment Type	Jurisdiction
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station	Two-Lane	City of Palm Springs
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	City of Palm Springs

2.4 Analysis Scenarios

The traffic study analysis scenarios have been defined as the following:

1) Existing Year 2023
2) Opening Year 2027 No Build
3) Opening Year 2027 Build
4) Design Year 2047 No Build
5) Design Year 2047 Build

3.0 Traffic Analysis Methodologies

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and experienced delay at the intersection. The *Highway Capacity Manual* (HCM), published by the Transportation Research Board, was utilized in this analysis to determine the operating LOS at each of the study intersections. LOS can range from LOS A (free-flow conditions) to LOS F (severely congested conditions).

3.1 Intersection Analysis Methodology

The *HCM* analysis methodology describes the operation of an intersection based on the corresponding average stopped delay experienced per vehicle as shown in **Table 3-1**.

Table 3-1: HCM Intersection Level of Service & Delay Thresholds

Level of Service	LOS Thresholds	
	Signalized Intersection Average Delay (seconds/vehicle)	Two-Way Stop-Controlled & All-Way Stop-Controlled Average Delay (seconds/vehicle)
LOS A	$x \leq 10$	$x \leq 10$
LOS B	$10 < x \leq 20$	$10 < x \leq 15$
LOS C	$20 < x \leq 35$	$15 < x \leq 25$
LOS D	$35 < x \leq 55$	$25 < x \leq 35$
LOS E	$55 < x \leq 80$	$35 < x \leq 50$
LOS F	$x \leq 80$	$x \leq 50$

Notes: 1) If the volume-to-capacity ratio (v/c) > 1.0, LOS = F
2) Source: Highway Capacity Manual, 6th Edition

LOS is reported for the average stopped delay per vehicle for the overall intersection (all movements) for signalized intersections and all-way stop-controlled intersections. For two-way stop-controlled intersections, LOS is reported for the worst stop-controlled approach. LOS and delay for the intersection analysis was conducted with Synchro (version 11) software and HCM 6th Edition results were reported. Storage lengths were evaluated using Synchro 95th percentile queue lengths.

3.2 Segment Analysis Methodology

HCM methodologies were also used in the evaluation of the roadway segments. LOS is defined in **Table 3-2** for each facility type.

Table 3-2: HCM Segment Level of Service Thresholds

Level of Service	LOS Thresholds		
	Multi-Lane Highway Segment (pc/mi/ln)[1]	Two-Lane Highway (followers/mi/ln)[2]	
		Higher-Speed Highways Posted Speed Limit ≥ 50 mi/h	Lower-Speed Highways Posted Speed Limit < 50 mi/h
LOS A	$x \leq 11$	$x \leq 2.0$	$x \leq 2.5$
LOS B	$11 < x \leq 18$	$2.0 < x \leq 4.0$	$2.5 < x \leq 5.0$
LOS C	$18 < x \leq 26$	$4.0 < x \leq 8.0$	$5.0 < x \leq 10.0$
LOS D	$26 < x \leq 35$	$8.0 < x \leq 12.0$	$10.0 < x \leq 15.0$
LOS E	$35 < x \leq 45$	$12 < x$	$15 < x$
LOS F	$45 < x$ Demand Exceeds Capacity	Demand Exceeds Capacity	Demand Exceeds Capacity

Notes: 1) pc/mi/ln = Passenger cars per mile per lane
2) followers/mi/ln = followers per mile per lane
3) Source: Highway Capacity Manual, 7th Edition

For two-lane highways, LOS is based on average follower density. For multi-lane highways, LOS is based on average density. LOS for the segment analysis was conducted with Highway Capacity Software 2023 (HCS) and HCM 7th Edition results were reported.

As a secondary method of evaluating the roadway segment capacity, the County of Riverside roadway traffic volume thresholds were used to evaluate segment LOS. **Table 3-3** shows the LOS traffic capacity thresholds based on roadway classification.

Table 3-3: Segment Capacity Level of Service Thresholds

Roadway Classification	Number of Lanes	Maximum Two-Way Traffic Volume (ADT)		
		LOS C	LOS D	LOS E
Major	4	27,300	30,700	34,100
Arterial	2	14,400	16,200	18,000
Arterial	4	28,700	32,300	35,900
Urban Arterial	4	28,700	32,300	35,900
Urban Arterial	6	43,100	48,500	53,900

Source: Riverside County Transportation Analysis Guidelines, Appendix D Level of Service Targets

3.3 Performance Criteria

Local jurisdictional performance criteria for the City of Palm Springs were identified as shown in **Table 3-4**.

Table 3-4: Performance Criteria

Jurisdiction	Performance Criteria	Source
City of Palm Springs	LOS D or better; Or maintain or improve LOS when operating below LOS D. For signalized and unsignalized intersections. LOS D or better; Or maintain or improve LOS when operating below LOS D. For roadway segments.	City of Palm Springs Traffic Impact Analysis Guidelines (July 2020)

For the purposes of this study, LOS D or better has been defined as the minimum acceptable LOS.

3.4 Analysis Software

Synchro version 11 and HCS version 2023 were utilized to conduct the traffic operations analysis for this study.

4.0 Existing Conditions

4.1 Existing Roadway Characteristics

The roadway network included within the traffic study Project area was evaluated. The characteristics of each road are discussed below.

Indian Canyon Drive

Indian Canyon Drive is generally a four-lane roadway in the City of Palm Springs. Regionally it travels north-south from Twentynine Palms Highway in the north to Palm Canyon Drive. Within the Study area, approximately 2,300 feet south of Palm Springs Station Road, Indian Canyon Road transitions into a two-lane roadway. Indian Canyon Drive provides access to Interstate 10 and crosses the Whitewater Wash. The City of Palm Springs 2040 General Plan (City General Plan) identifies the section of Indian Canyon Drive within the study area as a four-lane divided Major Thoroughfare. The posted speed limit within the Project vicinity is 55 miles per hour (mph).

Palm Springs Station Road

Palm Springs Station Road is a two-lane roadway in the City of Palm Springs. It provides access to the Palm Springs train station and connects to Indian Canyon Drive. The eastern leg of the Palm Springs Station Road and Indian Canyon Drive intersection is the access road for an industrial facility. The City General Plan identifies Palm Springs Station Road as a Local roadway. The posted speed limit within the Project vicinity is 15 mph.

Sunrise Parkway

Sunrise Parkway is generally a four-lane roadway in the City of Palm Springs. It provides access to a residential development that is currently under construction and connects to Indian Canyon Drive on the east side. A curb cut currently exists on Sunrise Parkway on the west leg of the Indian Canyon Drive and Sunrise Parkway intersection however, this section of roadway currently does not exist. The City General Plan identifies Sunrise Parkway as a four-lane divided Secondary Thoroughfare. The prima facie speed limit on Sunrise Parkway is assumed to be 25 mph.

Bicycle and Pedestrian Accommodations

Within the study area, there are no striped bike lanes provided along Indian Canyon Drive. Additionally, no pedestrian facilities are provided along Indian Canyon Drive from Sunrise Parkway to Garnet Avenue.

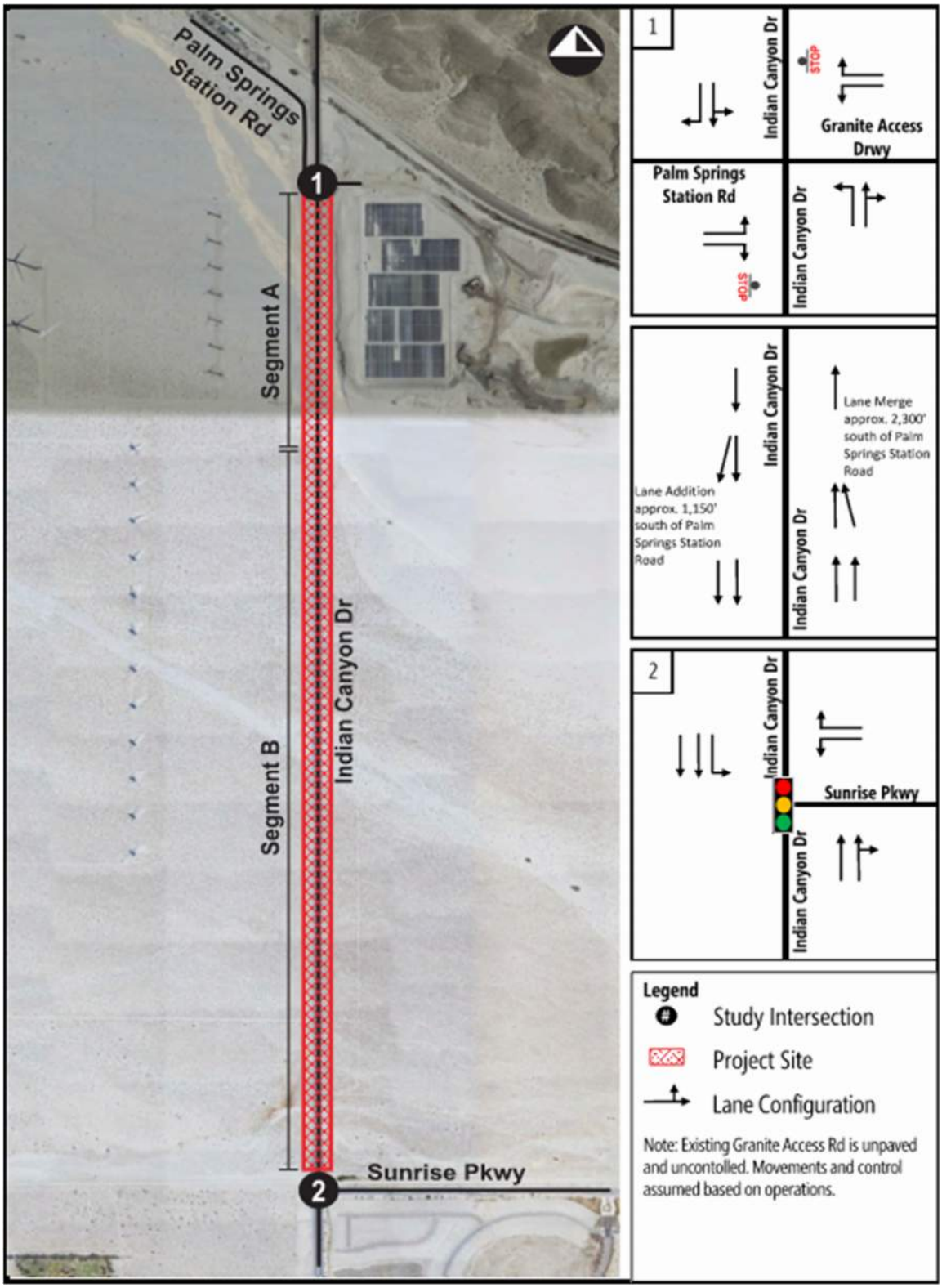
Table 4-1 summarizes the functional classification, the posted speed limit, and the travel lane characteristics. **Exhibit 4-1** shows the existing lane configuration in the study area.

Table 4-1: Roadway Characteristics Summary

Roadway	Functional Classification	Posted Speed Limit	Existing Travel Lane Characteristics
Indian Canyon Drive	Major Thoroughfare	55	Generally divided two lanes per direction; narrows to one lane per direction near Palm Springs Station Road
Palm Springs Station Road (west of Indian Canyon Drive)	Local Road	15	One lane per direction
Sunrise Parkway (east of Indian Canyon Drive)	Secondary Thoroughfare	25[1]	Generally divided two lanes per direction

Note: 1) Assumed prima facie speed limit

Exhibit 4-1: Existing Lane Configuration


Palm Springs Station Rd
1
Segment A
Segment B
Indian Canyon Dr
2
Sunrise Pkwy
1
Indian Canyon Dr
STOP
Granite Access Drwy
Palm Springs Station Rd
STOP
Indian Canyon Dr
Indian Canyon Dr
Lane Addition approx. 1,150' south of Palm Springs Station Road
Lane Merge approx. 2,300' south of Palm Springs Station Road
Indian Canyon Dr
2
Indian Canyon Dr
Sunrise Pkwy
Indian Canyon Dr
Legend
Study Intersection
Project Site
Lane Configuration
Note: Existing Granite Access Rd is unpaved and uncontolled. Movements and control assumed based on operations.

4.2 Existing Traffic Volumes

4.2.1 Traffic Counts

Intersection Turning Movement Counts

Traffic volume data was collected on Tuesday February 7th, 2023. Data collected included classified vehicle counts, pedestrian counts, and bicycle counts. **Table 4-2** identifies the date for each count used in the analysis and the peaking characteristics at each of the corridor intersections. **Appendix A** contains the intersection turning movement counts.

Table 4-2: Intersection Turning Movement Count Information

Intersection		Count Date	Peak Hour Time Period / Total Volume Entering	
			AM Peak (6 AM – 9 AM)	PM Peak (3 PM – 6 PM)
1	Indian Canyon Drive and Palm Springs Station Road	2/7/2023 (Tuesday)	7:15 AM – 8:15 AM	3:30 PM – 4:30 PM
			1,570	1,457
2	Indian Canyon Drive and Sunrise Parkway	2/7/2023 (Tuesday)	7:15 AM – 8:15 AM	3:00 PM – 4:00 PM
			1,502	1,443

Note: 1) Total volume entering intersection values are actual count data, not adjusted for balancing

24-Hour Automatic Traffic Recorder Counts

Traffic data was collected along Indian Canyon Road for a 72-hour period. Data collected included classified vehicle counts and speed data. **Table 4-3** summarizes the segment traffic data for all three days. **Appendix B** contains the segment count data.

Table 4-3: Automatic Traffic Recorder Count Information

Location	Count Date	ADT	Daily 85th Percentile Speed (mph)	Daily Average Speed (mph)	Daily Heavy Vehicle Percentage
Indian Canyon Drive between Palm Springs Station Road and Sunrise Parkway	03/07/2023 Tuesday	17,567	66	60	4%
	03/08/2023 Wednesday	17,244	66	60	5%
	03/09/2023 Thursday	19,228	67	61	6%
	Average Weekday	18,000	66	60	5%

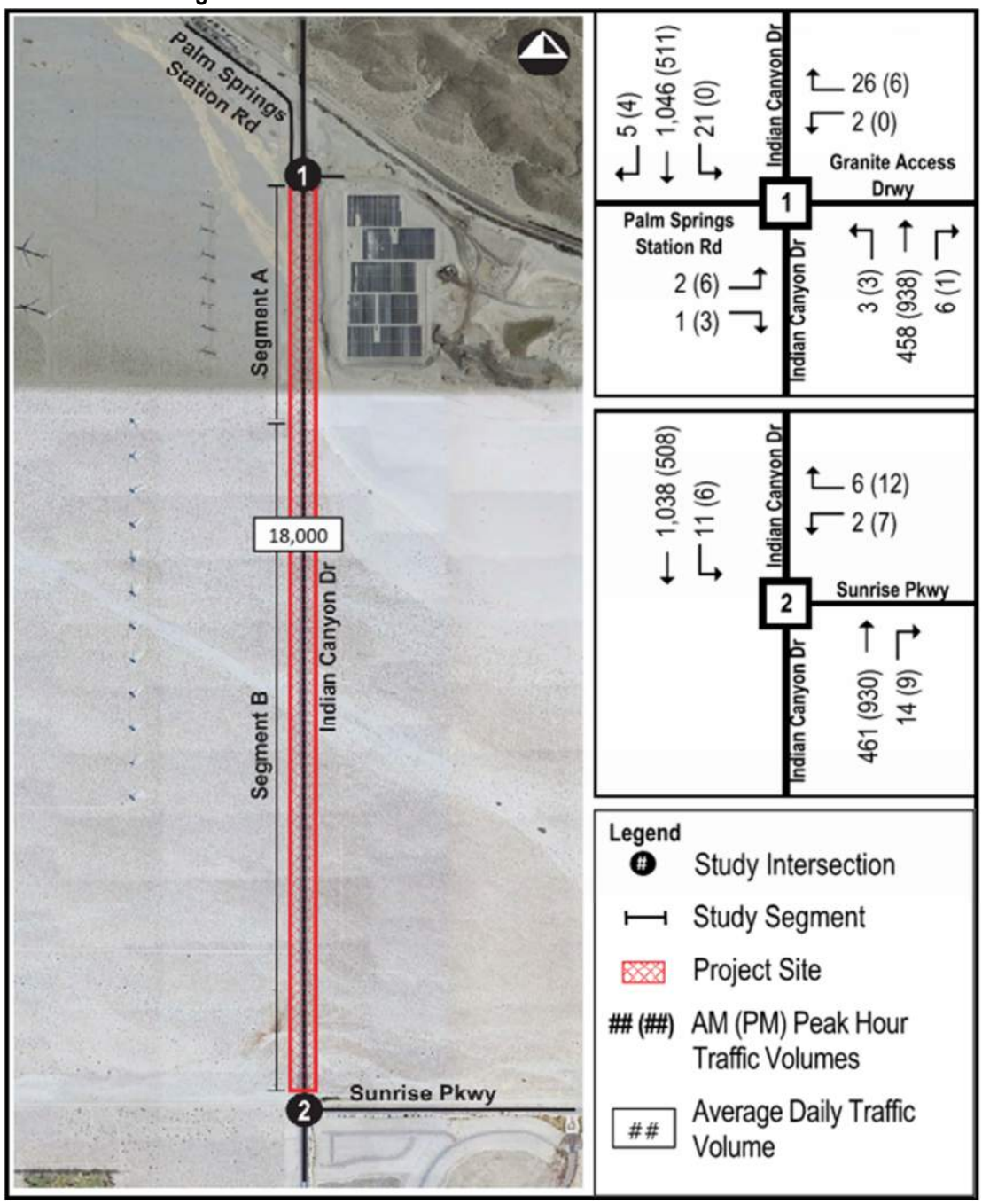
Notes: 1) Average Weekday ADT is rounded to the nearest hundred

3) Heavy Vehicle Percentage assumes FHWA vehicle classes 1, 2, 3, and 5 as light vehicles

4.2.2 Existing Year Traffic Volumes

The Existing Year traffic volumes were developed by balancing between the two study intersections. No other adjustments were made to the count data to develop the traffic volumes. The Existing Year Average Daily Traffic (ADT) volumes were developed by rounding the three-day average automatic traffic recorder (ATR) counts and rounding to the nearest hundred. **Exhibit 4-2** shows the Existing Year traffic volumes.

Exhibit 4-2: Existing Year Traffic Volumes



4.3 Historical Collision Data Review – Indian Canyon Drive

Historical collision data was reviewed in the Project area. For Indian Canyon Drive, the data examined was for the approximate 6-year time period from January 1, 2017, through December 31, 2022. Collision data along Indian Canyon Drive was obtained from the Statewide Integrated Traffic Records System (SWITRS), provided by California Highway Patrol (CHP). The SWITRS data included the most recently available 2022 data; however, all collisions may not be included in the data set at the time of analysis due to processing backlogs. For the historical collision data review the study limits are along Indian Canyon Drive from the Union Pacific Railroad in the north, to 500 feet south of Sunrise Parkway.

At total of 32 collisions were reported in the study area during this approximate 6-year period. The data review considered multiple features including the type of collision, violation type, severity, and weather conditions. **Table 4-4** through **Table 4-10** summarize the collision characteristics.

Table 4-4: Collision Summary by Severity and Year

Year	Number of Collisions						Percent of Total Collisions
	Fatal	Injury (Serious)	Injury (Minor)	Injury (Possible)	Property Damage Only	Total	
2017	0	0	0	2	1	3	9%
2018	1	0	1	2	1	5	16%
2019	1	1	0	3	0	5	16%
2020	0	0	0	1	0	1	3%
2021	0	0	1	1	3	5	16%
2022	0	1	4	4	4	13	41%
Total	**2**	**2**	**6**	**13**	**9**	**32**	**100%**

Note: 1) Percent values may not total exactly 100% due to rounding

Table 4-5: Collisions Summary by Time of Day

Time of Day	Total	
	Number of Collisions	Percent
0:00 – 2:59	5	16%
3:00 - 5:59	2	6%
6:00 - 8:59	4	13%
9:00 - 11:59	1	3%
12:00 - 14:59	10	31%
15:00 - 17:59	5	16%
18:00 - 20:59	3	9%
21:00 - 23:59	2	6%
Total	**32**	**100%**

Note: 1) Percent values may not total exactly 100% due to rounding

Table 4-6: Collisions Summary by Weather Condition

Weather Condition	Total	
	Number of Collisions	Percent
Clear	23	72%
Cloudy	2	6%
Raining	1	3%
Wind	6	19%
Total	**32**	**100%**

Note: 1) Percent values may not total exactly 100% due to rounding

Table 4-7: Collision Type Summary

Collision Type	Total	
	Number of Collisions	Percent
Head-On	2	6%
Sideswipe	3	9%
Rear End	11	34%
Broadside	3	9%
Hit Object	6	19%
Overturned	4	13%
Other	3	9%
Total	**32**	**100%**

Note: 1) Percent values may not total exactly 100% due to rounding

Table 4-8: Collisions Summary by Violation Type

Violation Type	Total	
	Number of Collisions	Percent
Unsafe Speed	9	28%
Driving or Bicycling Under the	5	16%
Unsafe Lane Change	5	16%
Wrong Side of Road	3	9%
Other Than Driver (or Pedestrian)	3	9%
Improper Turning	2	6%
Automobile Right of Way	2	6%
Following Too Closely	1	3%
Other Equipment	1	3%
Unknown	1	3%
Total	**32**	**100%**

Note: 1) Percent values may not total exactly 100% due to rounding

Table 4-9: Pedestrian & Bicycle Collision Summary by Year

Collision involving	Number of Collisions						Percent
	Fatal	Injury (Serious)	Injury (Minor)	Injury (Possible)	Property Damage Only	Total	
Bicycle	0	1	0	0	0	1	50%
Pedestrian	1	0	0	0	0	1	50%
Total	**1**	**1**	**0**	**0**	**0**	**2**	**100%**

Table 4-10: Collisions Summary by Segment

Location		Segment Length (miles)	Total	
			Number of Collisions	Percent
A	Indian Canyon Drive – from Railroad to approximately 4,300 feet south of Palm Springs Station Road	0.98	24	75%
B	Indian Canyon Drive – from 4,300 feet south of Palm Springs Station Road to 500 feet south of Sunrise Parkway	0.91	8	25%
Total		**1.89**	**32**	**100%**

4.3.1 Collision Review Findings

Overall

- A total of 32 collisions were reported during the 6-year analysis period in the study area.
- The majority of the collision types within the intersection are classified as "Rear End" (34%, or 11 of 32 collisions). The analysis shows that the "Hit Object" collisions occurred at different locations, thus indicating that a single fixed object is not likely to be a contributing factor.

- Collisions predominately occurred during clear weather conditions; however other weather conditions account for over 25% of collisions. It should be noted that this section of Indian Canyon Drive is often closed during inclement weather.
- The primary violation types are unsafe speed (28% or 9 of 32 collisions), Driving Under the Influence (16% or 5 of 32 collisions), and Unsafe Lane Change (16% or 5 of 32 collisions).

Injuries and Fatalities

- A majority of collisions resulted in less than minor injury (88% or 28 of 32 collisions).
- 2 serious injuries and 2 fatalities were reported in the study area during the 6-year period.
- On November 27, 2018, approximately 4,000 feet south the intersection of Indian Canyon Drive and Palm Spring Station Road, a vehicle travelling northbound collided with a parked vehicle and pedestrian outside of the vehicle, resulting in two fatalities.
- On August 26, 2019, approximately 500 feet south of the intersection of Indian Canyon Drive and Sunrise Parkway, a southbound rear end collision resulted in a multi-vehicle incident resulting in two fatalities and serious injuries to two individuals.

Pedestrian- and Bicycle-Related

- The aforementioned November 27, 2018, collision resulted in what has been identified as a pedestrian fatality where an individual was parked on the side of the roadway and outside their vehicle.
- On September 28, 2019, approximately 600 feet north of the intersection of Indian Canyon Drive and Palm Springs Station Road, a vehicle collided with a bicyclist resulting in serious and minor injuries.

4.4 Existing Traffic Operations Analysis Results

4.4.1 Intersections

Traffic operations analysis was conducted for the study intersections. Existing Year Synchro traffic analysis results are shown in **Table 4-11**. As shown the stop-controlled intersection of Indian Canyon Drive and Palm Springs Station Road (#1) operates at unacceptable LOS F and E during the AM Peak Hour and PM Peak Hour, respectively. The intersection of Indian Canyon Drive and Sunrise Parkway operates acceptably during both the AM Peak Hour and PM Peak Hour. The **Appendix C** includes the Existing Year Synchro worksheets for both study intersections.

Table 4-11: Existing Year 2023 Intersection Level of Service and Delay

Intersection		Existing Traffic Control	Existing Year 2023			
			AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1	Indian Canyon Drive and Palm Springs Station Road	Stop Control	**F**	**54.3**	**E**	**40.4**
2	Indian Canyon Drive and Sunrise Parkway	Signal	A	5.5	A	6.9

Notes: 1) Worst approach LOS provided for stop-controlled intersections; Overall intersection LOS provided for signalized intersections
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below acceptable LOS D or better
4) Delay shown in seconds per vehicle

4.4.2 Segments

Traffic operations analysis was conducted for the roadway segments for the Existing Year 2023 condition. Existing Year 2023 HCS traffic analysis results for the roadway segments are shown in **Table 4-12.** As shown, the four-lane Indian Canyon Drive Segment B operates at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour. The two-lane Indian Canyon

Drive Segment A operates at unacceptable LOS E in the AM Peak Hour in the southbound direction. Additionally, Segment A operates at unacceptable LOS E in the PM Peak Hour in the northbound direction. **Appendix D** includes the Existing Year HCS worksheets.

Table 4-12: Existing Year 2023 Segment Level of Service (HCS)

ID	Study Segment	Segment Type	Direction	Existing Year 2023					
				AM Peak Hour			PM Peak Hour		
				LOS	Follower Density	Density	LOS	Follower Density	Density
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Two-Lane	NB	C	4.7	--	**E**	**13.0**	--
			SB	**E**	**17.0**	--	C	6.1	--
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	NB	A	--	4.3	A	--	8.5
			SB	A	--	10.2	A	--	5.0

Notes: 1) Two-Lane LOS reports Follower Density; Four-Lane LOS reports Density
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below acceptable LOS D or better
4) Follower Density shown in followers/mile/lane
5) Density shown in passenger car/mile/lane

Table 4-13 summarizes the existing segment results per the City capacity values. As shown, the two-lane Indian Canyon Drive Segment A operates over LOS D capacity. The four-lane Indian Canyon Drive Segment B operates under LOS D capacity.

Table 4-13: Existing Year 2023 Segment Capacity (County Thresholds)

ID	Segment	Segment Type	Existing Year 2023 ADT	LOS D Capacity	LOS D or Better?
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Two-Lane	18,000	16,200[1]	**No**
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	18,000	30,700[2]	Yes

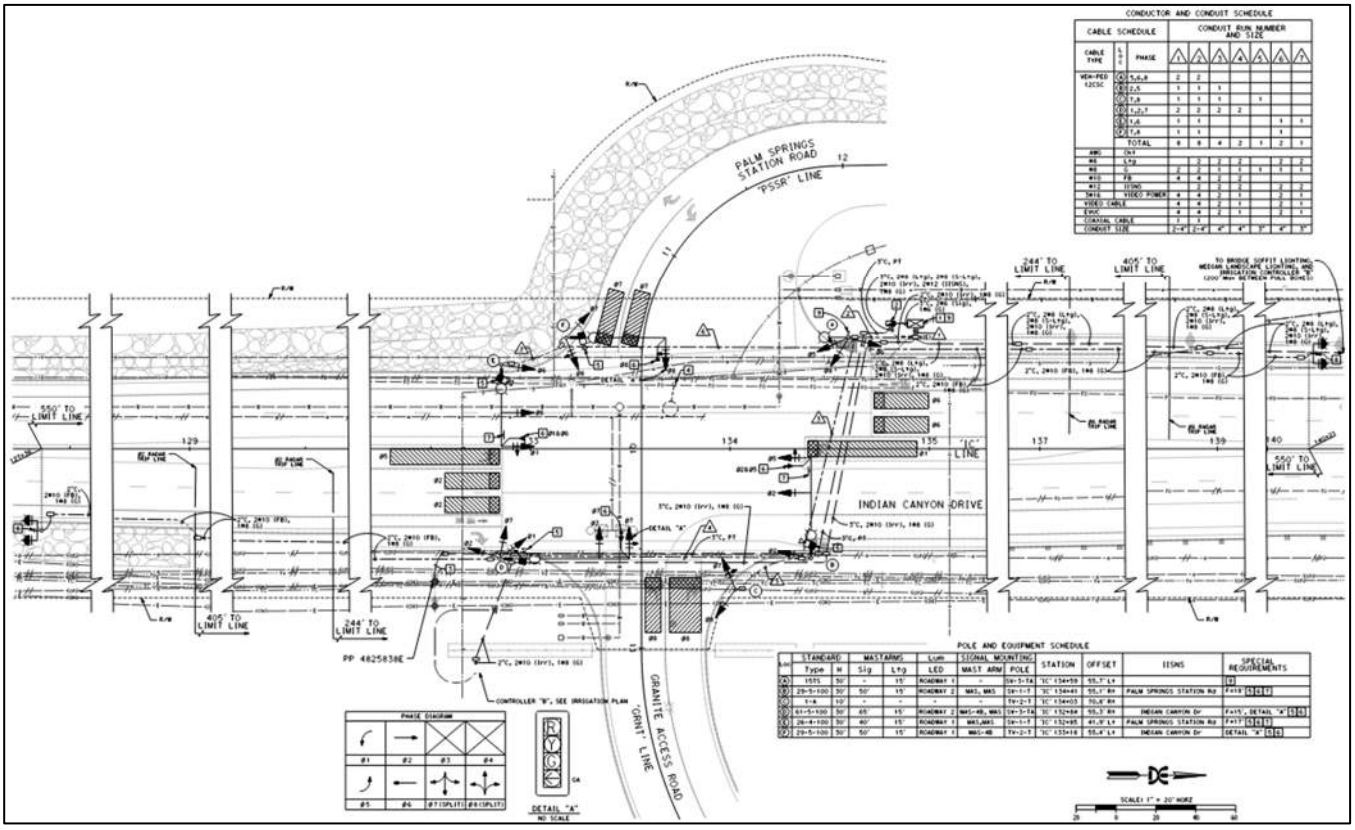
Note: 1) Capacity of a two-lane Arterial roadway from *Riverside County Transportation Analysis Guidelines, Appendix D*
2) Capacity of a four-lane Major roadway from *Riverside County Transportation Analysis Guidelines, Appendix D*

5.0 Planned Improvements

5.1 Other Planned Projects

The City of Palm Springs has a Project currently underway to make improvements along Indian Canyon Drive. The Indian Canyon Drive Widening Project has completed the design phase and construction is anticipated to begin in late 2023. The improvements primarily focus on widening the roadway, from Palm Springs Station Drive to Garnet Avenue, providing four-lanes on the roadway. In addition to the widening, the Project would signalize the intersection of Indian Canyon Drive and Palm Springs Station Road (#1) as shown in **Exhibit 5-1**. While this focus primarily on Indian Canyon Drive north of Palm Springs Station Drive, a portion of the widening extends into the northern proposed Project study area.

Exhibit 5-1: Indian Canyon Drive and Palm Springs Station Road Improvement Plans



Source: Indian Canyon Drive Widening Improvement Plans, Electrical Plans, Dokken Engineering

5.2 Project Build Alternative

The Project proposes road improvements along Indian Canyon Drive to safely convey floodwaters while at the same time allowing for the continuation of blowsand movement. The proposed road improvements consist of installation of a bridge structure, multi-use trail, and lift station along Indian Canyon Drive. This area was previously identified as an area of concern in the **2020 Risk Assessment**.

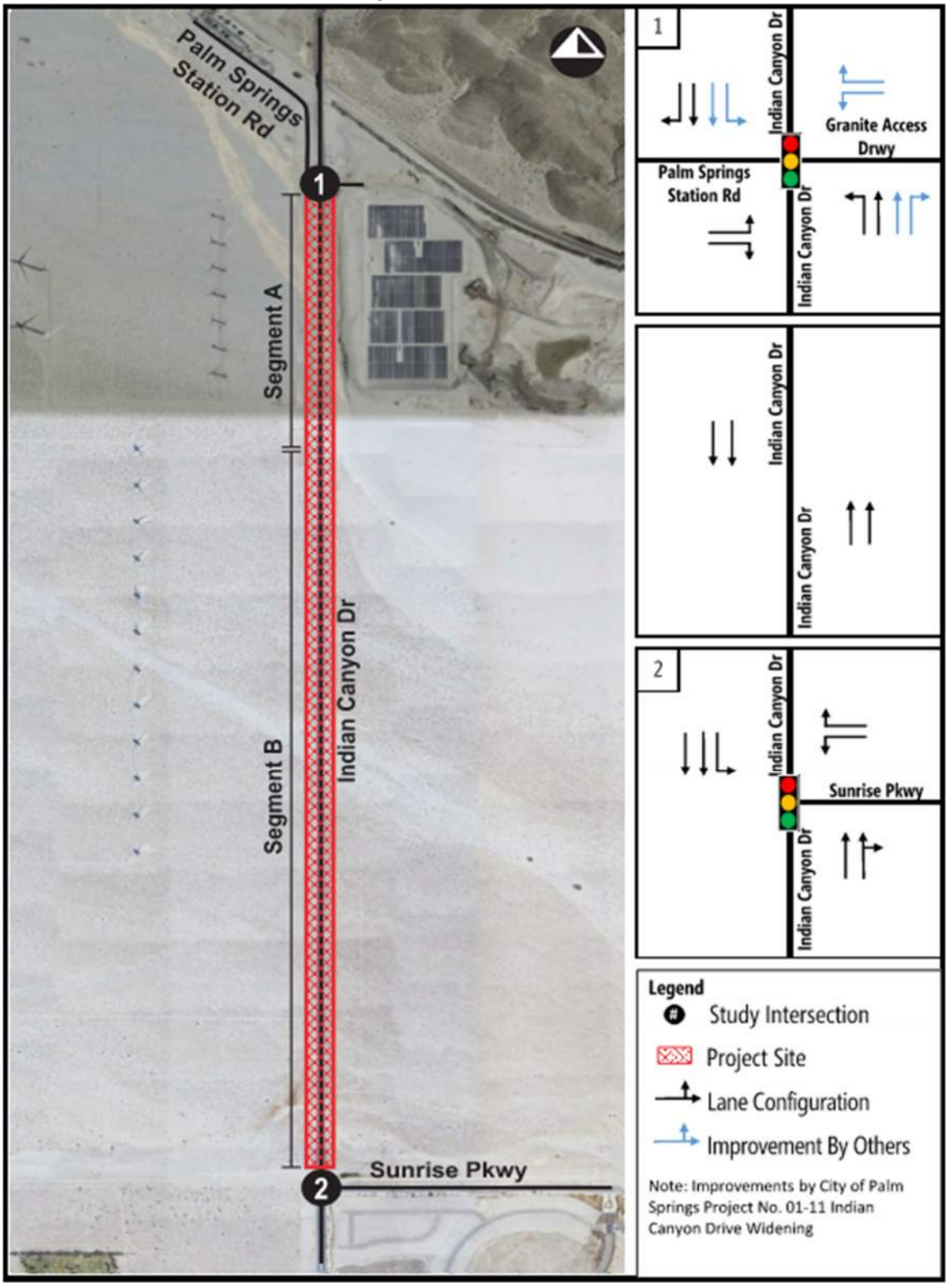
The proposed improvements include:

- Elevated Roadway Bridge System along a portion of the Whitewater River to improve drainage crossing Indian Canyon Drive. The bridge would be approximately 1,280-feet in length, and up to 20-feet high from surface elevation. The bridge foundation will be drilled piles with an approximate depth of up to 100 feet and approximately 7.5 feet in diameter. The bridge will be supported by 13 piers (including abutments) with 2 columns per pier, for a total of 26 drilled piles

- An approximate 1.6-mile multi-use trail from Sunrise Parkway to Amtrak's Palm Springs Station connecting to the existing Coachella Valley Link [trail] (40-mile regional multi-modal pathway) at the Sunrise Parkway intersection. The trail system would be located on the western side of the roadway and terminate at the Amtrak station.
- The existing sewer pipeline alignment would be elevated at the bridge and include a new lift station to accommodate the elevation gain. The lift station would be located near the northwest intersection at Indian Canyon Drive and Palm Spring Station Road at a site of approximately 0.25-acres. The lift station would be constructed on a 20 foot by 20 foot concrete pad and would include an 84-inch diameter manhole with two submersible wastewater pumps. The lift station would be accessed by a proposed 20-foot wide access road extending from Palm Springs Station Road to the lift station site. Electrical service, electrical controls, and equipment would be installed in utility cabinets on the lift station pad. Wastewater flows in the 10-inch gravity sewer in Indian Canyon Drive would be conveyed into the lift station. Flows would then be conveyed through two four-inch discharge pipes and ultimately conveyed into one four-inch force main. The force main would extend to Indian Canyon Drive and continue south.

Exhibit 5-2 shows the Build condition lane configuration. Due to the proposed Project and projects by others, cross-sections may vary between the No Build and Build conditions. However, the lane configuration will remain the same between the No Build and Build conditions. **Appendix E** contains the Project geometric approval drawing.

Exhibit 5-2: Build Condition Lane Configuration



6.0 Forecasted Traffic Volumes

6.1 Background Growth

An ambient traffic growth rate is required to forecast the Opening Year 2027 and Design Year 2047 traffic volumes. The traffic growth rate was determined using Palm Spring General Plan population trends and SCAG 2020 RTP/SCS population, household, and employment data. From this information, a 1.0% compound annual growth rate was used for the volume forecasts.

6.2 Cumulative Projects

Planned and approved development projects (cumulative projects) in the area were also considered in addition to background traffic growth. Projects included in the cumulative project development were coordinated with the City of Palm Springs. Cumulative project traffic volumes were developed by referencing the City of Palm Springs Planning Projects map. **Table 6-1** shows the projects which were determined to potentially add traffic at the study area. **Exhibits 6-1** and **6-2** shows the cumulative project trips affecting the study intersections under Opening Year 2027 and Design Year 2047. Under the Opening Year 2027 condition some projects are assumed to be only 50% built out. Under the Design Year 2047 condition, all projects are assumed fully built out. **Appendix F** contains detailed cumulative projects volume development worksheets.

Table 6-1: Cumulative Projects

ID	Project Name	Location	Type	Size	Jurisdiction
1	Miralon[1]	Southeast corner of Sunrise Parkway and Indian Canyon Drive	Residential	752 single family units & 398 multi-family units	Palm Springs
2	Alure	Southwest corner of Rosa Parks Road and El Dorado Boulevard	Residential	26 single family units	Palm Springs
3	Monarch Apartments	Southeast corner of N Indian Canyon and San Rafael	Residential	60 affordable housing units	Palm Springs
4	Garnet Cultivation Facility	Garnet Road & I-10 Off-Ramp	Commercial	103,600 SF cannabis operation and dispensary facility	Palm Springs

Notes: 1) Project assumed to be 50% built out by Opening Year and 100% built out by Design Year.
2) SF = Square Feet

Exhibit 6-1: Cumulative Project Trips (Opening Year 2027)

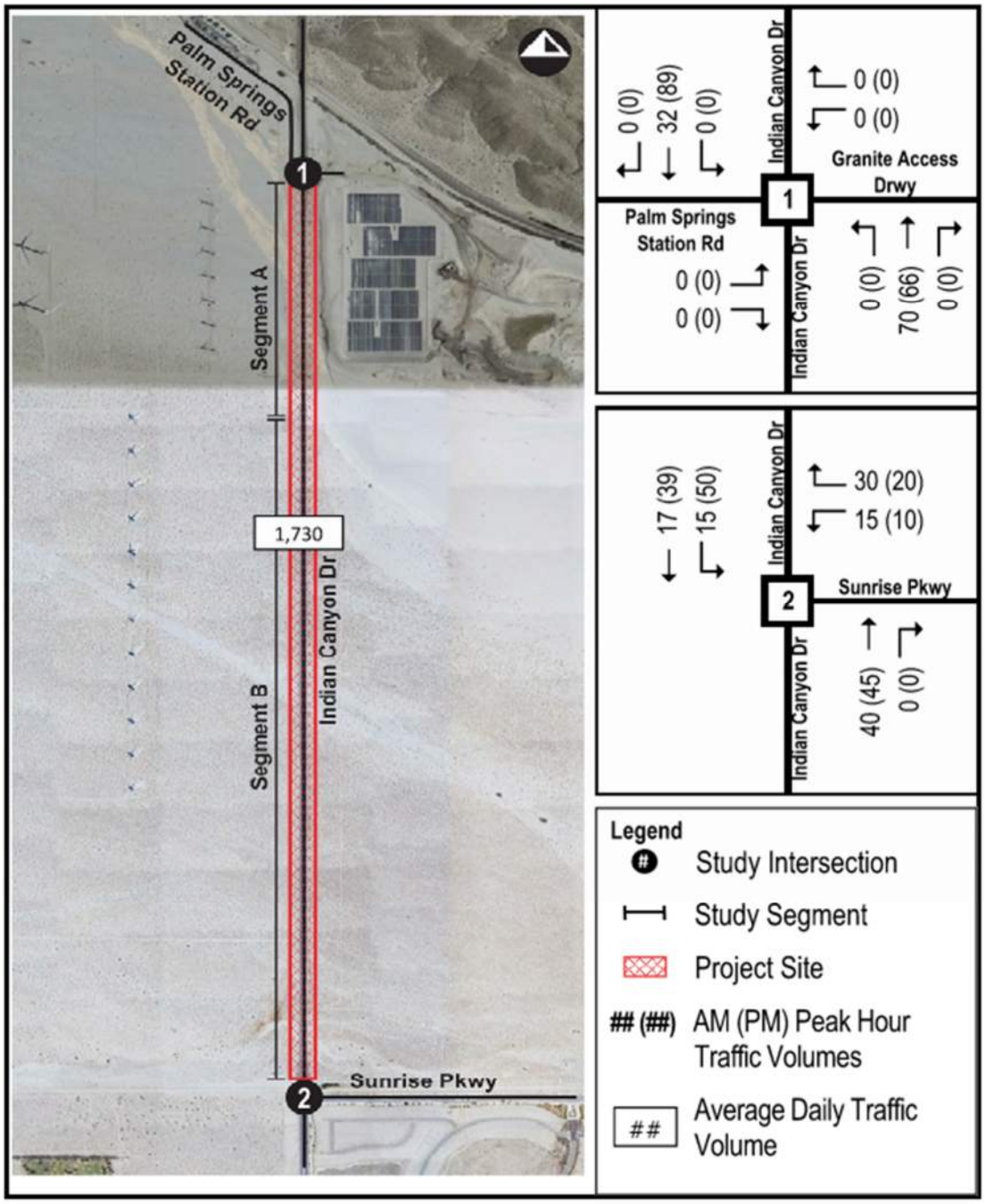
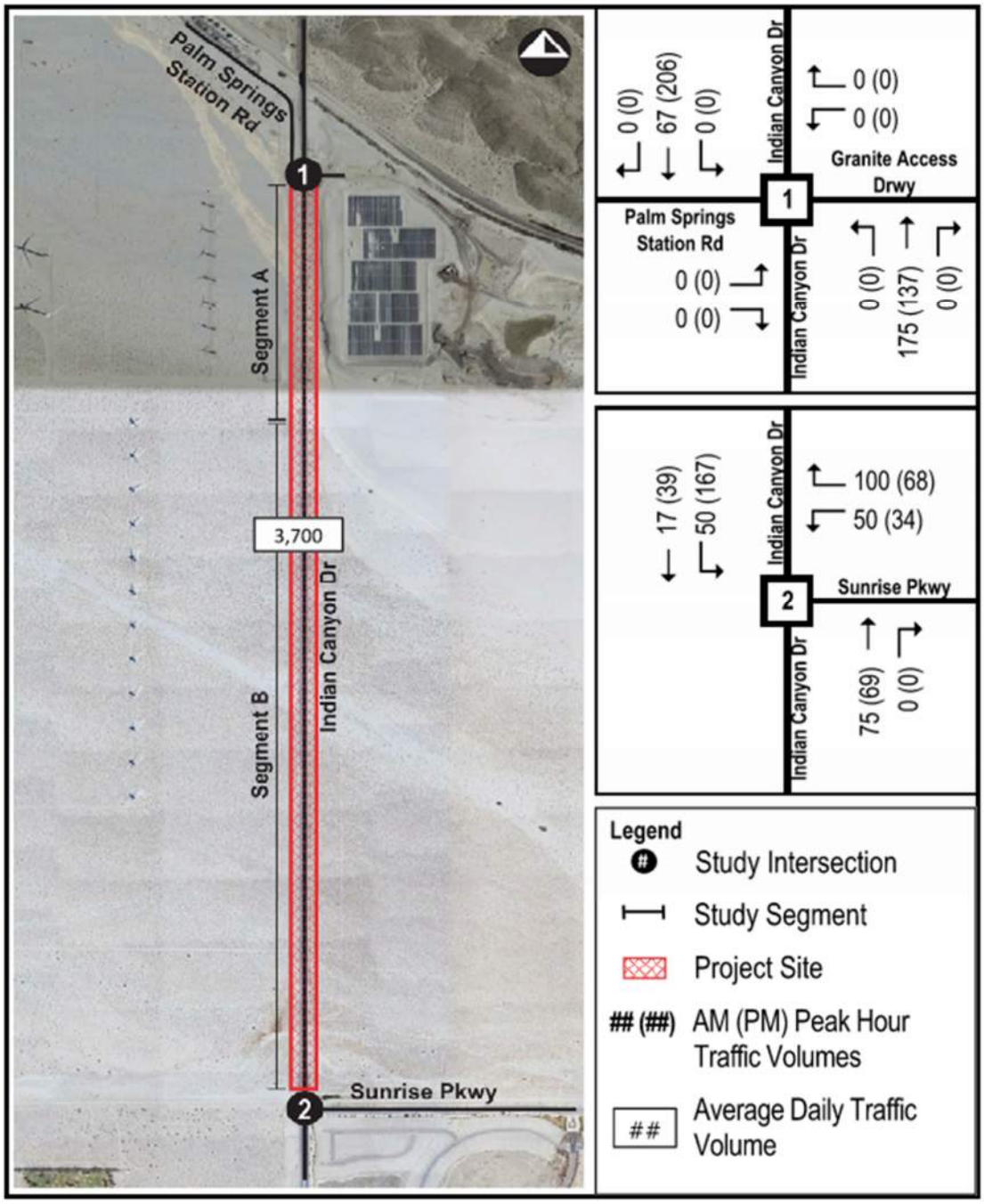


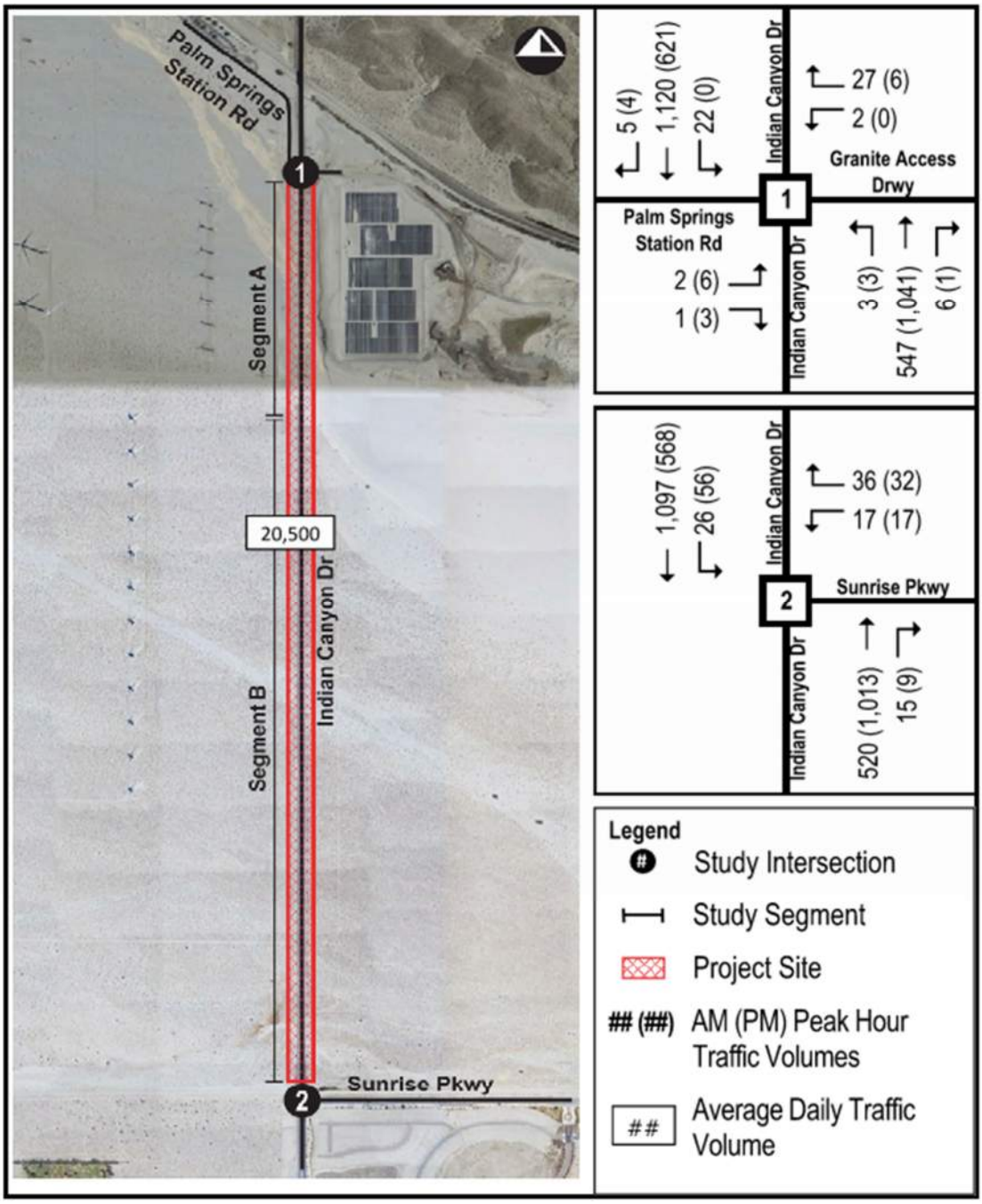
Exhibit 6-2: Cumulative Project Trips (Design Year 2047)



6.3 Opening Year 2027 Traffic Volumes

Background traffic volume growth and traffic associated with planned projects in the area were added to the Existing Year 2023 traffic volumes to develop traffic forecasts for the Opening Year 2027. **Appendix F** detailed volume development worksheets. **Exhibit 6-3** shows the Opening Year 2027 traffic volumes.

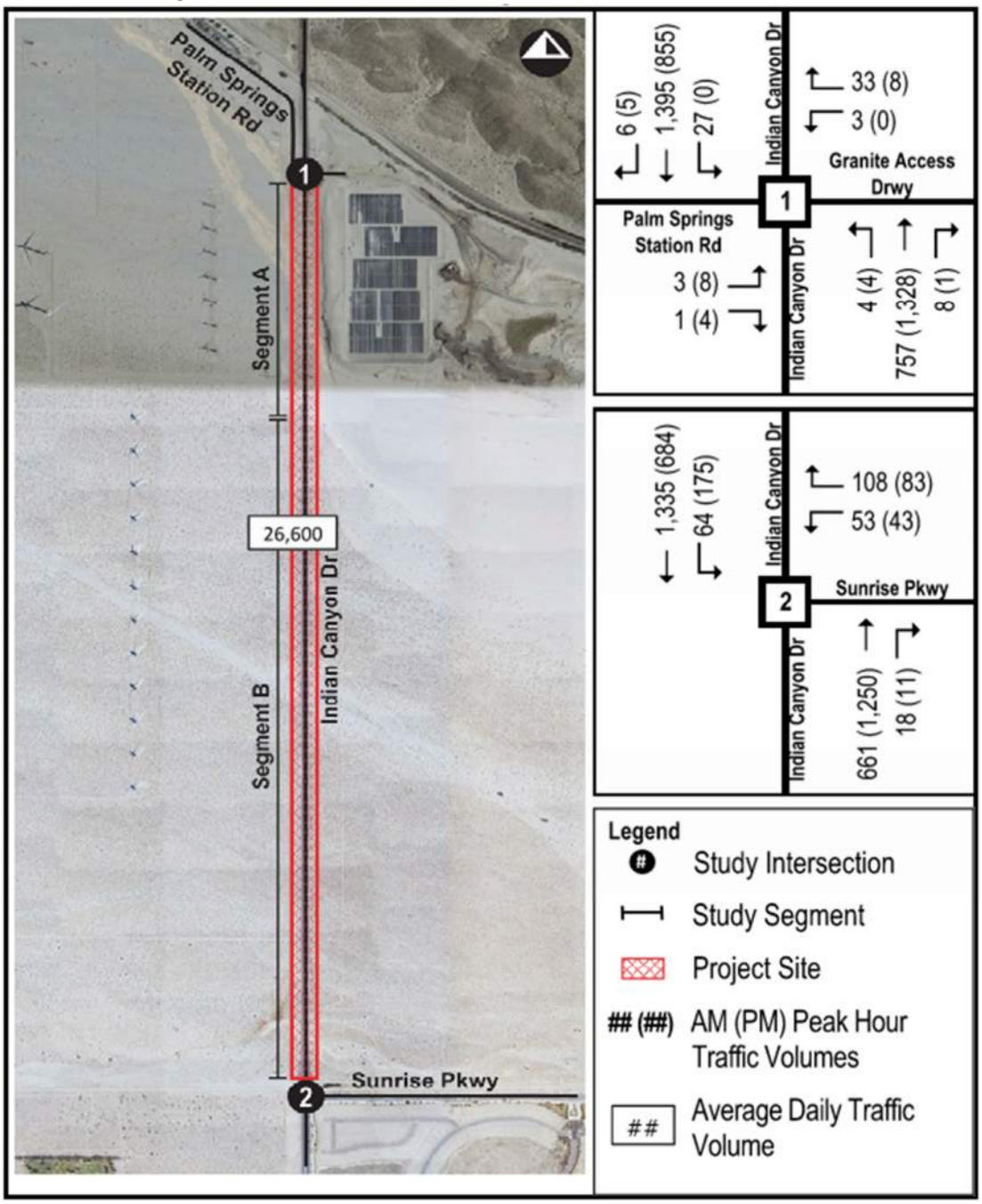
Exhibit 6-3: Opening Year 2027 Traffic Volumes



6.4 Design Year 2047 Traffic Volumes

Background traffic volume growth and traffic associated with planned projects in the area were added to the Existing Year 2023 traffic volumes to develop traffic forecasts for the Design Year 2047. **Appendix F** detailed volume development worksheets. **Exhibit 6-4** shows the Opening Year 2047 traffic volumes.

Exhibit 6-4: Design Year 2047 Traffic Volumes



7.0 Opening Year 2027 Conditions

7.1 No Build Traffic Operation Analysis Results

7.1.1 Intersections

Opening Year 2027 No Build Synchro traffic analysis results are shown in **Table 7-1**. As shown, both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour. Under the Opening Year 2027 conditions the intersection of Indian Canyon Drive and Palm Springs Station Road (#1) will be signalized as part of another planned roadway project. Refer to **Section 5.1 Other Planned Projects**. **Appendix G** includes the Opening Year 2027 No Build Synchro worksheets for both study intersections.

Table 7-1: Opening Year 2027 No Build Intersection Level of Service and Delay

Intersection		Traffic Control	Opening Year 2027 No Build			
			AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1	Indian Canyon Drive and Palm Springs Station Road	Signal	C	28.4	A	8.2
2	Indian Canyon Drive and Sunrise Parkway	Signal	A	8.0	B	11.0

Notes: 1) Overall intersection LOS provided for signalized intersections
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Delay shown in seconds per vehicle

7.1.2 Segments

Traffic operations analysis was conducted for the roadway segments for the Opening Year 2027 No Build condition. By the Opening Year 2027 No Build condition, Indian Canyon Drive from Garnet Avenue to Sunset Parkway will be a continuous four-lane roadway segment. Opening Year 2027 No Build HCS traffic analysis results for the roadway segments are shown in **Table 7-2.** As shown, both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour. **Appendix H** includes the Opening Year 2027 No Build HCS worksheets.

Table 7-2: Opening Year 2027 No Build Segment Level of Service (HCS)

ID	Study Segment	Segment Type	Direction	Opening Year 2027 No Build			
				AM Peak Hour		PM Peak Hour	
				LOS	Density	LOS	Density
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	NB	A	5.2	A	9.4
			SB	A	11.0	A	6.0
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway		NB	A	5.2	A	9.4
			SB	A	11.0	A	6.0

Notes: 1) Four-Lane LOS reports Density
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Density shown in passenger car/mile/lane

Table 7-3 summarizes the Opening Year 2027 No Build segment results per the City capacity values. As shown, both segments of Indian Canyon Drive operate under LOS D capacity.

Table 7-3: Opening Year 2027 No Build Segment Capacity (County Threshold)

ID	Segment	Segment Type	Opening Year 2027 No Build	LOS D Capacity[1]	LOS D or Better?
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	20,500	30,700	Yes
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	20,500	30,700	Yes

Note: 1) Capacity of a four-lane Major roadway from *Riverside County Transportation Analysis Guidelines, Appendix D*

7.2 Build Traffic Operation Analysis Results

Under the Project build condition, no additional travel lanes will be added to any segment of Indian Canyon Drive. As no additional capacity is being added to study intersections or segments, the build condition will not impact the analysis results. The Opening Year 2027 Build Synchro traffic analysis results are shown in **Table 7-4. Table 7-5** shows the Opening Year 2027 Build HCS traffic analysis results for the roadway segments. **Table 7-6** summarizes the Opening Year 2027 Build segment results per the City capacity values. **Appendix I** includes the Opening Year 2027 Build Synchro worksheets for both study intersections. **Appendix J** includes the Opening Year 2027 Build HCS worksheets.

Table 7-4: Opening Year 2027 Build Intersection Level of Service and Delay

Intersection		Traffic Control	Opening Year 2027 Build			
			AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1	Indian Canyon Drive and Palm Springs Station Road	Signal	C	28.4	A	8.2
2	Indian Canyon Drive and Sunrise Parkway	Signal	A	8.0	B	11.0

Notes: 1) Overall intersection LOS provided for signalized intersections
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Delay shown in seconds per vehicle

Table 7-5: Opening Year 2027 Build Segment Level of Service (HCS)

ID	Study Segment	Segment Type	Direction	Opening Year 2027 Build			
				AM Peak Hour		PM Peak Hour	
				LOS	Density	LOS	Density
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	NB	A	5.2	A	9.4
			SB	A	11.0	A	6.0
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway		NB	A	5.2	A	9.4
			SB	A	11.0	A	6.0

Notes: 1) Four-Lane LOS reports Density
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Density shown in passenger car/mile/lane

Table 7-6: Opening Year 2027 Build Segment Capacity (County Threshold)

ID	Segment	Segment Type	Opening Year 2027 Build ADT	LOS D Capacity[1]	LOS D or Better?
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	20,500	30,700	Yes
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	20,500	30,700	Yes

Note: 1) Capacity of a four-lane Major roadway from *Riverside County Transportation Analysis Guidelines, Appendix D*

8.0 Design Year 2047 Conditions

8.1 No Build Traffic Operation Analysis Results

8.1.1 Intersections

Design Year 2047 No Build Synchro traffic analysis results are shown in **Table 8-1**. As shown, both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour. **Appendix K** includes the Design Year 2047 No Build Synchro worksheets for both study intersections.

Table 8-1: Design Year 2047 No Build Intersection Level of Service and Delay

Intersection		Traffic Control	Design Year 2047 No Build			
			AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1	Indian Canyon Drive and Palm Springs Station Road	Signal	D	37.5	A	9.8
2	Indian Canyon Drive and Sunrise Parkway	Signal	A	9.5	B	16.4

Notes: 1) Overall intersection LOS provided for signalized intersections
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Delay shown in seconds per vehicle

8.1.2 Segments

Traffic operations analysis was conducted for the roadway segments for the Design Year 2047 No Build condition. Design Year 2047 No Build HCS traffic analysis results for the roadway segments are shown in **Table 8-2.** As shown, As shown, both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour. **Appendix L** includes the Design Year 2047 No Build HCS worksheets.

Table 8-2: Design Year 2047 No Build Segment Level of Service (HCS)

ID	Study Segment	Segment Type	Direction	Design Year 2047 No Build			
				AM Peak Hour		PM Peak Hour	
				LOS	Density	LOS	Density
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	NB	A	7.2	B	12.0
			SB	B	13.0	A	7.9
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway		NB	A	7.2	B	12.0
			SB	B	13.0	A	7.9

Notes: 1) Four-Lane LOS reports Density
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Density shown in passenger car/mile/lane

Table 8-3 summarizes the existing segment results per the City capacity values. As shown, As shown, both segments of Indian Canyon Drive operate under LOS D capacity.

Table 8-3: Design Year 2047 No Build Segment Capacity (County Threshold)

ID	Segment	Segment Type	Design Year 2047 No Build ADT	LOS D Capacity[1]	LOS D or Better?
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	26,600	30,700	Yes
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	26,600	30,700	Yes

Note: 1) Capacity of a four-lane Major roadway from *Riverside County Transportation Analysis Guidelines, Appendix D*

8.2 Build Traffic Operation Analysis Results

Under the Project build condition, no additional travel lanes will be added to any segment of Indian Canyon Drive. As no additional capacity is being added to study intersections or segments, the build condition will not impact the analysis results. The Design Year 2047 Build Synchro traffic analysis results are shown in **Table 8-4. Table 8-5** shows the Design Year 2047 Build HCS traffic analysis results for the roadway segments. **Table 8-6** summarizes the Design Year 2047 Build segment results per the City capacity values. **Appendix M** includes the Design Year 2047 Build Synchro worksheets for both study intersections. **Appendix N** includes the Design Year 2047 Build HCS worksheets.

Table 8-4: Design Year 2047 Build Intersection Level of Service and Delay

Intersection		Traffic Control	Design Year 2047 Build			
			AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay
1	Indian Canyon Drive and Palm Springs Station Road	Signal	D	37.5	A	9.8
2	Indian Canyon Drive and Sunrise Parkway	Signal	A	9.5	B	16.4

Notes: 1) Overall intersection LOS provided for signalized intersections
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Delay shown in seconds per vehicle

Table 8-5: Design Year 2047 Build Segment Level of Service (HCS)

ID	Study Segment	Segment Type	Direction	Design Year 2047 Build			
				AM Peak Hour		PM Peak Hour	
				LOS	Density	LOS	Density
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	NB	A	7.2	B	12.0
			SB	B	13.0	A	7.9
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway		NB	A	7.2	B	12.0
			SB	B	13.0	A	7.9

Notes: 1) Four-Lane LOS reports Density
2) LOS D or better is considered acceptable operations
3) Bold red text/gray highlight = below City preferred LOS D or better
4) Density shown in passenger car/mile/lane

Table 8-6: Design Year 2047 Build Segment Capacity (County Threshold)

ID	Segment	Segment Type	Design Year 2047 Build ADT	LOS D Capacity[1]	LOS D or Better?
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Four-Lane	26,600	30,700	Yes
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	26,600	30,700	Yes

Note: 1) Capacity of a four-lane Major roadway from *Riverside County Transportation Analysis Guidelines, Appendix D*

9.0 Findings & Conclusions

9.1 Level of Service Analysis

Table 9-1 summarizes the intersection analysis results for all scenarios. **Table 9-2** summarizes the segment capacity results for all scenarios. **Table 9-3** summarizes the segment analysis results for all scenarios.

Existing Year 2023

In the Existing Year 20223 condition, the intersection of Indian Canyon Drive and Palm Springs Station Road (#1) operates at unacceptable LOS F and E during the AM Peak Hour and PM Peak Hour, respectively. The intersection of Indian Canyon Drive and Sunrise Parkway operates acceptably during both the AM Peak Hour and PM Peak Hour.

Based on the Highway Capacity Software (HCS) analysis, Segment B of Indian Canyon Drive operates at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour with two travel lanes per direction. Segment A of Indian Canyon Drive operates at unacceptable LOS E in the AM Peak Hour, in the southbound direction with one travel lane. Additionally, Segment A operates at unacceptable LOS E in the PM Peak Hour, in the northbound direction with one travel lane. Based on the City's capacity guidelines, The two-lane Indian Canyon Drive Segment A operates over LOS D capacity. The four-lane Indian Canyon Drive Segment B operates under the City's LOS D capacity.

Opening Year 2027 No Build

In the Opening Year 2027 No Build condition, both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour. In the Opening Year 2027 No Build condition, Indian Canyon Drive from Garnet Avenue to Sunset Parkway will be a continuous four-lane roadway segment. Based on the Highway Capacity Software (HCS) analysis, both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour. Additionally, both segments of Indian Canyon Drive operate under the City's LOS D ADT capacity.

Opening Year 2027 Build

Under the Project build condition, no additional travel lanes will be added or reduced along Indian Canyon Drive. Since the Project does not result in capacity changes to study intersections or segments, the build condition will not impact the results shown under the Opening Year 2027 No Build Condition.

Design Year 2047 No Build

In the Design Year 2047 No Build condition, both study intersections operate acceptably during both the AM Peak Hour and PM Peak Hour. In the Design Year 2047 No Build condition, Indian Canyon Drive from Garnet Avenue to Sunset Parkway will be a continuous four-lane roadway segment. Based on the Highway Capacity Software (HCS) analysis, both segments of Indian Canyon Drive operate at acceptable LOS D or better during the AM Peak Hour and PM Peak Hour. Additionally, both segments of Indian Canyon Drive operate under the City's LOS D ADT capacity.

Design Year 2047 Build

Under the Project build condition, no additional travel lanes will be added or reduced along Indian Canyon Drive. Since the Project does not result in capacity changes to study intersections or segments, the build condition will not impact the results shown under the Design Year 2047 No Build Condition.

9.2 Analysis Conclusions

The results of the analysis indicate that the proposed Project lane configurations combined with the improvements associated with another planned project in the area will result in acceptable traffic operational conditions during both the Opening Year 2027 and Design Year 2047. The proposed improvements associated with the flood and blowsand improvements are not anticipated to negatively impact the vehicular traffic flow in the study area.

Table 9-1: Intersection LOS Summary Table

ID	Intersection	Control Type	Existing Year 2023				Opening Year 2027 No Build/Build				Design Year 2047 No Build/Build			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
1	Indian Canyon Drive and Palm Springs Station Road	TWSC/Signal	**F**	**54.3**	**E**	**40.4**	C	28.4	A	8.2	D	37.5	A	9.8
2	Indian Canyon Drive and Sunrise Parkway	Signal	A	5.5	A	6.9	A	8.0	B	11.0	A	9.5	B	16.4

Notes: 1) Overall intersection LOS provided for signalized intersections
2) LOS D or better is considered acceptable operations
3) TWSC/Signal= Two-Way Stop Control in the existing condition and Signal control in future conditions
4) Bold red text/gray highlight = below City preferred LOS D or better
5) Delay shown in seconds per vehicle

Table 9-2: Segment Capacity Summary Table (County Thresholds)

ID	Roadway Segment	Segment Type	Operate at LOS D or Better?[1]		
			Existing	Opening Year 2027 No Build/Build	Design Year 2047 No Build/Build
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm Springs Station Road	Two-Lane / Four-Lane[2]	**No**	Yes	Yes
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise Parkway	Four-Lane	Yes	Yes	Yes

Notes: 1) Roadway capacity obtained from Riverside County Transportation Analysis Guidelines, Appendix D
2) Two-Lane / Four-Lane = Existing condition is two-lane roadway segment and future conditions are four-lane roadway segment

Table 9-3: Segment LOS Summary Table (HCS)

ID	Study Segment	Segment Type	Direction	Existing Year 2023						Opening Year 2027 No Build/Build				Design Year 2047 No Build/Build			
				AM Peak Hour			PM Peak Hour			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				LOS	Follower Density	Density	LOS	Follower Density	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density
A	Indian Canyon Drive from Palm Springs Station Road to approximately 2,300 feet south of Palm	Two-Lane / Four-Lane	NB	C	4.7	--	**E**	**13.0**	--	A	5.2	A	9.4	A	7.2	B	12.0
			SB	**E**	**17.0**	--	C	6.1	--	A	11.0	A	6.0	B	13.0	A	7.9
B	Indian Canyon Drive from approximately 2,300 feet south of Palm Springs Station Road to Sunrise	Four-Lane	NB	A	--	4.3	A	--	8.5	A	5.2	A	9.4	A	7.2	B	12.0
			SB	A	--	10.2	A	--	5.0	A	11.0	A	6.0	B	13.0	A	7.9

Notes: 1) Two-Lane LOS reports Follower Density; Four-Lane LOS reports Density
2) LOS D or better is considered acceptable operations
3) Two-Lane / Four-Lane = Existing condition is two-lane roadway segment and future conditions are four-lane roadway segment
4) Bold red text/gray highlight = below City preferred LOS D or better
5) Follower Density shown in followers/mile/lane
6) Density shown in passenger car/mile/lane

Appendix A: Intersection Traffic Count Data

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks - Buses

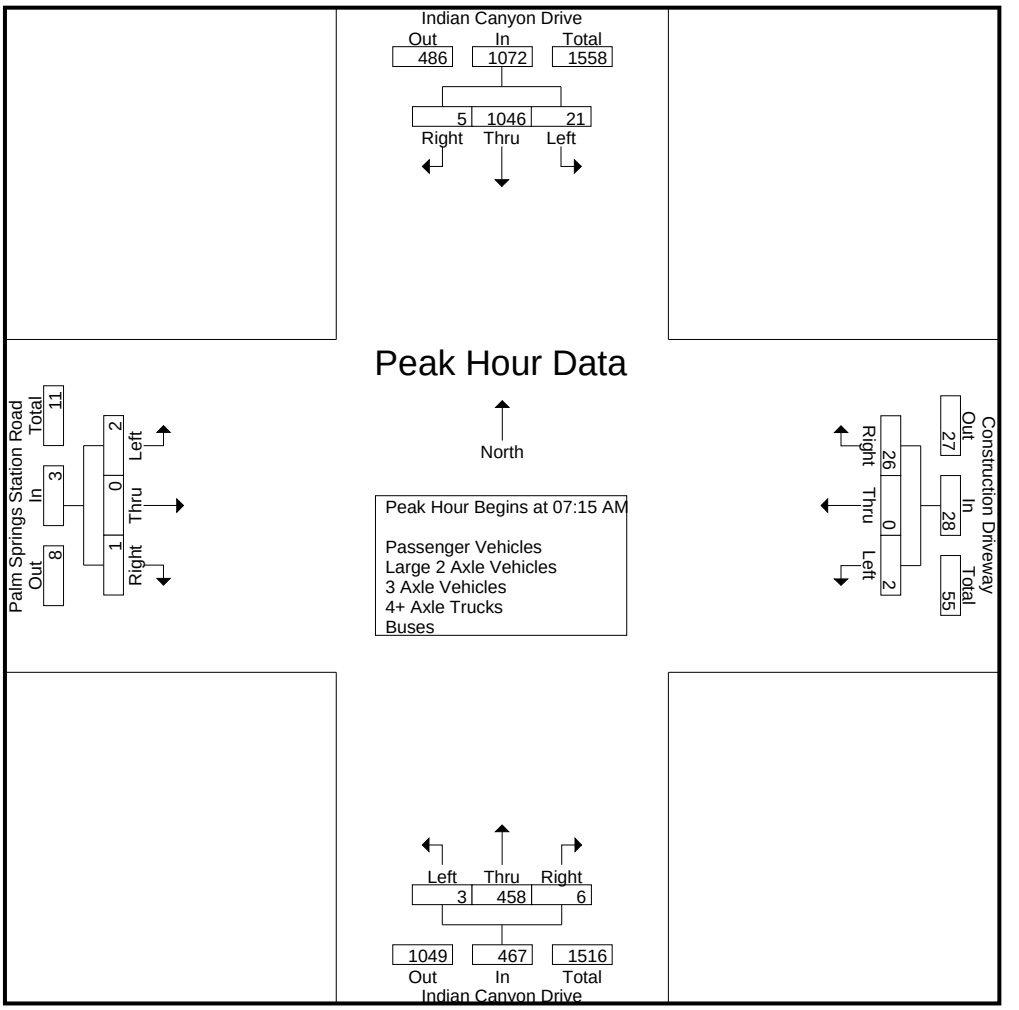
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	2	75	0	77	0	0	0	0	0	41	0	41	0	0	0	0	118
06:15 AM	0	92	0	92	0	0	0	0	1	56	0	57	0	0	1	1	150
06:30 AM	0	155	0	155	0	0	0	0	0	67	0	67	0	0	0	0	222
06:45 AM	6	184	0	190	0	0	0	0	0	81	1	82	0	0	0	0	272
Total	8	506	0	514	0	0	0	0	1	245	1	247	0	0	1	1	762
07:00 AM	9	197	1	207	0	0	7	7	0	78	1	79	1	0	0	1	294
07:15 AM	7	275	3	285	1	0	13	14	0	104	1	105	1	0	1	2	406
07:30 AM	3	308	1	312	0	0	3	3	2	118	0	120	0	0	0	0	435
07:45 AM	7	275	1	283	0	0	4	4	0	121	2	123	1	0	0	1	411
Total	26	1055	6	1087	1	0	27	28	2	421	4	427	3	0	1	4	1546
08:00 AM	4	188	0	192	1	0	6	7	1	115	3	119	0	0	0	0	318
08:15 AM	11	241	0	252	2	0	6	8	0	105	5	110	0	0	0	0	370
08:30 AM	10	222	1	233	2	0	12	14	0	112	3	115	0	0	1	1	363
08:45 AM	4	209	0	213	1	0	11	12	0	104	4	108	0	0	0	0	333
Total	29	860	1	890	6	0	35	41	1	436	15	452	0	0	1	1	1384
Grand Total	63	2421	7	2491	7	0	62	69	4	1102	20	1126	3	0	3	6	3692
Apprch %	2.5	97.2	0.3		10.1	0	89.9		0.4	97.9	1.8		50	0	50		
Total %	1.7	65.6	0.2	67.5	0.2	0	1.7	1.9	0.1	29.8	0.5	30.5	0.1	0	0.1	0.2	
Passenger Vehicles	9	2291	6	2306	1	0	3	4	3	1042	1	1046	3	0	3	6	3362
% Passenger Vehicles	14.3	94.6	85.7	92.6	14.3	0	4.8	5.8	75	94.6	5	92.9	100	0	100	100	91.1
Large 2 Axle Vehicles	1	102	1	104	1	0	2	3	0	33	2	35	0	0	0	0	142
% Large 2 Axle Vehicles	1.6	4.2	14.3	4.2	14.3	0	3.2	4.3	0	3	10	3.1	0	0	0	0	3.8
3 Axle Vehicles	49	12	0	61	5	0	52	57	0	10	17	27	0	0	0	0	145
% 3 Axle Vehicles	77.8	0.5	0	2.4	71.4	0	83.9	82.6	0	0.9	85	2.4	0	0	0	0	3.9
4+ Axle Trucks	4	9	0	13	0	0	5	5	1	10	0	11	0	0	0	0	29
% 4+ Axle Trucks	6.3	0.4	0	0.5	0	0	8.1	7.2	25	0.9	0	1	0	0	0	0	0.8
Buses	0	7	0	7	0	0	0	0	0	7	0	7	0	0	0	0	14
% Buses	0	0.3	0	0.3	0	0	0	0	0	0.6	0	0.6	0	0	0	0	0.4

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**7**	275	**3**	285	**1**	0	**13**	**14**	0	104	1	105	**1**	0	**1**	**2**	406
07:30 AM	3	**308**	1	**312**	0	0	3	3	**2**	118	0	120	0	0	0	0	**435**
07:45 AM	7	275	1	283	0	0	4	4	0	**121**	2	**123**	1	0	0	1	411
08:00 AM	4	188	0	192	1	0	6	7	1	115	**3**	119	0	0	0	0	318
Total Volume	21	1046	5	1072	2	0	26	28	3	458	6	467	2	0	1	3	1570
% App. Total	2	97.6	0.5		7.1	0	92.9		0.6	98.1	1.3		66.7	0	33.3		
PHF	.750	.849	.417	.859	.500	.000	.500	.500	.375	.946	.500	.949	.500	.000	.250	.375	.902

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
Start Date : 2/7/2023
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Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:30 AM				07:00 AM			
+0 mins.	**9**	197	1	207	1	0	6	7	**2**	118	0	120	**1**	0	0	1
+15 mins.	7	275	**3**	285	**2**	0	6	8	0	**121**	2	**123**	1	0	**1**	**2**
+30 mins.	3	**308**	1	**312**	2	0	**12**	**14**	1	115	3	119	0	0	0	0
+45 mins.	7	275	1	283	1	0	11	12	0	105	**5**	110	1	0	0	1
Total Volume	26	1055	6	1087	6	0	35	41	3	459	10	472	3	0	1	4
% App. Total	2.4	97.1	0.6		14.6	0	85.4		0.6	97.2	2.1		75	0	25	
PHF	.722	.856	.500	.871	.750	.000	.729	.732	.375	.948	.500	.959	.750	.000	.250	.500

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City of Palm Springs
N/S: Indian Canyon Drive
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File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
Start Date : 2/7/2023
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Groups Printed- Passenger Vehicles

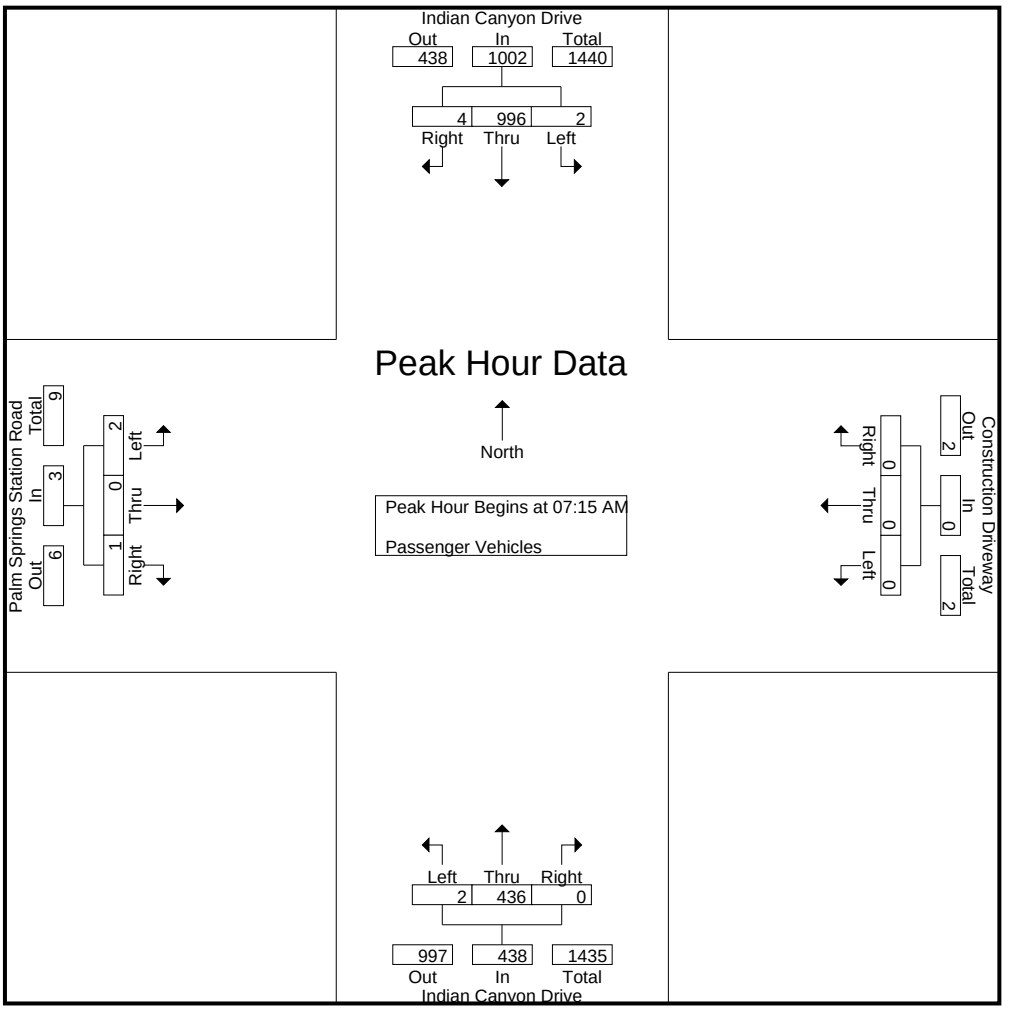
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	1	74	0	75	0	0	0	0	0	41	0	41	0	0	0	0	116
06:15 AM	0	88	0	88	0	0	0	0	1	54	0	55	0	0	1	1	144
06:30 AM	0	141	0	141	0	0	0	0	0	61	0	61	0	0	0	0	202
06:45 AM	3	169	0	172	0	0	0	0	0	76	0	76	0	0	0	0	248
Total	4	472	0	476	0	0	0	0	1	232	0	233	0	0	1	1	710
07:00 AM	0	186	1	187	0	0	1	1	0	74	0	74	1	0	0	1	263
07:15 AM	0	259	2	261	0	0	0	0	0	99	0	99	1	0	1	2	362
07:30 AM	0	293	1	294	0	0	0	0	2	112	0	114	0	0	0	0	408
07:45 AM	2	264	1	267	0	0	0	0	0	117	0	117	1	0	0	1	385
Total	2	1002	5	1009	0	0	1	1	2	402	0	404	3	0	1	4	1418
08:00 AM	0	180	0	180	0	0	0	0	0	108	0	108	0	0	0	0	288
08:15 AM	2	228	0	230	0	0	0	0	0	95	0	95	0	0	0	0	325
08:30 AM	1	208	1	210	1	0	1	2	0	106	1	107	0	0	1	1	320
08:45 AM	0	201	0	201	0	0	1	1	0	99	0	99	0	0	0	0	301
Total	3	817	1	821	1	0	2	3	0	408	1	409	0	0	1	1	1234
Grand Total	9	2291	6	2306	1	0	3	4	3	1042	1	1046	3	0	3	6	3362
Apprch %	0.4	99.3	0.3		25	0	75		0.3	99.6	0.1		50	0	50		
Total %	0.3	68.1	0.2	68.6	0	0	0.1	0.1	0.1	31	0	31.1	0.1	0	0.1	0.2	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	259	**2**	261	0	0	0	0	0	99	0	99	**1**	0	**1**	**2**	362
07:30 AM	0	**293**	1	**294**	0	0	0	0	**2**	112	0	114	0	0	0	0	**408**
07:45 AM	**2**	264	1	267	0	0	0	0	0	**117**	0	**117**	1	0	0	1	385
08:00 AM	0	180	0	180	0	0	0	0	0	108	0	108	0	0	0	0	288
Total Volume	2	996	4	1002	0	0	0	0	2	436	0	438	2	0	1	3	1443
% App. Total	0.2	99.4	0.4		0	0	0		0.5	99.5	0		66.7	0	33.3		
PHF	.250	.850	.500	.852	.000	.000	.000	.000	.250	.932	.000	.936	.500	.000	.250	.375	.884

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Weather: Clear

File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	259	**2**	261	0	0	0	0	0	99	0	99	**1**	0	**1**	**2**
+15 mins.	0	**293**	1	**294**	0	0	0	0	**2**	112	0	114	0	0	0	0
+30 mins.	**2**	264	1	267	0	0	0	0	0	**117**	0	**117**	1	0	0	1
+45 mins.	0	180	0	180	0	0	0	0	0	108	0	108	0	0	0	0
Total Volume	2	996	4	1002	0	0	0	0	2	436	0	438	2	0	1	3
% App. Total	0.2	99.4	0.4		0	0	0		0.5	99.5	0		66.7	0	33.3	
PHF	.250	.850	.500	.852	.000	.000	.000	.000	.250	.932	.000	.936	.500	.000	.250	.375

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
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Groups Printed- Large 2 Axle Vehicles

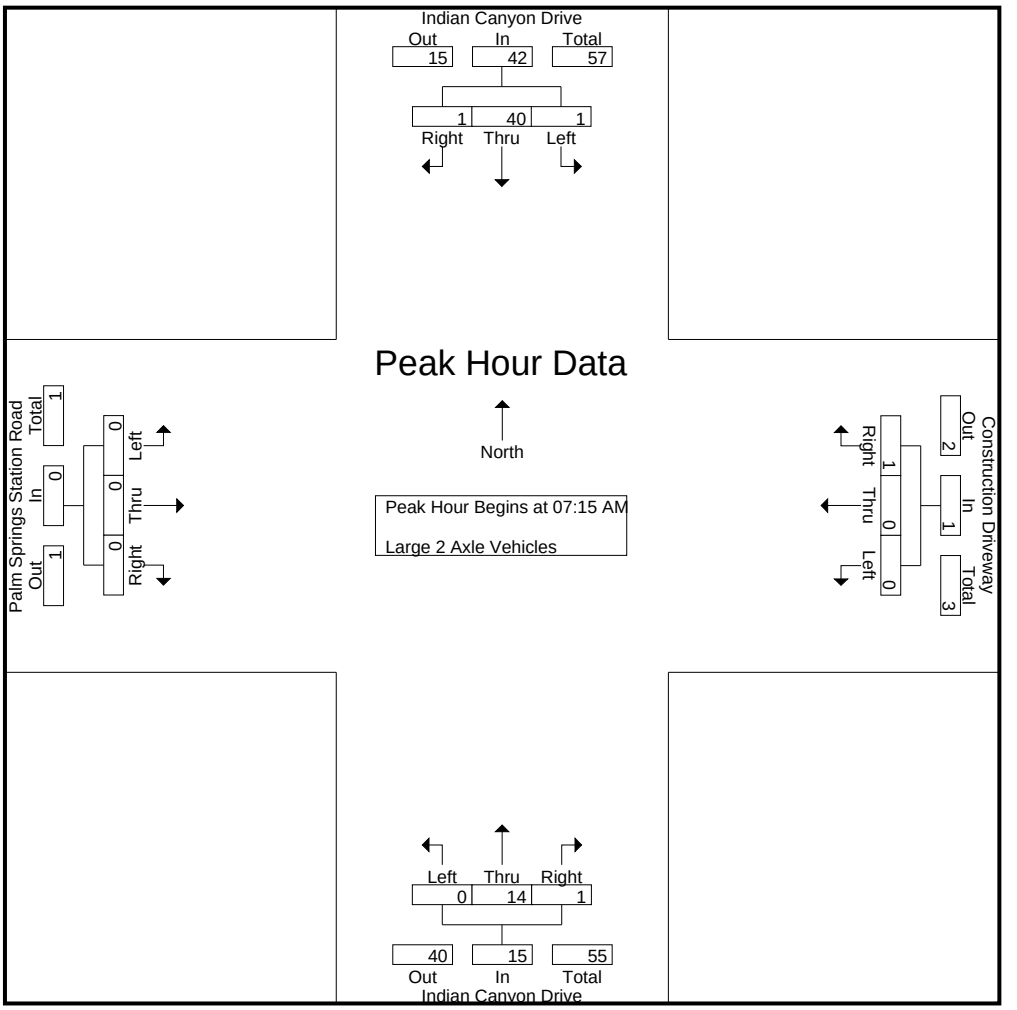
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:15 AM	0	3	0	3	0	0	0	0	0	1	0	1	0	0	0	0	4
06:30 AM	0	11	0	11	0	0	0	0	0	2	0	2	0	0	0	0	13
06:45 AM	0	11	0	11	0	0	0	0	0	2	0	2	0	0	0	0	13
Total	0	26	0	26	0	0	0	0	0	5	0	5	0	0	0	0	31
07:00 AM	0	8	0	8	0	0	0	0	0	1	0	1	0	0	0	0	9
07:15 AM	1	11	1	13	0	0	0	0	0	4	0	4	0	0	0	0	17
07:30 AM	0	13	0	13	0	0	0	0	0	4	0	4	0	0	0	0	17
07:45 AM	0	11	0	11	0	0	0	0	0	3	0	3	0	0	0	0	14
Total	1	43	1	45	0	0	0	0	0	12	0	12	0	0	0	0	57
08:00 AM	0	5	0	5	0	0	1	1	0	3	1	4	0	0	0	0	10
08:15 AM	0	8	0	8	1	0	0	1	0	7	0	7	0	0	0	0	16
08:30 AM	0	12	0	12	0	0	0	0	0	4	1	5	0	0	0	0	17
08:45 AM	0	8	0	8	0	0	1	1	0	2	0	2	0	0	0	0	11
Total	0	33	0	33	1	0	2	3	0	16	2	18	0	0	0	0	54
Grand Total	1	102	1	104	1	0	2	3	0	33	2	35	0	0	0	0	142
Apprch %	1	98.1	1		33.3	0	66.7		0	94.3	5.7		0	0	0		
Total %	0.7	71.8	0.7	73.2	0.7	0	1.4	2.1	0	23.2	1.4	24.6	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**1**	11	**1**	**13**	0	0	0	0	0	**4**	0	**4**	0	0	0	0	**17**
07:30 AM	0	**13**	0	13	0	0	0	0	0	4	0	4	0	0	0	0	17
07:45 AM	0	11	0	11	0	0	0	0	0	3	0	3	0	0	0	0	14
08:00 AM	0	5	0	5	0	0	**1**	**1**	0	3	**1**	4	0	0	0	0	10
Total Volume	1	40	1	42	0	0	1	1	0	14	1	15	0	0	0	0	58
% App. Total	2.4	95.2	2.4		0	0	100		0	93.3	6.7		0	0	0		
PHF	.250	.769	.250	.808	.000	.000	.250	.250	.000	.875	.250	.938	.000	.000	.000	.000	.853

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	**1**	11	**1**	**13**	0	0	0	0	0	**4**	0	**4**	0	0	0	0
+15 mins.	0	**13**	0	13	0	0	0	0	0	4	0	4	0	0	0	0
+30 mins.	0	11	0	11	0	0	0	0	0	3	0	3	0	0	0	0
+45 mins.	0	5	0	5	0	0	**1**	**1**	0	3	**1**	4	0	0	0	0
Total Volume	1	40	1	42	0	0	1	1	0	14	1	15	0	0	0	0
% App. Total	2.4	95.2	2.4		0	0	100		0	93.3	6.7		0	0	0	
PHF	.250	.769	.250	.808	.000	.000	.250	.250	.000	.875	.250	.938	.000	.000	.000	.000

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City of Palm Springs
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Weather: Clear

File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- 3 Axle Vehicles

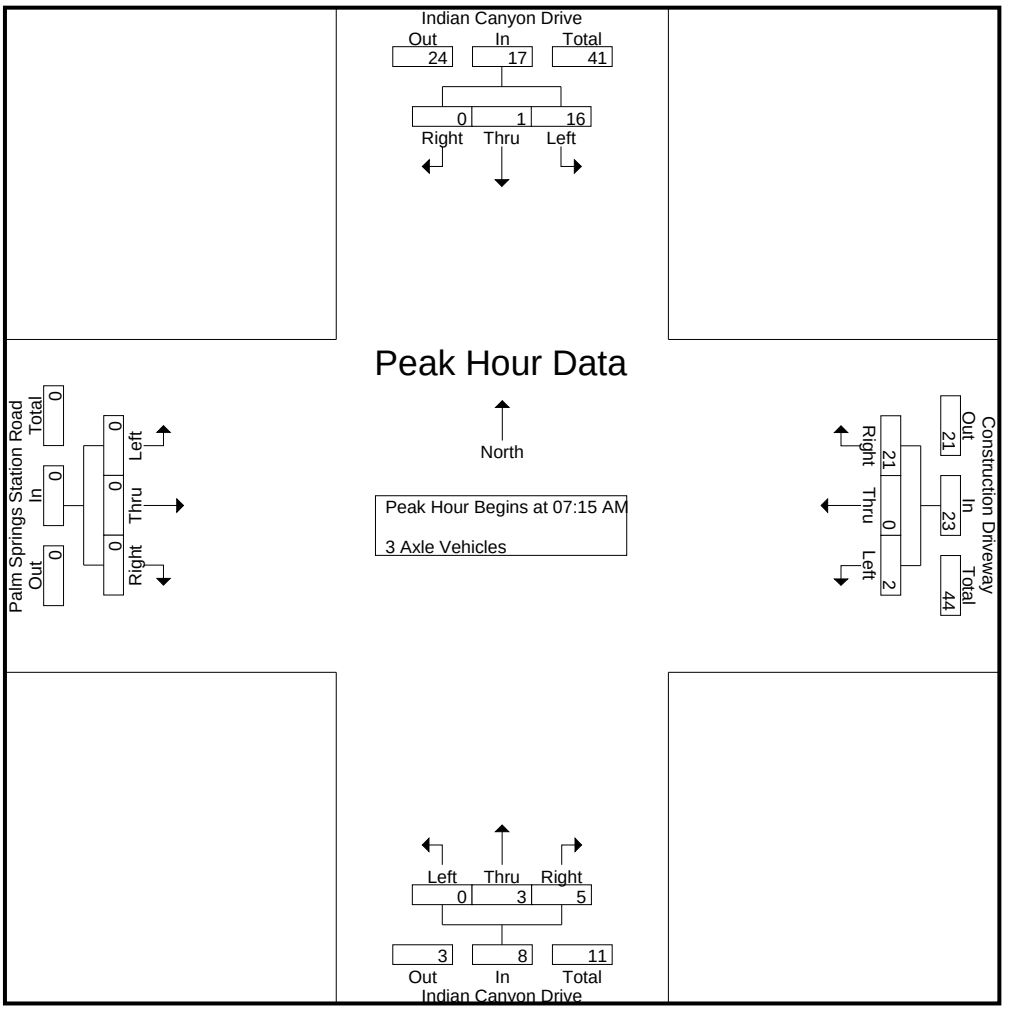
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
06:45 AM	3	3	0	6	0	0	0	0	0	0	1	1	0	0	0	0	7
Total	3	5	0	8	0	0	0	0	0	1	1	2	0	0	0	0	10
07:00 AM	9	3	0	12	0	0	5	5	0	2	1	3	0	0	0	0	20
07:15 AM	6	0	0	6	1	0	12	13	0	1	1	2	0	0	0	0	21
07:30 AM	1	0	0	1	0	0	2	2	0	1	0	1	0	0	0	0	4
07:45 AM	5	0	0	5	0	0	3	3	0	0	2	2	0	0	0	0	10
Total	21	3	0	24	1	0	22	23	0	4	4	8	0	0	0	0	55
08:00 AM	4	1	0	5	1	0	4	5	0	1	2	3	0	0	0	0	13
08:15 AM	9	2	0	11	1	0	6	7	0	1	5	6	0	0	0	0	24
08:30 AM	9	1	0	10	1	0	11	12	0	1	1	2	0	0	0	0	24
08:45 AM	3	0	0	3	1	0	9	10	0	2	4	6	0	0	0	0	19
Total	25	4	0	29	4	0	30	34	0	5	12	17	0	0	0	0	80
Grand Total	49	12	0	61	5	0	52	57	0	10	17	27	0	0	0	0	145
Apprch %	80.3	19.7	0		8.8	0	91.2		0	37	63		0	0	0		
Total %	33.8	8.3	0	42.1	3.4	0	35.9	39.3	0	6.9	11.7	18.6	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**6**	0	0	**6**	**1**	0	**12**	**13**	0	**1**	1	2	0	0	0	0	**21**
07:30 AM	1	0	0	1	0	0	2	2	0	1	0	1	0	0	0	0	4
07:45 AM	5	0	0	5	0	0	3	3	0	0	**2**	2	0	0	0	0	10
08:00 AM	4	**1**	0	5	1	0	4	5	0	1	2	**3**	0	0	0	0	13
Total Volume	16	1	0	17	2	0	21	23	0	3	5	8	0	0	0	0	48
% App. Total	94.1	5.9	0		8.7	0	91.3		0	37.5	62.5		0	0	0		
PHF	.667	.250	.000	.708	.500	.000	.438	.442	.000	.750	.625	.667	.000	.000	.000	.000	.571

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File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
Start Date : 2/7/2023
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	**6**	0	0	**6**	**1**	0	**12**	**13**	0	**1**	1	2	0	0	0	0
+15 mins.	1	0	0	1	0	0	2	2	0	1	0	1	0	0	0	0
+30 mins.	5	0	0	5	0	0	3	3	0	0	**2**	2	0	0	0	0
+45 mins.	4	**1**	0	5	1	0	4	5	0	1	2	**3**	0	0	0	0
Total Volume	16	1	0	17	2	0	21	23	0	3	5	8	0	0	0	0
% App. Total	94.1	5.9	0		8.7	0	91.3		0	37.5	62.5		0	0	0	
PHF	.667	.250	.000	.708	.500	.000	.438	.442	.000	.750	.625	.667	.000	.000	.000	.000

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File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
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Page No : 1

Groups Printed- 4+ Axle Trucks

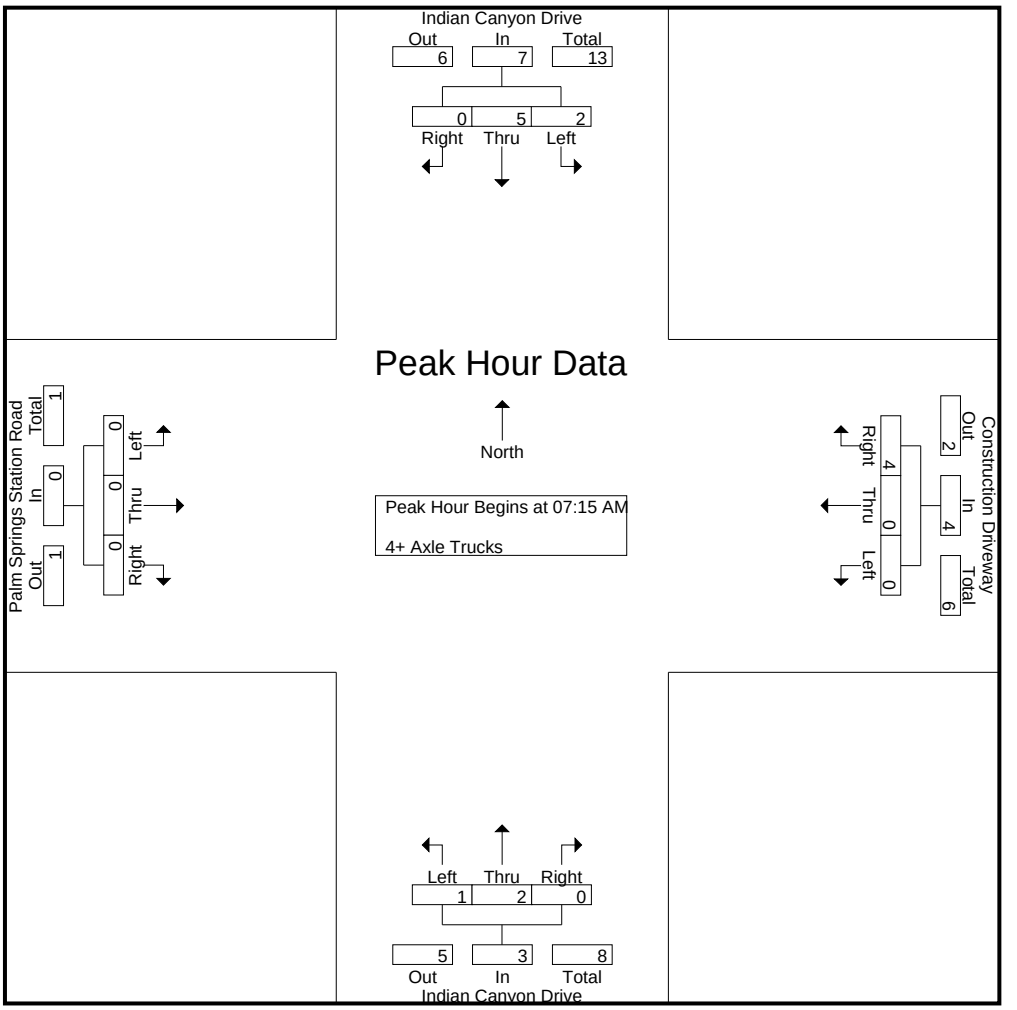
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
06:30 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
06:45 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	1	2	0	3	0	0	0	0	0	5	0	5	0	0	0	0	8
07:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
07:15 AM	0	4	0	4	0	0	1	1	0	0	0	0	0	0	0	0	5
07:30 AM	2	0	0	2	0	0	1	1	0	1	0	1	0	0	0	0	4
07:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total	2	4	0	6	0	0	4	4	0	1	0	1	0	0	0	0	11
08:00 AM	0	1	0	1	0	0	1	1	1	1	0	2	0	0	0	0	4
08:15 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	1	3	0	4	0	0	1	1	1	4	0	5	0	0	0	0	10
Grand Total	4	9	0	13	0	0	5	5	1	10	0	11	0	0	0	0	29
Apprch %	30.8	69.2	0		0	0	100		9.1	90.9	0		0	0	0		
Total %	13.8	31	0	44.8	0	0	17.2	17.2	3.4	34.5	0	37.9	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**4**	0	**4**	0	0	**1**	**1**	0	0	0	0	0	0	0	0	**5**
07:30 AM	**2**	0	0	2	0	0	1	1	0	**1**	0	1	0	0	0	0	4
07:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	1	1	**1**	1	0	**2**	0	0	0	0	4
Total Volume	2	5	0	7	0	0	4	4	1	2	0	3	0	0	0	0	14
% App. Total	28.6	71.4	0		0	0	100		33.3	66.7	0		0	0	0		
PHF	.250	.313	.000	.438	.000	.000	1.00	1.00	.250	.500	.000	.375	.000	.000	.000	.000	.700

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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	**4**	0	**4**	0	0	**1**	**1**	0	0	0	0	0	0	0	0
+15 mins.	**2**	0	0	2	0	0	1	1	0	**1**	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	1	1	**1**	1	0	**2**	0	0	0	0
Total Volume	2	5	0	7	0	0	4	4	1	2	0	3	0	0	0	0
% App. Total	28.6	71.4	0		0	0	100		33.3	66.7	0		0	0	0	
PHF	.250	.313	.000	.438	.000	.000	1.000	1.000	.250	.500	.000	.375	.000	.000	.000	.000

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File Name : 02_PLS_IC_PSS AM
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Groups Printed- Buses

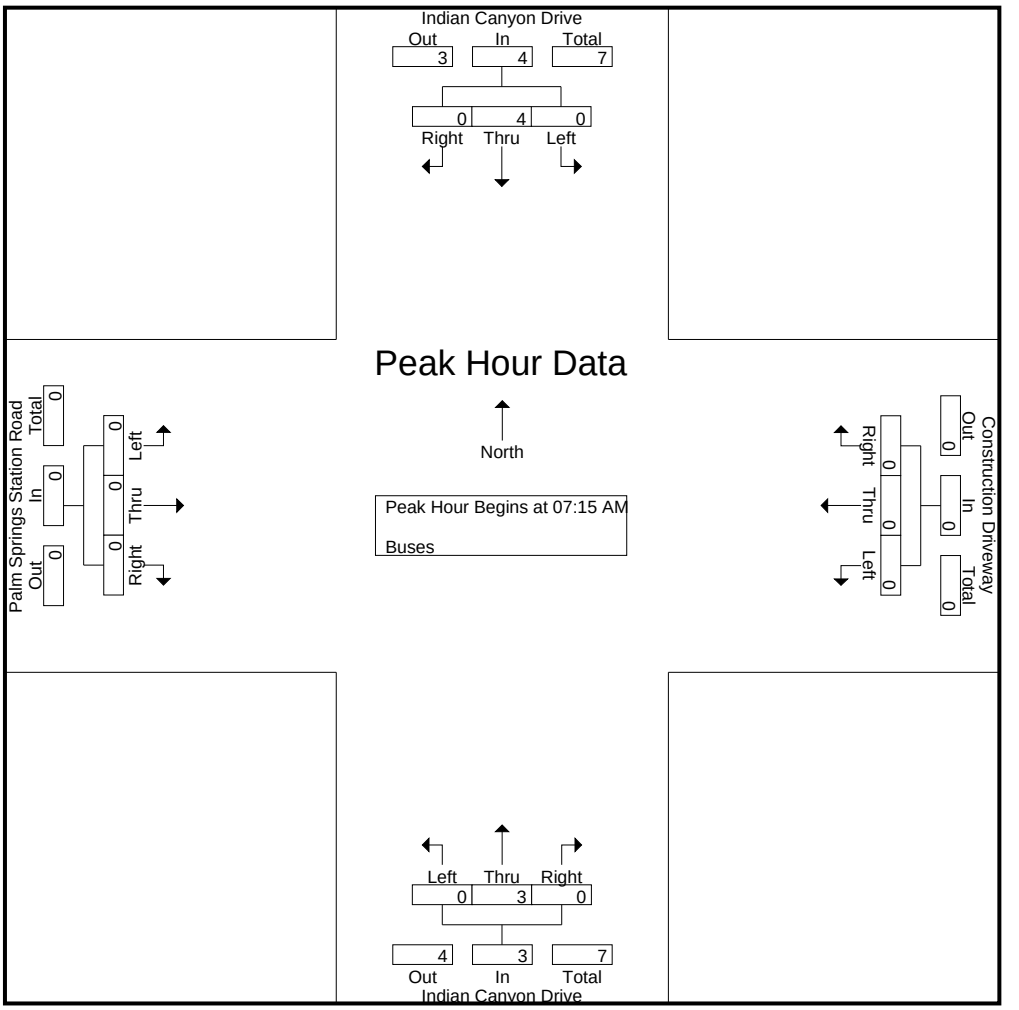
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
08:00 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
08:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	3	0	0	0	0	0	3	0	3	0	0	0	0	6
Grand Total	0	7	0	7	0	0	0	0	0	7	0	7	0	0	0	0	14
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	50	0	50	0	0	0	0	0	50	0	50	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**3**
Total Volume	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0	7
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.583

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File Name : 02_PLS_IC_PSS AM
Site Code : 12223105
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	**2**	0	**2**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0
Total Volume	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000

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File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks - Buses

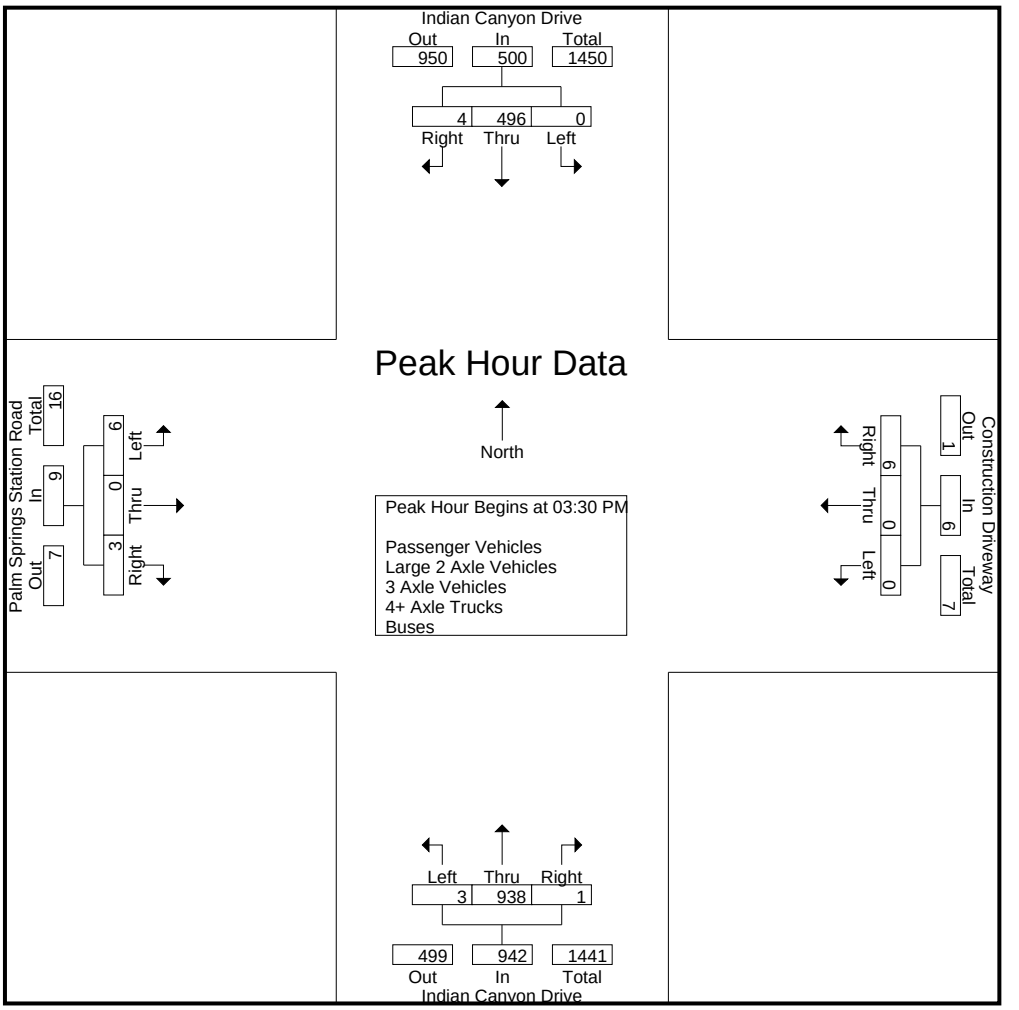
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	1	112	0	113	0	0	2	2	1	231	1	233	2	0	0	2	350
03:15 PM	1	154	1	156	0	0	3	3	0	228	0	228	0	0	0	0	387
03:30 PM	0	127	0	127	0	0	1	1	1	242	1	244	0	0	1	1	373
03:45 PM	0	111	0	111	0	0	2	2	0	223	0	223	2	0	0	2	338
Total	2	504	1	507	0	0	8	8	2	924	2	928	4	0	1	5	1448
04:00 PM	0	120	1	121	0	0	3	3	1	229	0	230	0	0	2	2	356
04:15 PM	0	138	3	141	0	0	0	0	1	244	0	245	4	0	0	4	390
04:30 PM	0	140	1	141	0	0	0	0	0	218	0	218	0	0	0	0	359
04:45 PM	0	126	0	126	0	0	3	3	0	201	0	201	0	0	0	0	330
Total	0	524	5	529	0	0	6	6	2	892	0	894	4	0	2	6	1435
05:00 PM	0	119	0	119	0	0	0	0	0	213	2	215	4	0	1	5	339
05:15 PM	0	136	1	137	0	0	0	0	0	234	0	234	3	0	1	4	375
05:30 PM	0	107	0	107	0	0	0	0	0	167	0	167	0	0	3	3	277
05:45 PM	0	94	0	94	0	0	0	0	0	137	0	137	0	0	1	1	232
Total	0	456	1	457	0	0	0	0	0	751	2	753	7	0	6	13	1223
Grand Total	2	1484	7	1493	0	0	14	14	4	2567	4	2575	15	0	9	24	4106
Apprch %	0.1	99.4	0.5		0	0	100		0.2	99.7	0.2		62.5	0	37.5		
Total %	0	36.1	0.2	36.4	0	0	0.3	0.3	0.1	62.5	0.1	62.7	0.4	0	0.2	0.6	
Passenger Vehicles	2	1453	7	1462	0	0	12	12	4	2474	3	2481	15	0	9	24	3979
% Passenger Vehicles	100	97.9	100	97.9	0	0	85.7	85.7	100	96.4	75	96.3	100	0	100	100	96.9
Large 2 Axle Vehicles	0	25	0	25	0	0	0	0	0	70	0	70	0	0	0	0	95
% Large 2 Axle Vehicles	0	1.7	0	1.7	0	0	0	0	0	2.7	0	2.7	0	0	0	0	2.3
3 Axle Vehicles	0	3	0	3	0	0	2	2	0	13	1	14	0	0	0	0	19
% 3 Axle Vehicles	0	0.2	0	0.2	0	0	14.3	14.3	0	0.5	25	0.5	0	0	0	0	0.5
4+ Axle Trucks	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
% 4+ Axle Trucks	0	0.1	0	0.1	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0.1
Buses	0	2	0	2	0	0	0	0	0	7	0	7	0	0	0	0	9
% Buses	0	0.1	0	0.1	0	0	0	0	0	0.3	0	0.3	0	0	0	0	0.2

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	127	0	127	0	0	1	1	**1**	242	**1**	244	0	0	1	1	373
03:45 PM	0	111	0	111	0	0	2	2	0	223	0	223	2	0	0	2	338
04:00 PM	0	120	1	121	0	0	**3**	**3**	1	229	0	230	0	0	**2**	2	356
04:15 PM	0	**138**	**3**	**141**	0	0	0	0	1	**244**	0	**245**	**4**	0	0	**4**	**390**
Total Volume	0	496	4	500	0	0	6	6	3	938	1	942	6	0	3	9	1457
% App. Total	0	99.2	0.8		0	0	100		0.3	99.6	0.1		66.7	0	33.3		
PHF	.000	.899	.333	.887	.000	.000	.500	.500	.750	.961	.250	.961	.375	.000	.375	.563	.934

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Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				03:15 PM				03:30 PM				05:00 PM			
+0 mins.	0	120	1	121	0	0	**3**	**3**	**1**	242	**1**	244	**4**	0	1	**5**
+15 mins.	0	138	**3**	**141**	0	0	1	1	0	223	0	223	3	0	1	4
+30 mins.	0	**140**	1	141	0	0	2	2	1	229	0	230	0	0	**3**	3
+45 mins.	0	126	0	126	0	0	3	3	1	**244**	0	**245**	0	0	1	1
Total Volume	0	524	5	529	0	0	9	9	3	938	1	942	7	0	6	13
% App. Total	0	99.1	0.9		0	0	100		0.3	99.6	0.1		53.8	0	46.2	
PHF	.000	.936	.417	.938	.000	.000	.750	.750	.750	.961	.250	.961	.438	.000	.500	.650

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File Name : 02_PLS_IC_PSS PM
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Groups Printed- Passenger Vehicles

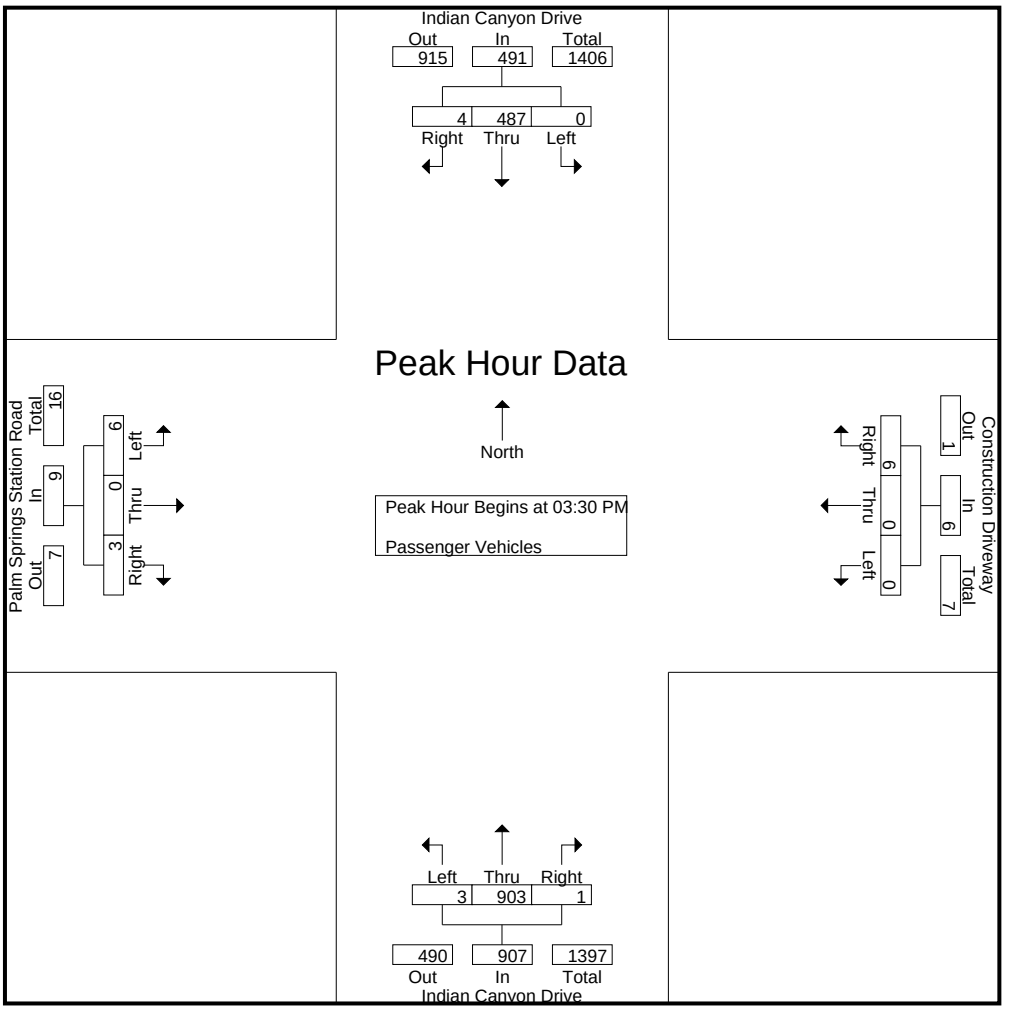
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	1	108	0	109	0	0	1	1	1	205	0	206	2	0	0	2	318
03:15 PM	1	148	1	150	0	0	2	2	0	218	0	218	0	0	0	0	370
03:30 PM	0	127	0	127	0	0	1	1	1	235	1	237	0	0	1	1	366
03:45 PM	0	109	0	109	0	0	2	2	0	217	0	217	2	0	0	2	330
Total	2	492	1	495	0	0	6	6	2	875	1	878	4	0	1	5	1384
04:00 PM	0	117	1	118	0	0	3	3	1	218	0	219	0	0	2	2	342
04:15 PM	0	134	3	137	0	0	0	0	1	233	0	234	4	0	0	4	375
04:30 PM	0	138	1	139	0	0	0	0	0	211	0	211	0	0	0	0	350
04:45 PM	0	124	0	124	0	0	3	3	0	195	0	195	0	0	0	0	322
Total	0	513	5	518	0	0	6	6	2	857	0	859	4	0	2	6	1389
05:00 PM	0	117	0	117	0	0	0	0	0	211	2	213	4	0	1	5	335
05:15 PM	0	133	1	134	0	0	0	0	0	231	0	231	3	0	1	4	369
05:30 PM	0	107	0	107	0	0	0	0	0	167	0	167	0	0	3	3	277
05:45 PM	0	91	0	91	0	0	0	0	0	133	0	133	0	0	1	1	225
Total	0	448	1	449	0	0	0	0	0	742	2	744	7	0	6	13	1206
Grand Total	2	1453	7	1462	0	0	12	12	4	2474	3	2481	15	0	9	24	3979
Apprch %	0.1	99.4	0.5		0	0	100		0.2	99.7	0.1		62.5	0	37.5		
Total %	0.1	36.5	0.2	36.7	0	0	0.3	0.3	0.1	62.2	0.1	62.4	0.4	0	0.2	0.6	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	127	0	127	0	0	1	1	**1**	**235**	**1**	**237**	0	0	1	1	366
03:45 PM	0	109	0	109	0	0	2	2	0	217	0	217	2	0	0	2	330
04:00 PM	0	117	1	118	0	0	**3**	**3**	1	218	0	219	0	0	**2**	2	342
04:15 PM	0	**134**	**3**	**137**	0	0	0	0	1	233	0	234	**4**	0	0	**4**	**375**
Total Volume	0	487	4	491	0	0	6	6	3	903	1	907	6	0	3	9	1413
% App. Total	0	99.2	0.8		0	0	100		0.3	99.6	0.1		66.7	0	33.3		
PHF	.000	.909	.333	.896	.000	.000	.500	.500	.750	.961	.250	.957	.375	.000	.375	.563	.942

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:30 PM				03:30 PM				03:30 PM			
+0 mins.	0	127	0	127	0	0	1	1	**1**	**235**	**1**	**237**	0	0	1	1
+15 mins.	0	109	0	109	0	0	2	2	0	217	0	217	2	0	0	2
+30 mins.	0	117	1	118	0	0	**3**	**3**	1	218	0	219	0	0	**2**	2
+45 mins.	0	**134**	**3**	**137**	0	0	0	0	1	233	0	234	**4**	0	0	**4**
Total Volume	0	487	4	491	0	0	6	6	3	903	1	907	6	0	3	9
% App. Total	0	99.2	0.8		0	0	100		0.3	99.6	0.1		66.7	0	33.3	
PHF	.000	.909	.333	.896	.000	.000	.500	.500	.750	.961	.250	.957	.375	.000	.375	.563

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- Large 2 Axle Vehicles

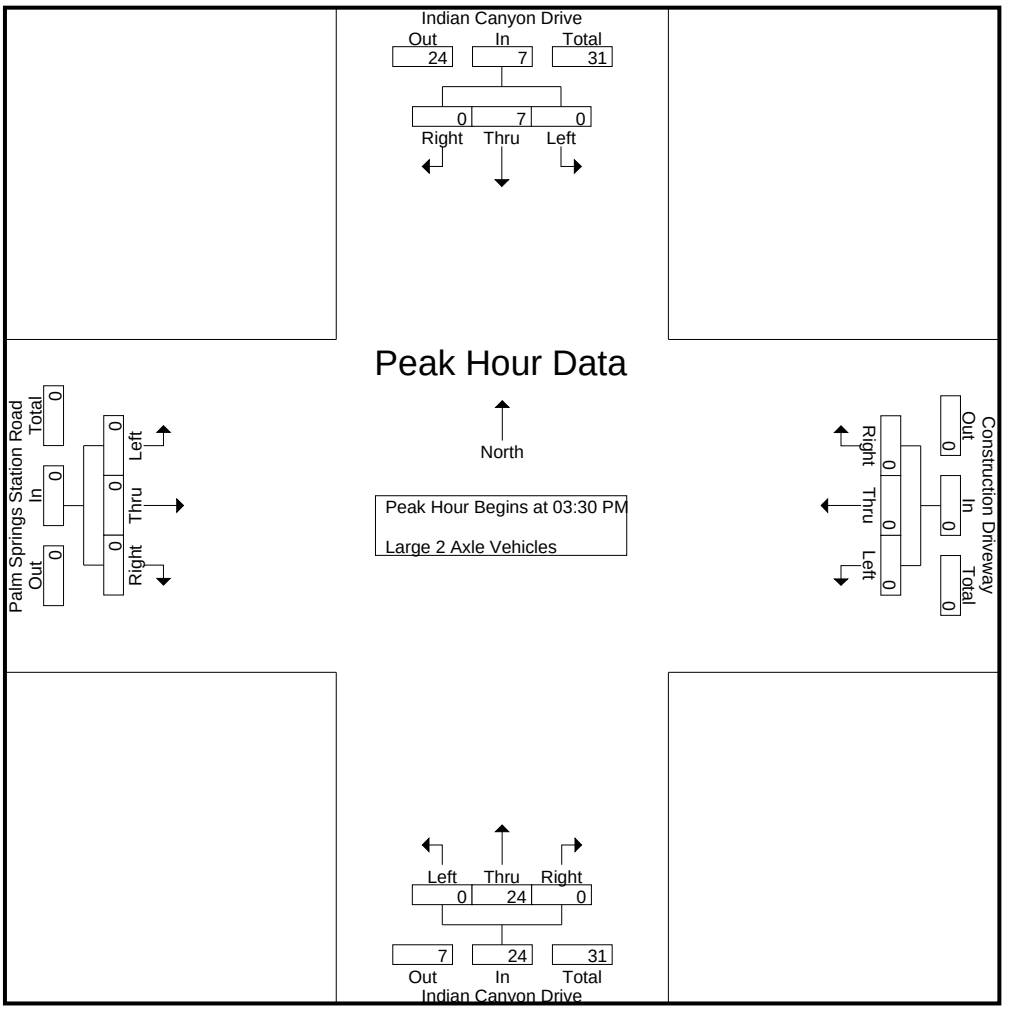
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	4	0	4	0	0	0	0	0	19	0	19	0	0	0	0	23
03:15 PM	0	4	0	4	0	0	0	0	0	6	0	6	0	0	0	0	10
03:30 PM	0	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0	5
03:45 PM	0	1	0	1	0	0	0	0	0	5	0	5	0	0	0	0	6
Total	0	9	0	9	0	0	0	0	0	35	0	35	0	0	0	0	44
04:00 PM	0	3	0	3	0	0	0	0	0	6	0	6	0	0	0	0	9
04:15 PM	0	3	0	3	0	0	0	0	0	8	0	8	0	0	0	0	11
04:30 PM	0	2	0	2	0	0	0	0	0	6	0	6	0	0	0	0	8
04:45 PM	0	2	0	2	0	0	0	0	0	6	0	6	0	0	0	0	8
Total	0	10	0	10	0	0	0	0	0	26	0	26	0	0	0	0	36
05:00 PM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
05:15 PM	0	2	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	3	0	3	0	0	0	0	0	4	0	4	0	0	0	0	7
Total	0	6	0	6	0	0	0	0	0	9	0	9	0	0	0	0	15
Grand Total	0	25	0	25	0	0	0	0	0	70	0	70	0	0	0	0	95
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	26.3	0	26.3	0	0	0	0	0	73.7	0	73.7	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0	5
03:45 PM	0	1	0	1	0	0	0	0	0	5	0	5	0	0	0	0	6
04:00 PM	0	**3**	0	**3**	0	0	0	0	0	6	0	6	0	0	0	0	9
04:15 PM	0	3	0	3	0	0	0	0	0	**8**	0	**8**	0	0	0	0	**11**
Total Volume	0	7	0	7	0	0	0	0	0	24	0	24	0	0	0	0	31
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.583	.000	.583	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.705

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City of Palm Springs
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E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:30 PM				03:30 PM				03:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	5	0	5	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	5	0	5	0	0	0	0
+30 mins.	0	**3**	0	**3**	0	0	0	0	0	6	0	6	0	0	0	0
+45 mins.	0	3	0	3	0	0	0	0	0	**8**	0	**8**	0	0	0	0
Total Volume	0	7	0	7	0	0	0	0	0	24	0	24	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.583	.000	.583	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- 3 Axle Vehicles

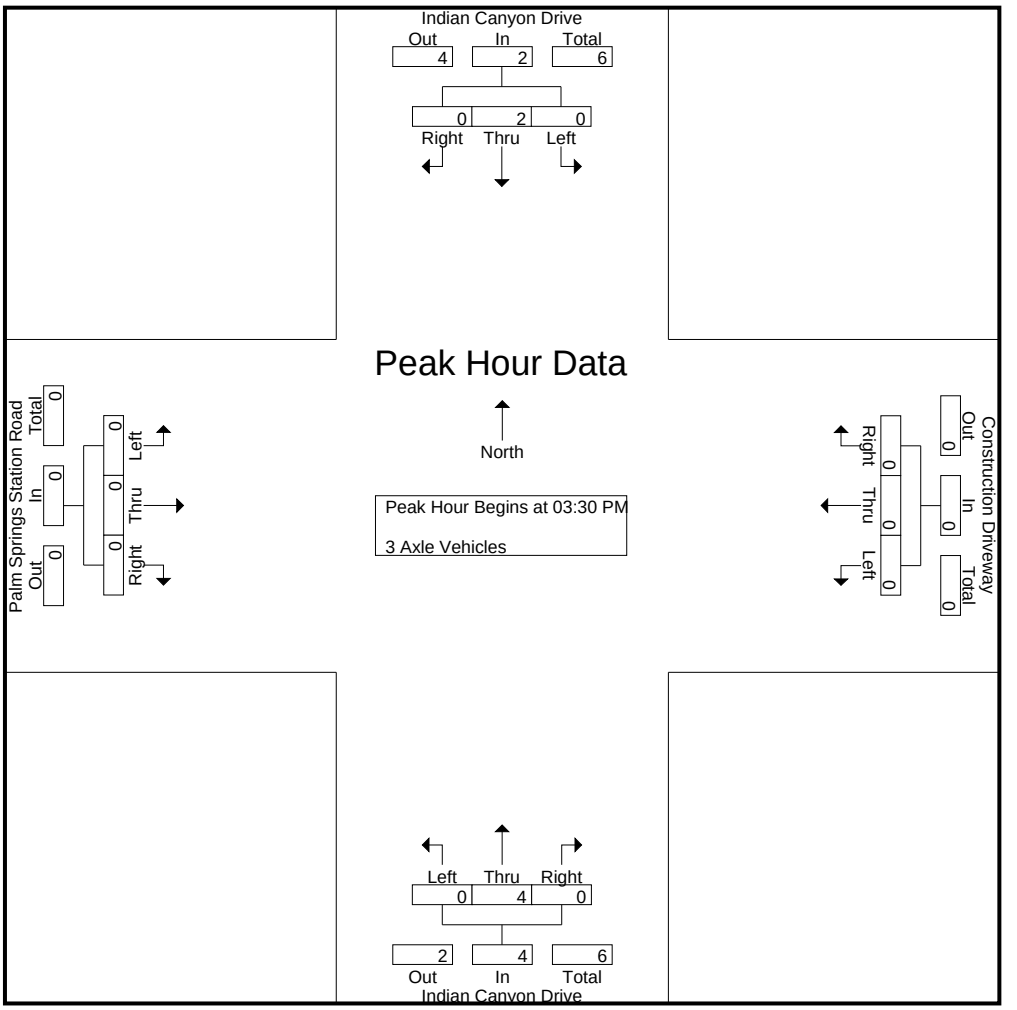
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	1	1	0	6	1	7	0	0	0	0	8
03:15 PM	0	1	0	1	0	0	1	1	0	2	0	2	0	0	0	0	4
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	0	2	2	0	9	1	10	0	0	0	0	14
04:00 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	3	0	3	0	0	2	2	0	13	1	14	0	0	0	0	19
Apprch %	0	100	0		0	0	100		0	92.9	7.1		0	0	0		
Total %	0	15.8	0	15.8	0	0	10.5	10.5	0	68.4	5.3	73.7	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00 PM	0	0	0	0	0	0	0	0	0	**3**	0	**3**	0	0	0	0	**3**
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.333	.000	.333	.000	.000	.000	.000	.500

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Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:30 PM				03:30 PM				03:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	**3**	0	**3**	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.333	.000	.333	.000	.000	.000	.000

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City of Palm Springs
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Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- 4+ Axle Trucks

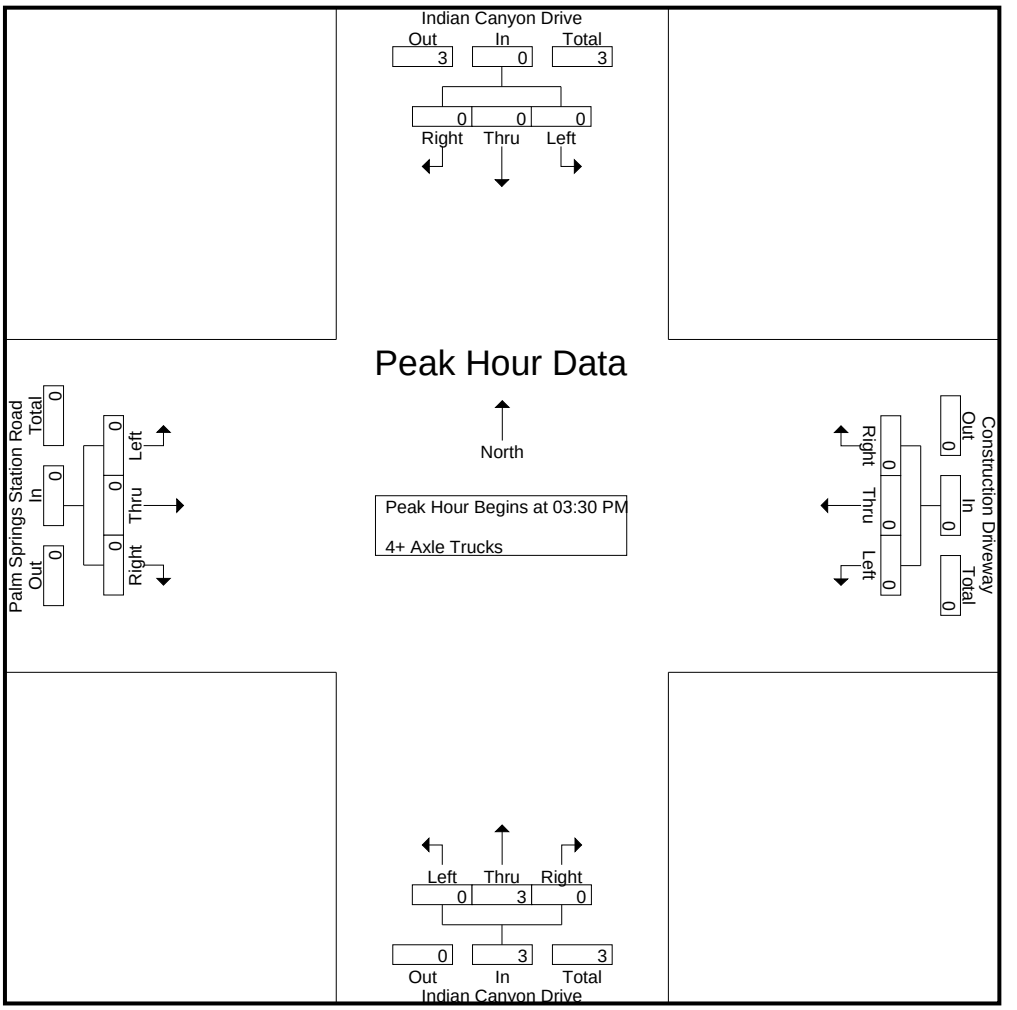
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	25	0	25	0	0	0	0	0	75	0	75	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.750

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City of Palm Springs
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Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:30 PM				03:30 PM				03:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000

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City of Palm Springs
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E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
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Page No : 1

Groups Printed- Buses

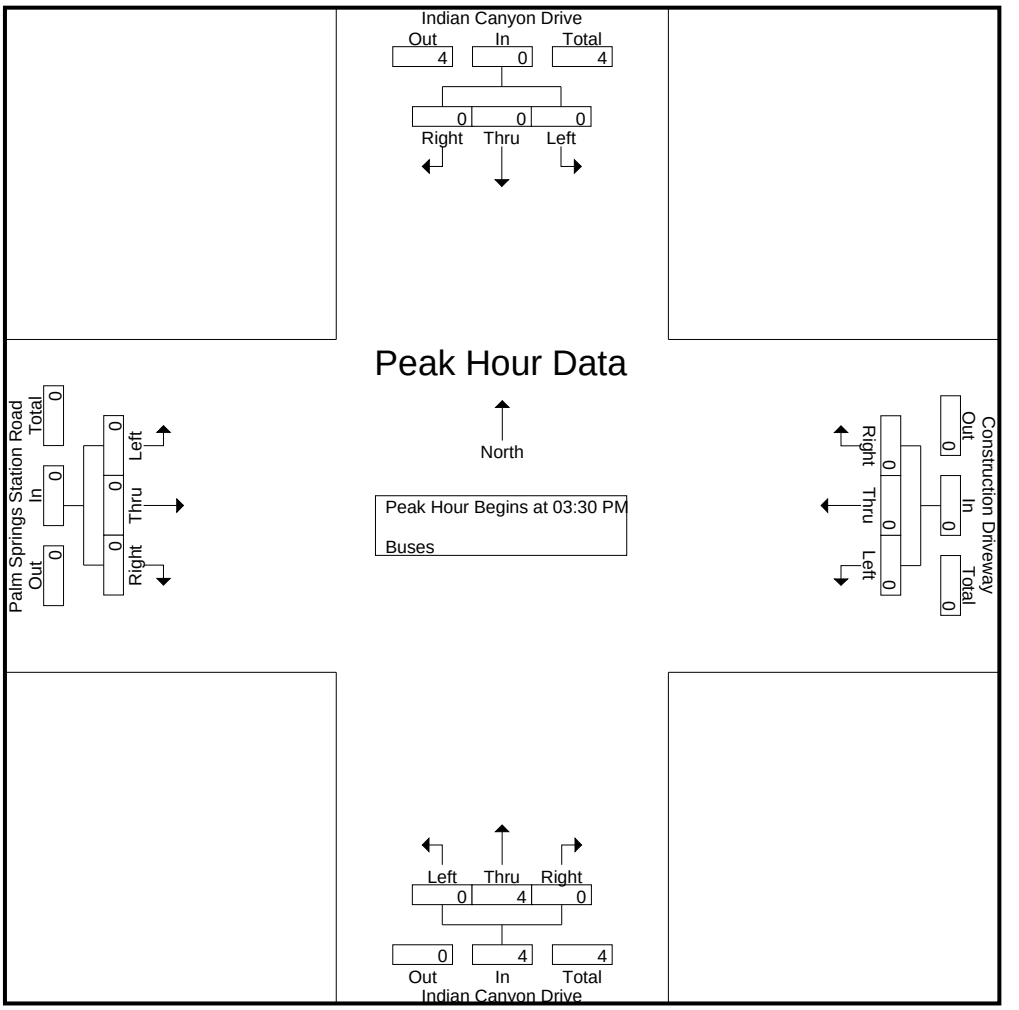
	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	4
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	2	0	2	0	0	0	0	0	7	0	7	0	0	0	0	9
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	22.2	0	22.2	0	0	0	0	0	77.8	0	77.8	0	0	0	0	

	Indian Canyon Drive Southbound				Construction Driveway Westbound				Indian Canyon Drive Northbound				Palm Springs Station Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**2**
Total Volume	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	4
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.500

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road
Weather: Clear

File Name : 02_PLS_IC_PSS PM
Site Code : 12223105
Start Date : 2/7/2023
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Peak Hour Analysis From 03:30 PM to 04:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:30 PM				03:30 PM				03:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0
% App. Total	0	0	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

Location: Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road

Date: 2/7/2023
Day: Tuesday

PEDESTRIANS

	North Leg Indian Canyon Drive	East Leg Construction Driveway	South Leg Indian Canyon Drive	West Leg Palm Springs Station Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	1	1
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	1

	North Leg Indian Canyon Drive	East Leg Construction Driveway	South Leg Indian Canyon Drive	West Leg Palm Springs Station Road	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	1	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	1

Location: Palm Springs
N/S: Indian Canyon Drive
E/W: Palm Springs Station Road

Date: 2/7/2023
Day: Tuesday

BICYCLES

	Southbound Indian Canyon Drive			Westbound Construction Driveway			Northbound Indian Canyon Drive			Eastbound Palm Springs Station Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	2	0	0	0	0	2

	Southbound Indian Canyon Drive			Westbound Construction Driveway			Northbound Indian Canyon Drive			Eastbound Palm Springs Station Road			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	0	0	0	0	0	0	0

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks - Buses

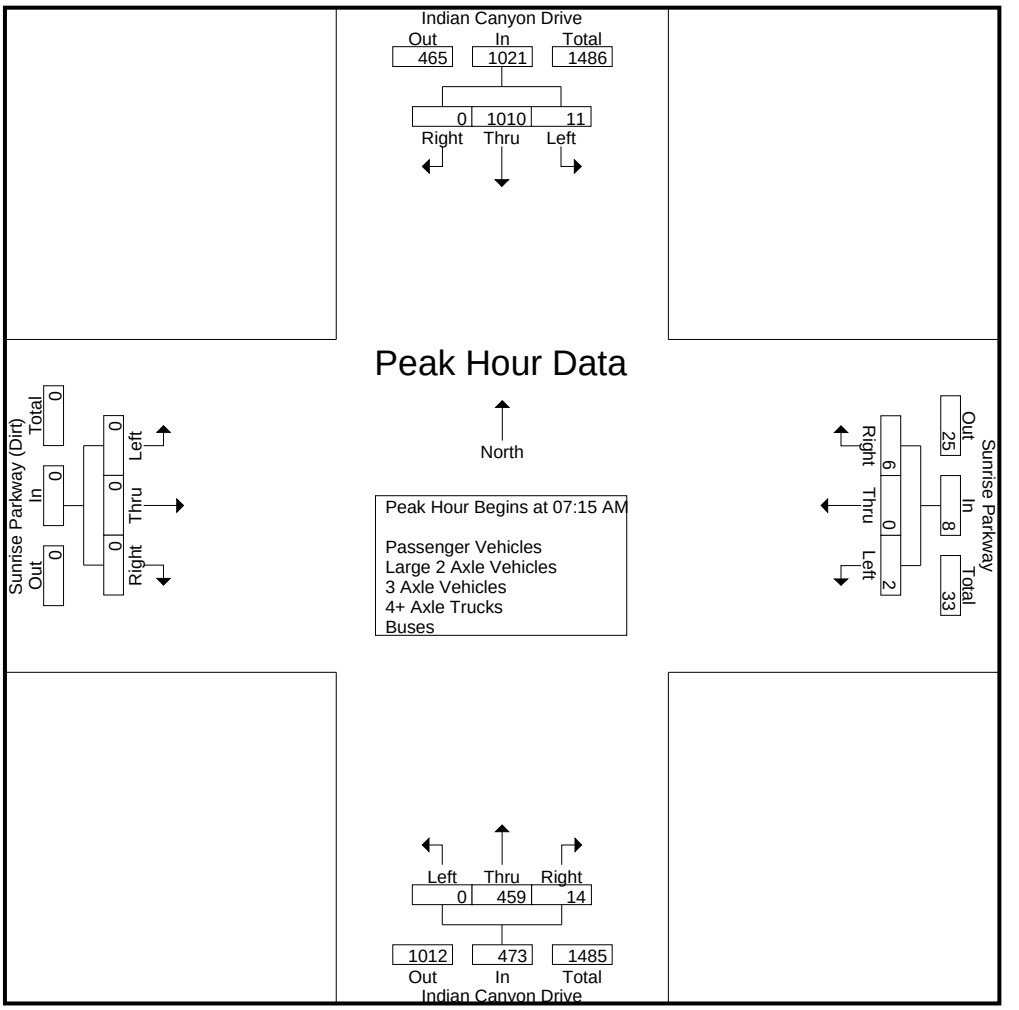
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	1	68	0	69	0	0	0	0	0	41	1	42	0	0	0	0	111
06:15 AM	3	85	0	88	0	0	0	0	0	61	1	62	0	0	0	0	150
06:30 AM	8	128	0	136	0	0	1	1	0	63	3	66	0	0	0	0	203
06:45 AM	10	153	0	163	0	0	1	1	0	73	7	80	0	0	0	0	244
Total	22	434	0	456	0	0	2	2	0	238	12	250	0	0	0	0	708
07:00 AM	8	187	0	195	2	0	1	3	0	89	9	98	0	0	0	0	296
07:15 AM	2	278	0	280	1	0	0	1	0	100	4	104	0	0	0	0	385
07:30 AM	4	287	0	291	1	0	2	3	0	124	1	125	0	0	0	0	419
07:45 AM	2	253	0	255	0	0	3	3	0	119	7	126	0	0	0	0	384
Total	16	1005	0	1021	4	0	6	10	0	432	21	453	0	0	0	0	1484
08:00 AM	3	192	0	195	0	0	1	1	0	116	2	118	0	0	0	0	314
08:15 AM	4	248	0	252	3	0	2	5	0	108	3	111	0	0	0	0	368
08:30 AM	4	216	0	220	1	0	3	4	0	106	3	109	0	0	0	0	333
08:45 AM	6	211	0	217	2	0	2	4	0	101	7	108	0	0	0	0	329
Total	17	867	0	884	6	0	8	14	0	431	15	446	0	0	0	0	1344
Grand Total	55	2306	0	2361	10	0	16	26	0	1101	48	1149	0	0	0	0	3536
Apprch %	2.3	97.7	0		38.5	0	61.5		0	95.8	4.2		0	0	0		
Total %	1.6	65.2	0	66.8	0.3	0	0.5	0.7	0	31.1	1.4	32.5	0	0	0	0	
Passenger Vehicles	48	2228	0	2276	8	0	15	23	0	1040	44	1084	0	0	0	0	3383
% Passenger Vehicles	87.3	96.6	0	96.4	80	0	93.8	88.5	0	94.5	91.7	94.3	0	0	0	0	95.7
Large 2 Axle Vehicles	3	54	0	57	2	0	1	3	0	19	4	23	0	0	0	0	83
% Large 2 Axle Vehicles	5.5	2.3	0	2.4	20	0	6.2	11.5	0	1.7	8.3	2	0	0	0	0	2.3
3 Axle Vehicles	4	9	0	13	0	0	0	0	0	25	0	25	0	0	0	0	38
% 3 Axle Vehicles	7.3	0.4	0	0.6	0	0	0	0	0	2.3	0	2.2	0	0	0	0	1.1
4+ Axle Trucks	0	6	0	6	0	0	0	0	0	10	0	10	0	0	0	0	16
% 4+ Axle Trucks	0	0.3	0	0.3	0	0	0	0	0	0.9	0	0.9	0	0	0	0	0.5
Buses	0	9	0	9	0	0	0	0	0	7	0	7	0	0	0	0	16
% Buses	0	0.4	0	0.4	0	0	0	0	0	0.6	0	0.6	0	0	0	0	0.5

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	278	0	280	**1**	0	0	1	0	100	4	104	0	0	0	0	385
07:30 AM	**4**	**287**	0	**291**	1	0	2	**3**	0	**124**	1	125	0	0	0	0	**419**
07:45 AM	2	253	0	255	0	0	**3**	3	0	119	**7**	**126**	0	0	0	0	384
08:00 AM	3	192	0	195	0	0	1	1	0	116	2	118	0	0	0	0	314
Total Volume	11	1010	0	1021	2	0	6	8	0	459	14	473	0	0	0	0	1502
% App. Total	1.1	98.9	0		25	0	75		0	97	3		0	0	0		
PHF	.688	.880	.000	.877	.500	.000	.500	.667	.000	.925	.500	.938	.000	.000	.000	.000	.896

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File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
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Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:30 AM				06:00 AM			
+0 mins.	**8**	187	0	195	0	0	1	1	0	**124**	1	125	0	0	0	0
+15 mins.	2	278	0	280	**3**	0	2	**5**	0	119	**7**	**126**	0	0	0	0
+30 mins.	4	**287**	0	**291**	1	0	**3**	4	0	116	2	118	0	0	0	0
+45 mins.	2	253	0	255	2	0	2	4	0	108	3	111	0	0	0	0
Total Volume	16	1005	0	1021	6	0	8	14	0	467	13	480	0	0	0	0
% App. Total	1.6	98.4	0		42.9	0	57.1		0	97.3	2.7		0	0	0	
PHF	.500	.875	.000	.877	.500	.000	.667	.700	.000	.942	.464	.952	.000	.000	.000	.000

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City of Palm Springs
N/S: Indian Canyon Drive
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Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
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Groups Printed- Passenger Vehicles

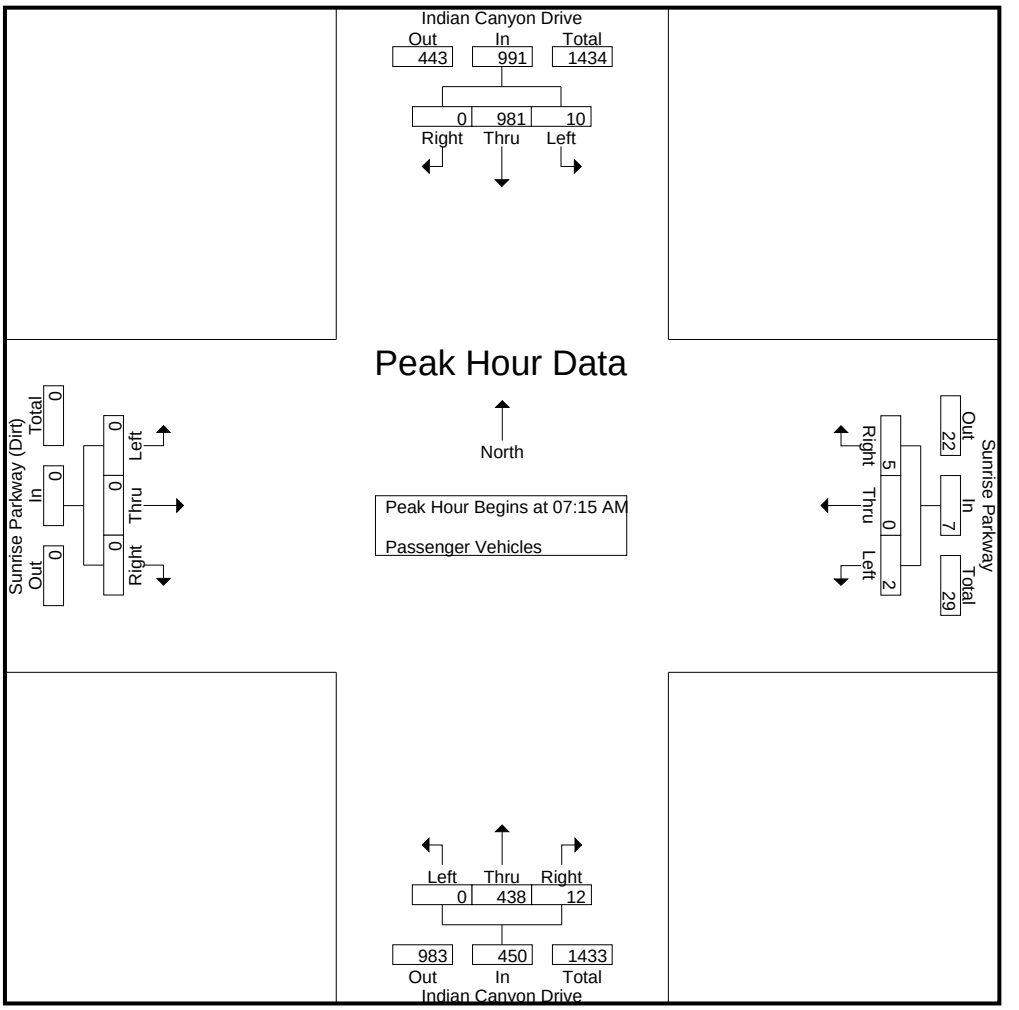
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	1	67	0	68	0	0	0	0	0	41	1	42	0	0	0	0	110
06:15 AM	3	80	0	83	0	0	0	0	0	58	1	59	0	0	0	0	142
06:30 AM	8	122	0	130	0	0	1	1	0	59	3	62	0	0	0	0	193
06:45 AM	9	147	0	156	0	0	1	1	0	70	6	76	0	0	0	0	233
Total	21	416	0	437	0	0	2	2	0	228	11	239	0	0	0	0	678
07:00 AM	7	181	0	188	1	0	1	2	0	85	9	94	0	0	0	0	284
07:15 AM	2	269	0	271	1	0	0	1	0	95	3	98	0	0	0	0	370
07:30 AM	4	282	0	286	1	0	2	3	0	122	1	123	0	0	0	0	412
07:45 AM	2	245	0	247	0	0	2	2	0	114	6	120	0	0	0	0	369
Total	15	977	0	992	3	0	5	8	0	416	19	435	0	0	0	0	1435
08:00 AM	2	185	0	187	0	0	1	1	0	107	2	109	0	0	0	0	297
08:15 AM	3	240	0	243	2	0	2	4	0	98	2	100	0	0	0	0	347
08:30 AM	2	203	0	205	1	0	3	4	0	100	3	103	0	0	0	0	312
08:45 AM	5	207	0	212	2	0	2	4	0	91	7	98	0	0	0	0	314
Total	12	835	0	847	5	0	8	13	0	396	14	410	0	0	0	0	1270
Grand Total	48	2228	0	2276	8	0	15	23	0	1040	44	1084	0	0	0	0	3383
Apprch %	2.1	97.9	0		34.8	0	65.2		0	95.9	4.1		0	0	0		
Total %	1.4	65.9	0	67.3	0.2	0	0.4	0.7	0	30.7	1.3	32	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	2	269	0	271	**1**	0	0	1	0	95	3	98	0	0	0	0	370
07:30 AM	**4**	**282**	0	**286**	1	0	**2**	**3**	0	**122**	1	**123**	0	0	0	0	**412**
07:45 AM	2	245	0	247	0	0	2	2	0	114	**6**	120	0	0	0	0	369
08:00 AM	2	185	0	187	0	0	1	1	0	107	2	109	0	0	0	0	297
Total Volume	10	981	0	991	2	0	5	7	0	438	12	450	0	0	0	0	1448
% App. Total	1	99	0		28.6	0	71.4		0	97.3	2.7		0	0	0		
PHF	.625	.870	.000	.866	.500	.000	.625	.583	.000	.898	.500	.915	.000	.000	.000	.000	.879

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City of Palm Springs
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Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	2	269	0	271	**1**	0	0	1	0	95	3	98	0	0	0	0
+15 mins.	**4**	**282**	0	**286**	1	0	**2**	**3**	0	**122**	1	**123**	0	0	0	0
+30 mins.	2	245	0	247	0	0	2	2	0	114	**6**	120	0	0	0	0
+45 mins.	2	185	0	187	0	0	1	1	0	107	2	109	0	0	0	0
Total Volume	10	981	0	991	2	0	5	7	0	438	12	450	0	0	0	0
% App. Total	1	99	0		28.6	0	71.4		0	97.3	2.7		0	0	0	
PHF	.625	.870	.000	.866	.500	.000	.625	.583	.000	.898	.500	.915	.000	.000	.000	.000

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- Large 2 Axle Vehicles

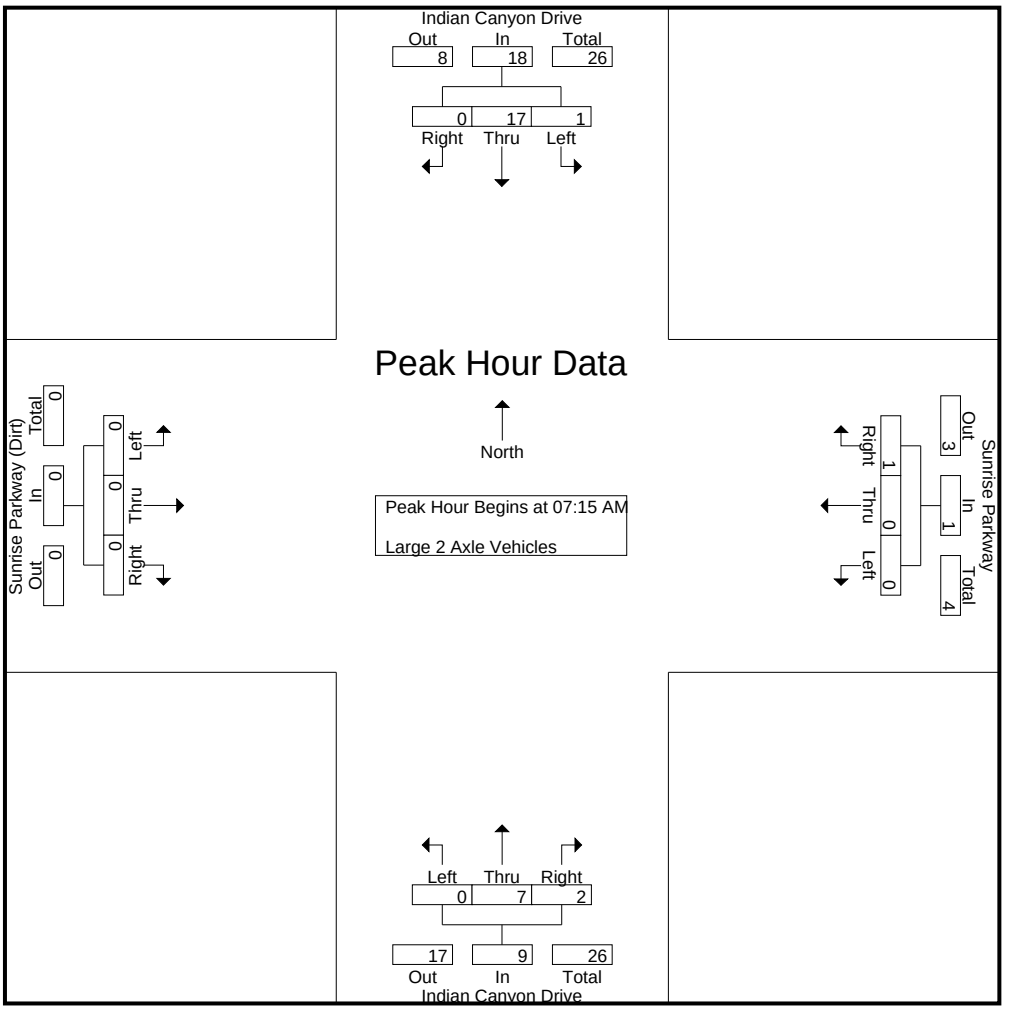
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:15 AM	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
06:30 AM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
06:45 AM	0	5	0	5	0	0	0	0	0	0	1	1	0	0	0	0	6
Total	0	14	0	14	0	0	0	0	0	1	1	2	0	0	0	0	16
07:00 AM	0	5	0	5	1	0	0	1	0	1	0	1	0	0	0	0	7
07:15 AM	0	4	0	4	0	0	0	0	0	2	1	3	0	0	0	0	7
07:30 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
07:45 AM	0	8	0	8	0	0	1	1	0	2	1	3	0	0	0	0	12
Total	0	19	0	19	1	0	1	2	0	6	2	8	0	0	0	0	29
08:00 AM	1	3	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
08:15 AM	0	5	0	5	1	0	0	1	0	4	1	5	0	0	0	0	11
08:30 AM	1	9	0	10	0	0	0	0	0	3	0	3	0	0	0	0	13
08:45 AM	1	4	0	5	0	0	0	0	0	3	0	3	0	0	0	0	8
Total	3	21	0	24	1	0	0	1	0	12	1	13	0	0	0	0	38
Grand Total	3	54	0	57	2	0	1	3	0	19	4	23	0	0	0	0	83
Apprch %	5.3	94.7	0		66.7	0	33.3		0	82.6	17.4		0	0	0		
Total %	3.6	65.1	0	68.7	2.4	0	1.2	3.6	0	22.9	4.8	27.7	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	4	0	4	0	0	0	0	0	**2**	**1**	**3**	0	0	0	0	7
07:30 AM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
07:45 AM	0	**8**	0	**8**	0	0	**1**	**1**	0	2	1	3	0	0	0	0	**12**
08:00 AM	**1**	3	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
Total Volume	1	17	0	18	0	0	1	1	0	7	2	9	0	0	0	0	28
% App. Total	5.6	94.4	0		0	0	100		0	77.8	22.2		0	0	0		
PHF	.250	.531	.000	.563	.000	.000	.250	.250	.000	.875	.500	.750	.000	.000	.000	.000	.583

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	4	0	4	0	0	0	0	0	**2**	**1**	**3**	0	0	0	0
+15 mins.	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	**8**	0	**8**	0	0	**1**	**1**	0	2	1	3	0	0	0	0
+45 mins.	**1**	3	0	4	0	0	0	0	0	2	0	2	0	0	0	0
Total Volume	1	17	0	18	0	0	1	1	0	7	2	9	0	0	0	0
% App. Total	5.6	94.4	0		0	0	100		0	77.8	22.2		0	0	0	
PHF	.250	.531	.000	.563	.000	.000	.250	.250	.000	.875	.500	.750	.000	.000	.000	.000

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- 3 Axle Vehicles

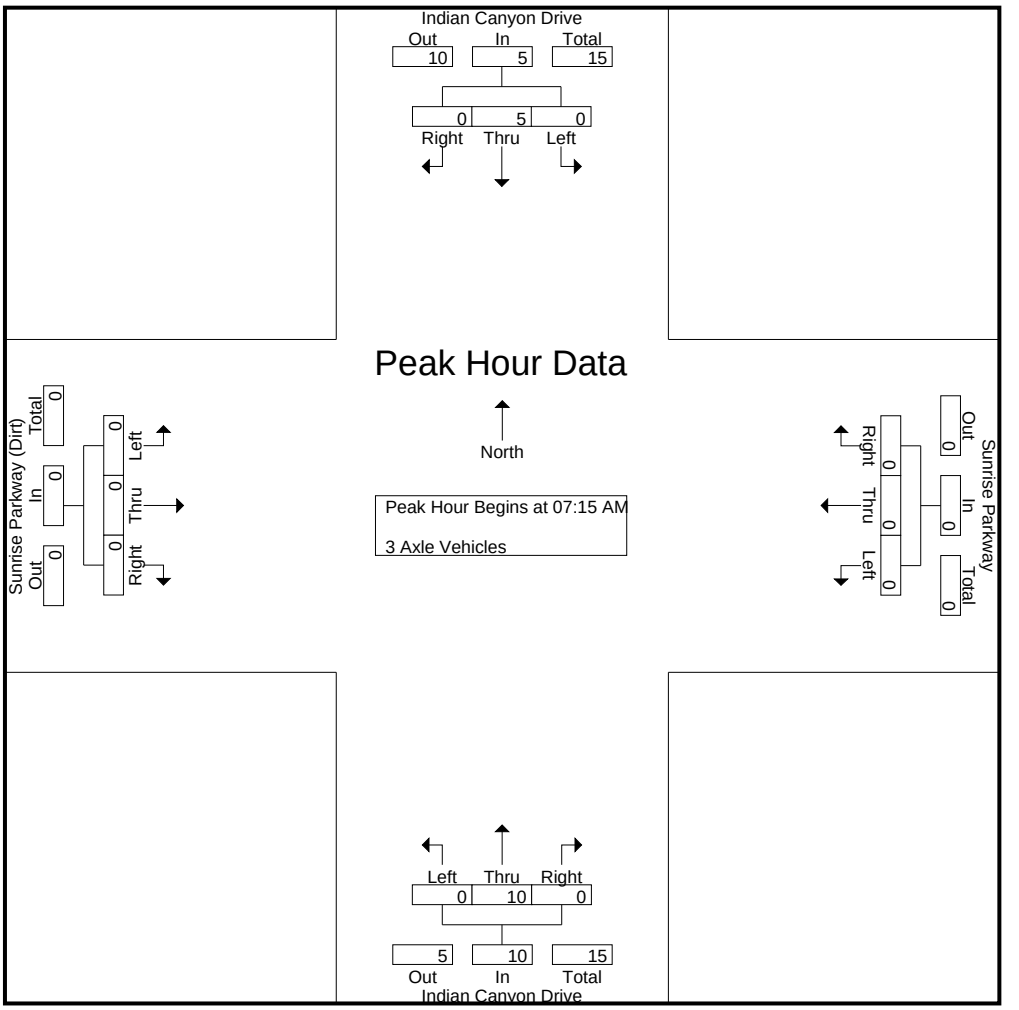
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
06:45 AM	1	1	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
Total	1	2	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
07:00 AM	1	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
07:15 AM	0	3	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	1	3	0	4	0	0	0	0	0	7	0	7	0	0	0	0	11
08:00 AM	0	2	0	2	0	0	0	0	0	5	0	5	0	0	0	0	7
08:15 AM	1	1	0	2	0	0	0	0	0	3	0	3	0	0	0	0	5
08:30 AM	1	1	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
08:45 AM	0	0	0	0	0	0	0	0	0	6	0	6	0	0	0	0	6
Total	2	4	0	6	0	0	0	0	0	16	0	16	0	0	0	0	22
Grand Total	4	9	0	13	0	0	0	0	0	25	0	25	0	0	0	0	38
Apprch %	30.8	69.2	0		0	0	0		0	100	0		0	0	0		
Total %	10.5	23.7	0	34.2	0	0	0	0	0	65.8	0	65.8	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**3**	0	**3**	0	0	0	0	0	2	0	2	0	0	0	0	5
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
08:00 AM	0	2	0	2	0	0	0	0	0	**5**	0	**5**	0	0	0	0	**7**
Total Volume	0	5	0	5	0	0	0	0	0	10	0	10	0	0	0	0	15
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.417	.000	.417	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.536

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	**3**	0	**3**	0	0	0	0	0	2	0	2	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	2	0	2	0	0	0	0	0	**5**	0	**5**	0	0	0	0
Total Volume	0	5	0	5	0	0	0	0	0	10	0	10	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.417	.000	.417	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

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E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- 4+ Axle Trucks

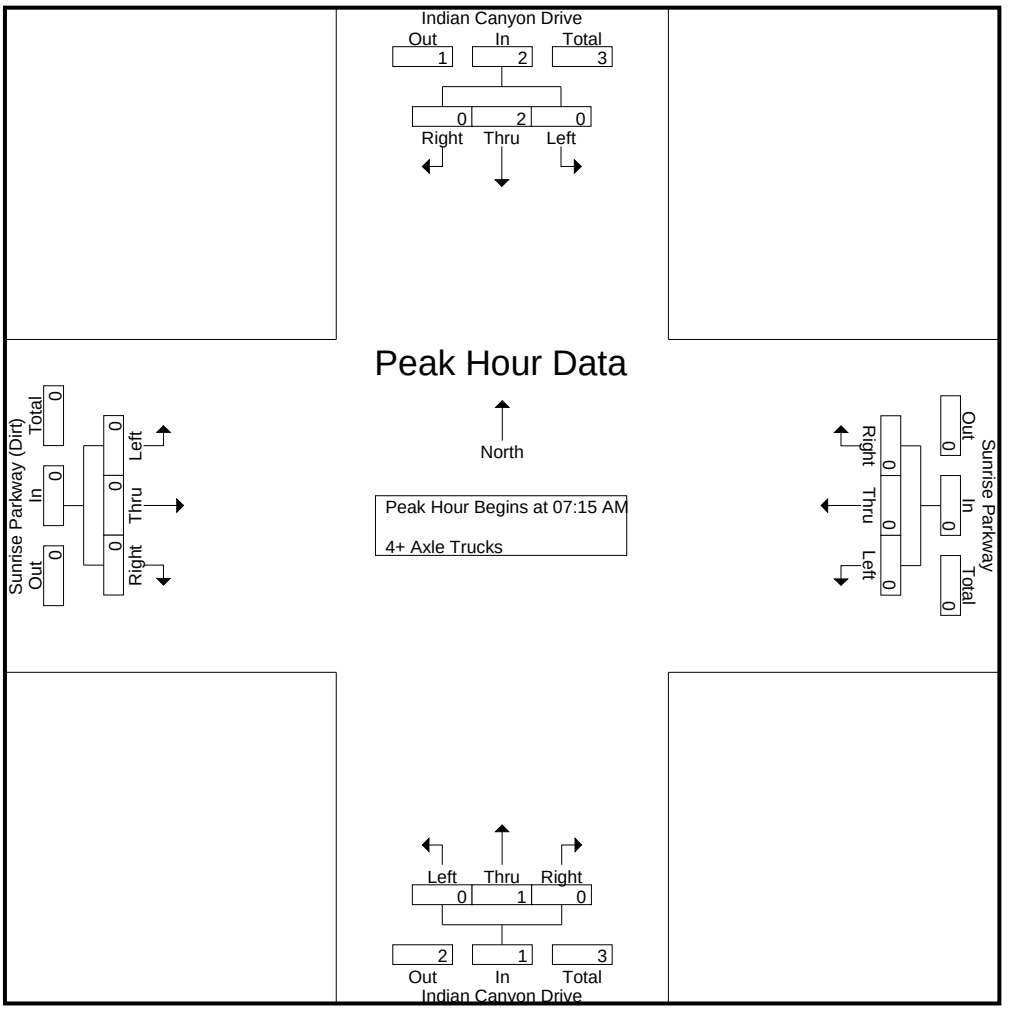
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
06:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	5	0	5	0	0	0	0	6
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
08:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	3	0	3	0	0	0	0	0	4	0	4	0	0	0	0	7
Grand Total	0	6	0	6	0	0	0	0	0	10	0	10	0	0	0	0	16
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	37.5	0	37.5	0	0	0	0	0	62.5	0	62.5	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**2**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.375

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City of Palm Springs
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Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

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File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
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Groups Printed- Buses

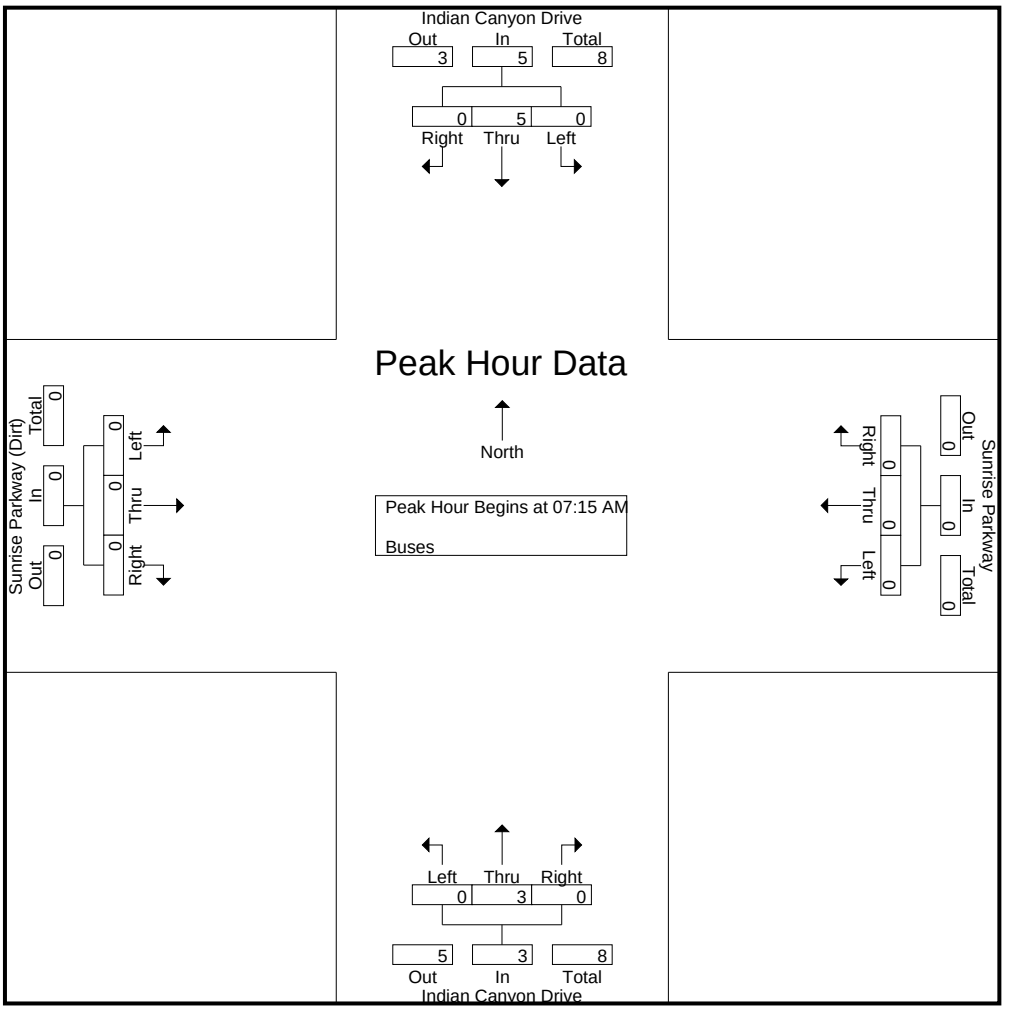
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
06:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Total	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	4	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
08:00 AM	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	3
08:15 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
08:30 AM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	4	0	4	0	0	0	0	0	3	0	3	0	0	0	0	7
Grand Total	0	9	0	9	0	0	0	0	0	7	0	7	0	0	0	0	16
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	56.2	0	56.2	0	0	0	0	0	43.8	0	43.8	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	**3**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	**3**
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0	3
Total Volume	0	5	0	5	0	0	0	0	0	3	0	3	0	0	0	0	8
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.417	.000	.417	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.667

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun AM
Site Code : 12223105
Start Date : 2/7/2023
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	**3**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0
Total Volume	0	5	0	5	0	0	0	0	0	3	0	3	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.417	.000	.417	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000

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File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks - Buses

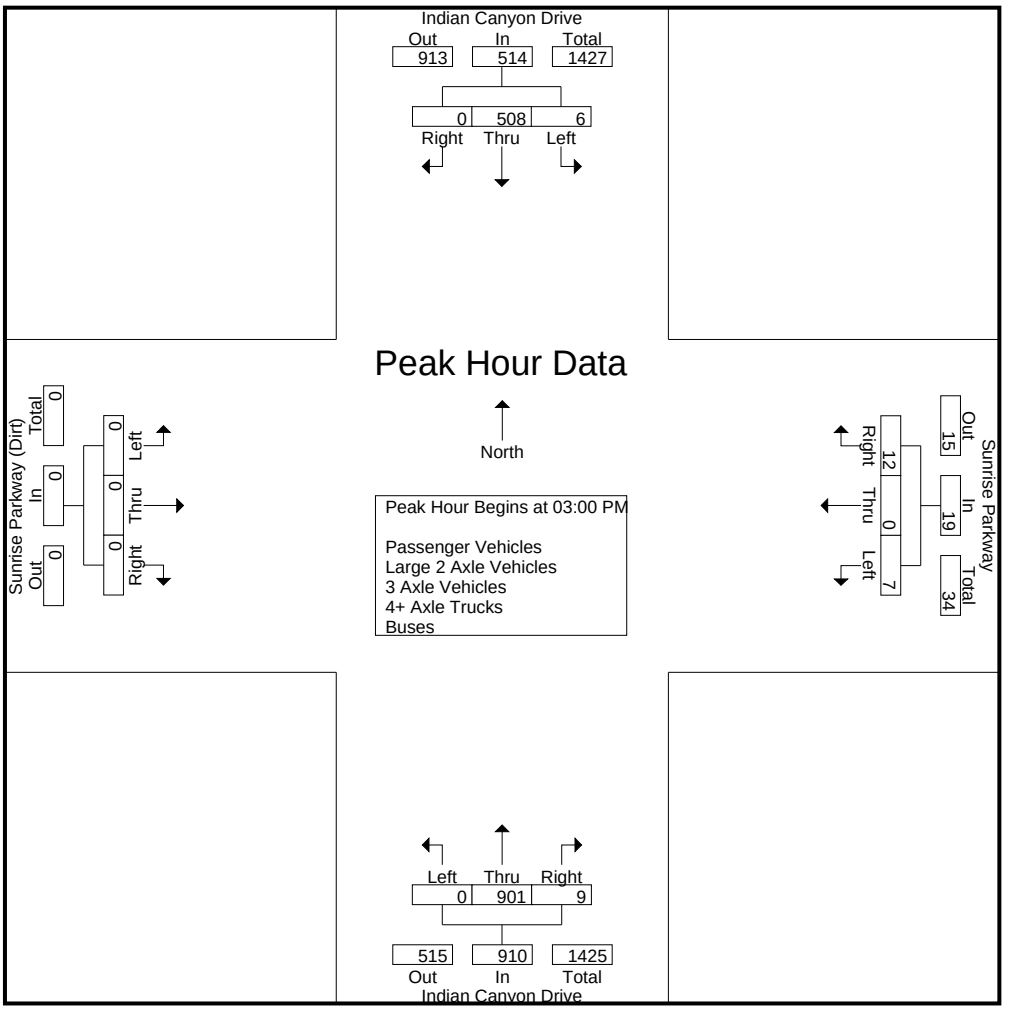
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	1	128	0	129	1	0	6	7	0	233	2	235	0	0	0	0	371
03:15 PM	1	145	0	146	3	0	2	5	0	220	2	222	0	0	0	0	373
03:30 PM	0	119	0	119	2	0	1	3	0	239	3	242	0	0	0	0	364
03:45 PM	4	116	0	120	1	0	3	4	0	209	2	211	0	0	0	0	335
Total	6	508	0	514	7	0	12	19	0	901	9	910	0	0	0	0	1443
04:00 PM	3	114	0	117	1	0	2	3	0	235	3	238	0	0	0	0	358
04:15 PM	2	146	0	148	0	0	1	1	0	233	1	234	0	0	0	0	383
04:30 PM	2	129	0	131	2	0	2	4	0	208	2	210	0	0	0	0	345
04:45 PM	0	135	0	135	0	0	0	0	0	183	0	183	0	0	0	0	318
Total	7	524	0	531	3	0	5	8	0	859	6	865	0	0	0	0	1404
05:00 PM	1	112	0	113	2	0	0	2	0	213	1	214	0	0	0	0	329
05:15 PM	2	118	0	120	1	0	2	3	0	223	2	225	0	0	0	0	348
05:30 PM	2	122	0	124	1	0	0	1	0	166	2	168	0	0	0	0	293
05:45 PM	1	95	0	96	1	0	1	2	0	134	1	135	0	0	0	0	233
Total	6	447	0	453	5	0	3	8	0	736	6	742	0	0	0	0	1203
Grand Total	19	1479	0	1498	15	0	20	35	0	2496	21	2517	0	0	0	0	4050
Apprch %	1.3	98.7	0		42.9	0	57.1		0	99.2	0.8		0	0	0		
Total %	0.5	36.5	0	37	0.4	0	0.5	0.9	0	61.6	0.5	62.1	0	0	0	0	
Passenger Vehicles	18	1457	0	1475	14	0	15	29	0	2448	18	2466	0	0	0	0	3970
% Passenger Vehicles	94.7	98.5	0	98.5	93.3	0	75	82.9	0	98.1	85.7	98	0	0	0	0	98
Large 2 Axle Vehicles	0	16	0	16	1	0	2	3	0	31	1	32	0	0	0	0	51
% Large 2 Axle Vehicles	0	1.1	0	1.1	6.7	0	10	8.6	0	1.2	4.8	1.3	0	0	0	0	1.3
3 Axle Vehicles	1	2	0	3	0	0	3	3	0	8	2	10	0	0	0	0	16
% 3 Axle Vehicles	5.3	0.1	0	0.2	0	0	15	8.6	0	0.3	9.5	0.4	0	0	0	0	0.4
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0	0	0
Buses	0	4	0	4	0	0	0	0	0	7	0	7	0	0	0	0	11
% Buses	0	0.3	0	0.3	0	0	0	0	0	0.3	0	0.3	0	0	0	0	0.3

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	1	128	0	129	1	0	**6**	**7**	0	233	2	235	0	0	0	0	371
03:15 PM	1	**145**	0	**146**	**3**	0	2	5	0	220	2	222	0	0	0	0	**373**
03:30 PM	0	119	0	119	2	0	1	3	0	**239**	**3**	**242**	0	0	0	0	364
03:45 PM	**4**	116	0	120	1	0	3	4	0	209	2	211	0	0	0	0	335
Total Volume	6	508	0	514	7	0	12	19	0	901	9	910	0	0	0	0	1443
% App. Total	1.2	98.8	0		36.8	0	63.2		0	99	1		0	0	0		
PHF	.375	.876	.000	.880	.583	.000	.500	.679	.000	.942	.750	.940	.000	.000	.000	.000	.967

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				03:00 PM				03:30 PM				03:00 PM			
+0 mins.	**3**	114	0	117	1	0	**6**	**7**	0	**239**	**3**	**242**	0	0	0	0
+15 mins.	2	**146**	0	**148**	**3**	0	2	5	0	209	2	211	0	0	0	0
+30 mins.	2	129	0	131	2	0	1	3	0	235	3	238	0	0	0	0
+45 mins.	0	135	0	135	1	0	3	4	0	233	1	234	0	0	0	0
Total Volume	7	524	0	531	7	0	12	19	0	916	9	925	0	0	0	0
% App. Total	1.3	98.7	0		36.8	0	63.2		0	99	1		0	0	0	
PHF	.583	.897	.000	.897	.583	.000	.500	.679	.000	.958	.750	.956	.000	.000	.000	.000

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- Passenger Vehicles

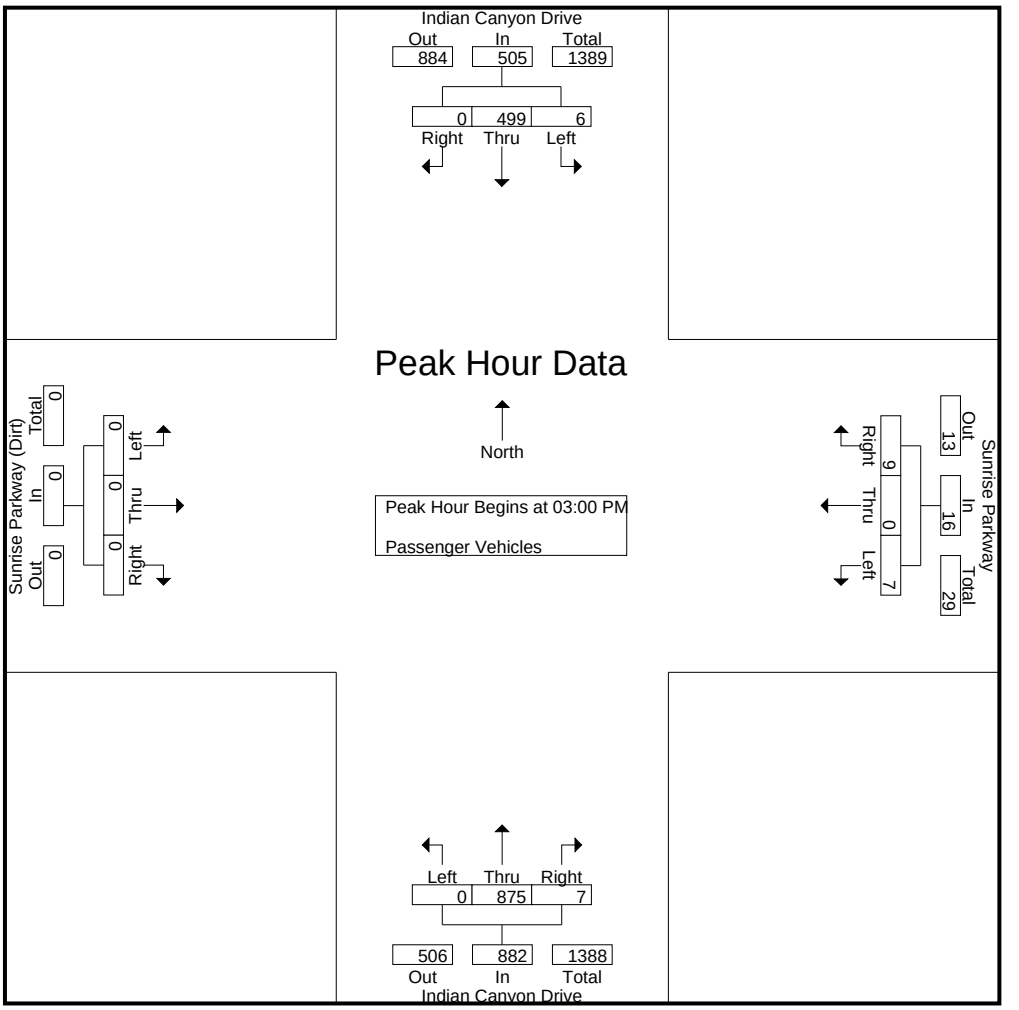
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	1	125	0	126	1	0	4	5	0	222	1	223	0	0	0	0	354
03:15 PM	1	140	0	141	3	0	2	5	0	212	2	214	0	0	0	0	360
03:30 PM	0	119	0	119	2	0	1	3	0	235	3	238	0	0	0	0	360
03:45 PM	4	115	0	119	1	0	2	3	0	206	1	207	0	0	0	0	329
Total	6	499	0	505	7	0	9	16	0	875	7	882	0	0	0	0	1403
04:00 PM	3	112	0	115	1	0	1	2	0	226	3	229	0	0	0	0	346
04:15 PM	1	144	0	145	0	0	1	1	0	227	0	227	0	0	0	0	373
04:30 PM	2	128	0	130	2	0	1	3	0	206	2	208	0	0	0	0	341
04:45 PM	0	134	0	134	0	0	0	0	0	180	0	180	0	0	0	0	314
Total	6	518	0	524	3	0	3	6	0	839	5	844	0	0	0	0	1374
05:00 PM	1	110	0	111	1	0	0	1	0	212	1	213	0	0	0	0	325
05:15 PM	2	113	0	115	1	0	2	3	0	223	2	225	0	0	0	0	343
05:30 PM	2	122	0	124	1	0	0	1	0	165	2	167	0	0	0	0	292
05:45 PM	1	95	0	96	1	0	1	2	0	134	1	135	0	0	0	0	233
Total	6	440	0	446	4	0	3	7	0	734	6	740	0	0	0	0	1193
Grand Total	18	1457	0	1475	14	0	15	29	0	2448	18	2466	0	0	0	0	3970
Apprch %	1.2	98.8	0		48.3	0	51.7		0	99.3	0.7		0	0	0		
Total %	0.5	36.7	0	37.2	0.4	0	0.4	0.7	0	61.7	0.5	62.1	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	1	125	0	126	1	0	**4**	**5**	0	222	1	223	0	0	0	0	354
03:15 PM	1	**140**	0	**141**	**3**	0	2	5	0	212	2	214	0	0	0	0	**360**
03:30 PM	0	119	0	119	2	0	1	3	0	**235**	**3**	**238**	0	0	0	0	360
03:45 PM	**4**	115	0	119	1	0	2	3	0	206	1	207	0	0	0	0	329
Total Volume	6	499	0	505	7	0	9	16	0	875	7	882	0	0	0	0	1403
% App. Total	1.2	98.8	0		43.8	0	56.2		0	99.2	0.8		0	0	0		
PHF	.375	.891	.000	.895	.583	.000	.563	.800	.000	.931	.583	.926	.000	.000	.000	.000	.974

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	1	125	0	126	1	0	**4**	**5**	0	222	1	223	0	0	0	0
+15 mins.	1	**140**	0	**141**	**3**	0	2	5	0	212	2	214	0	0	0	0
+30 mins.	0	119	0	119	2	0	1	3	0	**235**	**3**	**238**	0	0	0	0
+45 mins.	**4**	115	0	119	1	0	2	3	0	206	1	207	0	0	0	0
Total Volume	6	499	0	505	7	0	9	16	0	875	7	882	0	0	0	0
% App. Total	1.2	98.8	0		43.8	0	56.2		0	99.2	0.8		0	0	0	
PHF	.375	.891	.000	.895	.583	.000	.563	.800	.000	.931	.583	.926	.000	.000	.000	.000

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- Large 2 Axle Vehicles

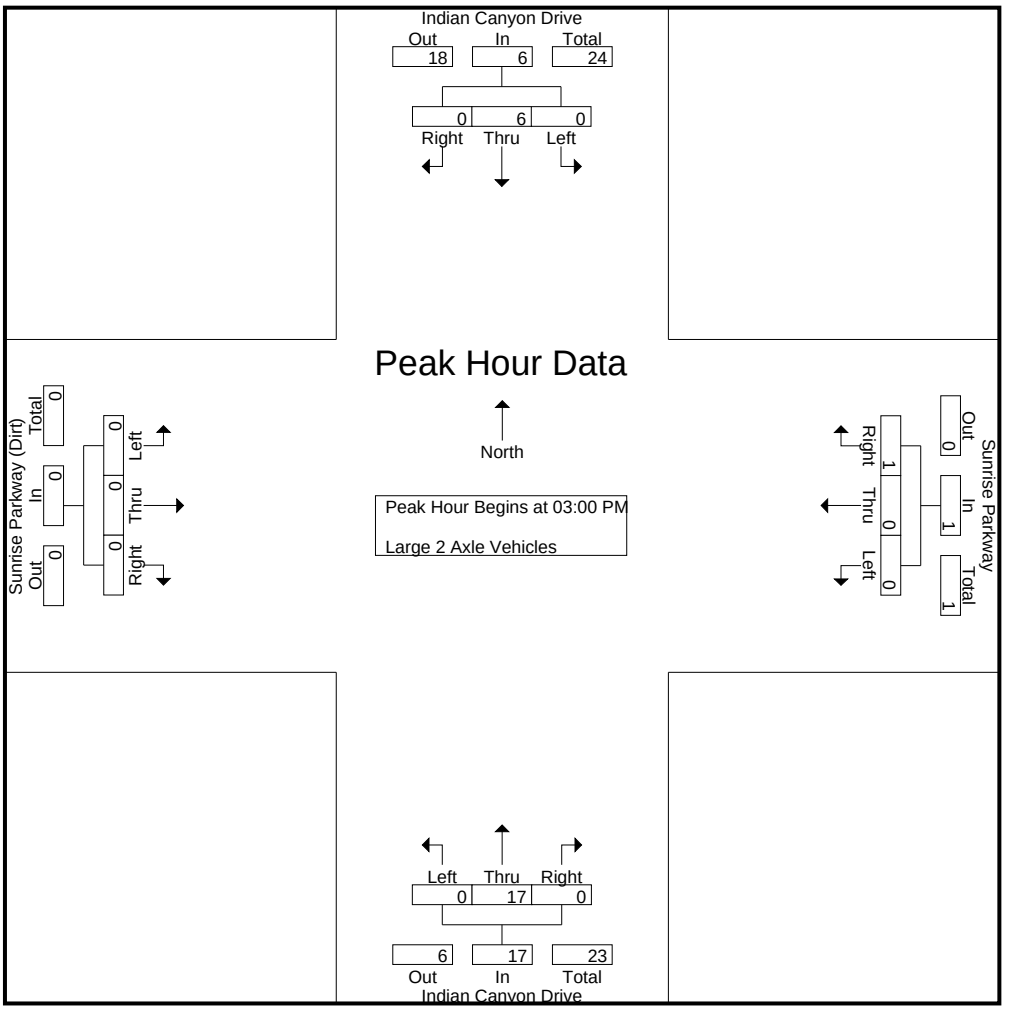
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	1	0	1	0	0	0	0	0	7	0	7	0	0	0	0	8
03:15 PM	0	5	0	5	0	0	0	0	0	5	0	5	0	0	0	0	10
03:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
03:45 PM	0	0	0	0	0	0	1	1	0	3	0	3	0	0	0	0	4
Total	0	6	0	6	0	0	1	1	0	17	0	17	0	0	0	0	24
04:00 PM	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
04:15 PM	0	2	0	2	0	0	0	0	0	4	1	5	0	0	0	0	7
04:30 PM	0	1	0	1	0	0	1	1	0	1	0	1	0	0	0	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
Total	0	5	0	5	0	0	1	1	0	12	1	13	0	0	0	0	19
05:00 PM	0	2	0	2	1	0	0	1	0	1	0	1	0	0	0	0	4
05:15 PM	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	5	0	5	1	0	0	1	0	2	0	2	0	0	0	0	8
Grand Total	0	16	0	16	1	0	2	3	0	31	1	32	0	0	0	0	51
Apprch %	0	100	0		33.3	0	66.7		0	96.9	3.1		0	0	0		
Total %	0	31.4	0	31.4	2	0	3.9	5.9	0	60.8	2	62.7	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	1	0	1	0	0	0	0	0	**7**	0	**7**	0	0	0	0	8
03:15 PM	0	**5**	0	**5**	0	0	0	0	0	5	0	5	0	0	0	0	**10**
03:30 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
03:45 PM	0	0	0	0	0	0	**1**	**1**	0	3	0	3	0	0	0	0	4
Total Volume	0	6	0	6	0	0	1	1	0	17	0	17	0	0	0	0	24
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0		
PHF	.000	.300	.000	.300	.000	.000	.250	.250	.000	.607	.000	.607	.000	.000	.000	.000	.600

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City of Palm Springs
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E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	1	0	1	0	0	0	0	0	**7**	0	**7**	0	0	0	0
+15 mins.	0	**5**	0	**5**	0	0	0	0	0	5	0	5	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	0	**1**	**1**	0	3	0	3	0	0	0	0
Total Volume	0	6	0	6	0	0	1	1	0	17	0	17	0	0	0	0
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0	
PHF	.000	.300	.000	.300	.000	.000	.250	.250	.000	.607	.000	.607	.000	.000	.000	.000

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City of Palm Springs
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E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- 3 Axle Vehicles

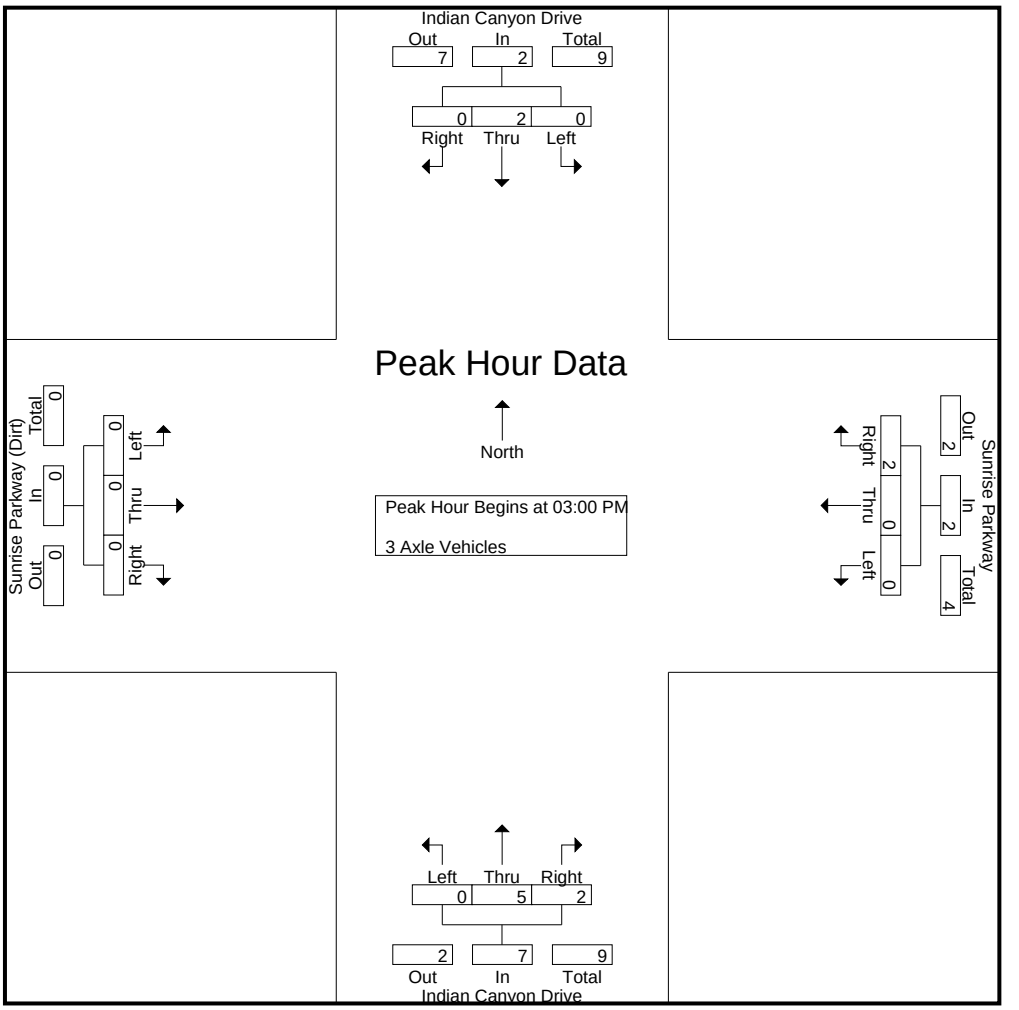
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	1	0	1	0	0	2	2	0	3	1	4	0	0	0	0	7
03:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
Total	0	2	0	2	0	0	2	2	0	5	2	7	0	0	0	0	11
04:00 PM	0	0	0	0	0	0	1	1	0	2	0	2	0	0	0	0	3
04:15 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	1	1	0	3	0	3	0	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	2	0	3	0	0	3	3	0	8	2	10	0	0	0	0	16
Apprch %	33.3	66.7	0		0	0	100		0	80	20		0	0	0		
Total %	6.2	12.5	0	18.8	0	0	18.8	18.8	0	50	12.5	62.5	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	**1**	0	**1**	0	0	**2**	**2**	0	**3**	**1**	**4**	0	0	0	0	**7**
03:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
Total Volume	0	2	0	2	0	0	2	2	0	5	2	7	0	0	0	0	11
% App. Total	0	100	0		0	0	100		0	71.4	28.6		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.250	.250	.000	.417	.500	.438	.000	.000	.000	.000	.393

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City of Palm Springs
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E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	**1**	0	**1**	0	0	**2**	**2**	0	**3**	**1**	**4**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0
Total Volume	0	2	0	2	0	0	2	2	0	5	2	7	0	0	0	0
% App. Total	0	100	0		0	0	100		0	71.4	28.6		0	0	0	
PHF	.000	.500	.000	.500	.000	.000	.250	.250	.000	.417	.500	.438	.000	.000	.000	.000

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E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
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Groups Printed- 4+ Axle Trucks

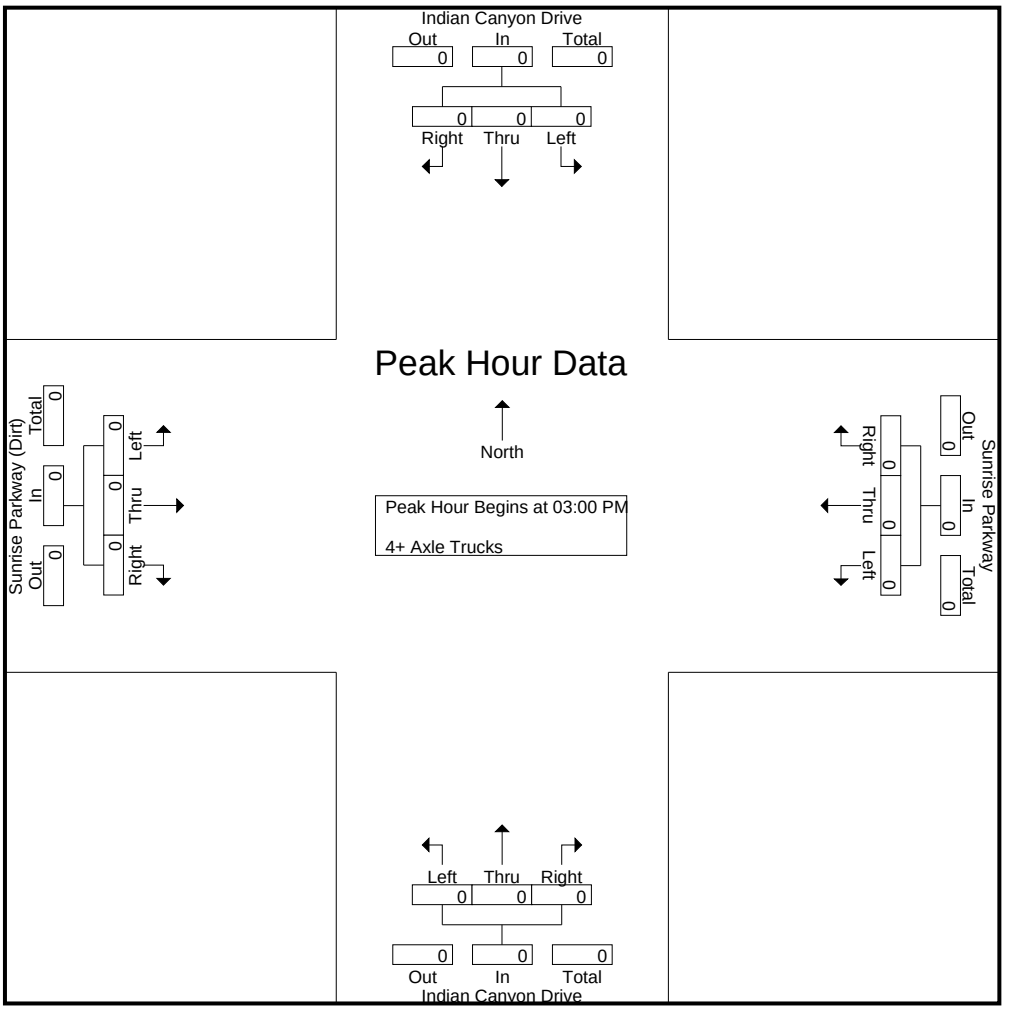
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
Apprch %	0	0	0		0	0	0		0	100	0		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 1

Groups Printed- Buses

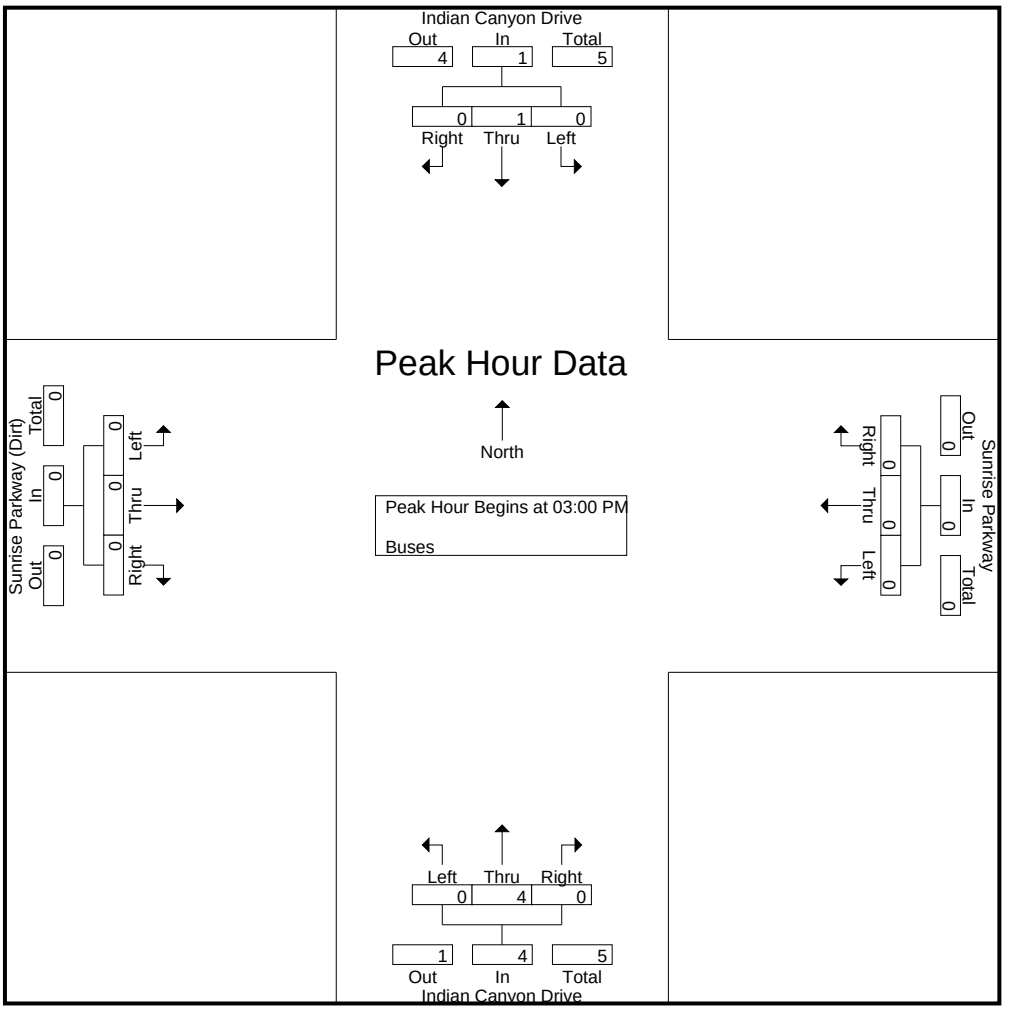
	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
03:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
04:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	3	0	3	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	4	0	4	0	0	0	0	0	7	0	7	0	0	0	0	11
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		
Total %	0	36.4	0	36.4	0	0	0	0	0	63.6	0	63.6	0	0	0	0	

	Indian Canyon Drive Southbound				Sunrise Parkway Westbound				Indian Canyon Drive Northbound				Sunrise Parkway (Dirt) Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	**1**	0	**1**	0	0	0	0	0	1	0	1	0	0	0	0	**2**
03:15 PM	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0	2
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0	5
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.625

Counts Unlimited, Inc.
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City of Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway
Weather: Clear

File Name : 03_PLS_IC_Sun PM
Site Code : 12223105
Start Date : 2/7/2023
Page No : 2



Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM				03:00 PM				03:00 PM				03:00 PM			
+0 mins.	0	**1**	0	**1**	0	0	0	0	0	1	0	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	4	0	4	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000

Location: Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway

Date: 2/7/2023
Day: Tuesday

PEDESTRIANS

	North Leg Indian Canyon Drive	East Leg Sunrise Parkway	South Leg Indian Canyon Drive	West Leg Sunrise Parkway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
6:00 AM	0	0	0	0	0
6:15 AM	0	0	0	0	0
6:30 AM	0	0	0	0	0
6:45 AM	0	0	0	0	0
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	1	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	1

	North Leg Indian Canyon Drive	East Leg Sunrise Parkway	South Leg Indian Canyon Drive	West Leg Sunrise Parkway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	0	1	0	0	1

Location: Palm Springs
N/S: Indian Canyon Drive
E/W: Sunrise Parkway

Date: 2/7/2023
Day: Tuesday

BICYCLES

	Southbound Indian Canyon Drive			Westbound Sunrise Parkway			Northbound Indian Canyon Drive			Eastbound Sunrise Parkway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	1	0	0	0	2	0	0	0	0	3

	Southbound Indian Canyon Drive			Westbound Sunrise Parkway			Northbound Indian Canyon Drive			Eastbound Sunrise Parkway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	0	0	0	0	0	2	0	0	0	0	2	4

Appendix B: Segment Traffic Count Data

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Classification Count

PLS001C
Site Code: 122-23105

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/07/23	1	70	15	0	3	0	0	0	1	0	0	0	0	90
01:00	0	52	2	0	2	0	0	0	1	0	0	0	0	57
02:00	0	36	1	0	0	0	0	0	0	0	0	0	0	37
03:00	0	28	6	1	1	1	0	2	0	0	0	0	0	39
04:00	1	41	7	0	0	0	0	0	1	0	0	0	0	50
05:00	0	92	18	1	3	0	0	1	0	0	0	0	0	115
06:00	1	184	49	1	9	0	0	0	1	0	0	0	0	245
07:00	5	282	60	2	19	2	4	5	1	0	**1**	0	0	381
08:00	2	319	72	3	19	6	6	4	**3**	**2**	1	0	0	437
09:00	**6**	**320**	81	6	31	4	9	4	2	2	0	0	0	465
10:00	2	298	77	6	32	**9**	**11**	**12**	3	0	0	0	0	450
11:00	1	303	**101**	**9**	**37**	4	7	7	1	0	0	0	0	**470**
12 PM	3	401	101	**8**	37	**9**	**8**	11	3	1	1	0	0	583
13:00	3	395	108	5	43	9	6	18	3	1	0	1	0	592
14:00	4	484	**177**	8	49	6	2	21	**4**	0	1	1	0	757
15:00	**10**	489	177	7	**58**	2	1	26	1	**2**	0	**3**	**2**	778
16:00	8	639	163	2	42	1	0	**31**	1	2	0	2	2	**893**
17:00	10	**648**	138	2	28	3	0	9	2	0	**3**	0	0	843
18:00	5	392	86	2	24	0	0	6	0	0	0	1	0	516
19:00	1	290	56	0	11	0	0	3	1	0	0	0	0	362
20:00	3	261	46	0	12	0	0	2	0	0	0	0	0	324
21:00	0	224	43	2	9	0	0	0	2	0	0	0	0	280
22:00	2	205	28	0	4	1	0	1	0	0	0	0	0	241
23:00	0	115	21	0	4	0	0	0	0	0	0	0	0	140
Total	68	6568	1633	65	477	57	54	163	31	10	7	8	4	9145
Percent	0.7%	71.8%	17.9%	0.7%	5.2%	0.6%	0.6%	1.8%	0.3%	0.1%	0.1%	0.1%	0.0%	
AM Peak	09:00	09:00	11:00	11:00	11:00	10:00	10:00	10:00	08:00	08:00	07:00			11:00
Vol.	6	320	101	9	37	9	11	12	3	2	1			470
PM Peak	15:00	17:00	14:00	12:00	15:00	12:00	12:00	16:00	14:00	15:00	17:00	15:00	15:00	16:00
Vol.	10	648	177	8	58	9	8	31	4	2	3	3	2	893

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Classification Count

PLS001C
Site Code: 122-23105

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/08/23	2	63	6	0	2	0	0	0	1	0	0	0	0	74
01:00	0	48	6	0	0	0	0	0	0	0	0	0	0	54
02:00	1	39	6	0	0	0	0	0	0	0	0	0	0	46
03:00	0	27	3	1	1	0	0	1	0	0	0	0	0	33
04:00	0	44	6	1	0	1	0	0	0	0	0	0	0	52
05:00	0	102	29	2	5	3	0	0	0	0	0	0	0	141
06:00	1	187	64	0	9	1	0	1	2	0	0	0	0	265
07:00	5	282	67	2	12	5	4	2	1	0	0	0	0	380
08:00	4	294	62	**6**	**34**	5	8	8	2	1	**1**	0	0	425
09:00	**6**	308	82	3	29	**8**	8	8	3	**2**	0	0	0	457
10:00	3	329	86	6	25	4	**16**	7	2	0	1	0	0	479
11:00	3	**349**	**94**	3	26	8	10	**15**	**4**	0	1	0	0	**513**
12 PM	3	370	103	4	37	**11**	**14**	11	2	1	**1**	0	0	557
13:00	2	383	110	6	29	9	14	11	**7**	1	0	0	0	572
14:00	1	408	119	**7**	38	10	11	17	2	1	1	0	0	615
15:00	6	558	**165**	4	**41**	5	2	**25**	1	0	1	**1**	0	809
16:00	**13**	600	165	1	39	4	2	24	1	**7**	1	0	**1**	**858**
17:00	7	**604**	126	4	27	1	1	8	2	1	0	1	0	782
18:00	1	371	101	2	14	0	0	7	0	0	0	0	0	496
19:00	1	290	46	1	17	0	0	3	0	0	0	0	0	358
20:00	2	257	50	1	6	0	1	2	0	0	0	0	0	319
21:00	0	208	34	0	4	0	0	0	0	0	0	0	0	246
22:00	1	205	37	0	4	0	0	1	0	0	1	0	0	249
23:00	0	131	19	0	1	0	0	0	0	0	0	0	0	151
Total	62	6457	1586	54	400	75	91	151	30	14	8	2	1	8931
Percent	0.7%	72.3%	17.8%	0.6%	4.5%	0.8%	1.0%	1.7%	0.3%	0.2%	0.1%	0.0%	0.0%	
AM Peak	09:00	11:00	11:00	08:00	08:00	09:00	10:00	11:00	11:00	09:00	08:00			11:00
Vol.	6	349	94	6	34	8	16	15	4	2	1			513
PM Peak	16:00	17:00	15:00	14:00	15:00	12:00	12:00	15:00	13:00	16:00	12:00	15:00	16:00	16:00
Vol.	13	604	165	7	41	11	14	25	7	7	1	1	1	858

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72 Hour Directional Classification Count

PLS001C
Site Code: 122-23105

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/09/23	0	62	8	0	0	0	0	0	0	0	0	0	0	70
01:00	1	42	2	0	3	0	0	0	0	0	0	0	0	48
02:00	0	47	7	0	2	0	0	0	0	0	0	0	0	56
03:00	0	33	5	1	1	0	1	1	0	0	0	0	0	42
04:00	0	41	7	0	2	0	0	0	0	0	0	0	0	50
05:00	0	82	23	1	5	0	0	1	**3**	0	0	0	0	115
06:00	2	187	62	0	17	0	0	3	2	**1**	0	0	0	274
07:00	5	316	67	4	21	2	4	10	1	0	**3**	0	0	433
08:00	1	329	70	9	21	6	12	10	2	0	3	0	**1**	464
09:00	5	327	88	**11**	32	**12**	**14**	8	3	1	0	0	1	502
10:00	**6**	304	**94**	7	**33**	8	14	15	3	1	2	0	1	488
11:00	5	**364**	92	9	32	10	13	**17**	3	1	0	0	0	**546**
12 PM	4	396	101	**12**	39	8	**17**	14	3	**2**	1	**1**	0	598
13:00	6	378	136	11	53	**9**	10	19	**4**	1	0	0	0	627
14:00	5	428	133	7	46	7	4	17	1	0	1	0	0	649
15:00	8	553	193	6	57	6	2	32	1	1	**3**	1	**1**	864
16:00	**14**	**579**	185	6	47	6	0	**38**	3	0	1	1	1	**881**
17:00	8	450	**259**	4	**73**	5	2	36	0	2	0	1	0	840
18:00	1	225	205	1	60	0	0	18	1	0	0	0	0	511
19:00	2	177	197	1	41	0	0	8	0	0	0	0	0	426
20:00	3	168	160	0	43	3	0	3	1	0	0	0	0	381
21:00	1	174	188	0	42	1	0	8	1	0	0	0	0	415
22:00	3	186	150	3	25	0	0	11	0	0	0	0	0	378
23:00	1	99	83	1	18	0	0	1	0	0	0	0	0	203
Total	81	5947	2515	94	713	83	93	270	32	10	14	4	5	9861
Percent	0.8%	60.3%	25.5%	1.0%	7.2%	0.8%	0.9%	2.7%	0.3%	0.1%	0.1%	0.0%	0.1%	
AM Peak	10:00	11:00	10:00	09:00	10:00	09:00	09:00	11:00	05:00	06:00	07:00		08:00	11:00
Vol.	6	364	94	11	33	12	14	17	3	1	3		1	546
PM Peak	16:00	16:00	17:00	12:00	17:00	13:00	12:00	16:00	13:00	12:00	15:00	12:00	15:00	16:00
Vol.	14	579	259	12	73	9	17	38	4	2	3	1	1	881
Grand Total	211	18972	5734	213	1590	215	238	584	93	34	29	14	10	27937
Percent	0.8%	67.9%	20.5%	0.8%	5.7%	0.8%	0.9%	2.1%	0.3%	0.1%	0.1%	0.1%	0.0%	

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Classification Count

PLS001C
Site Code: 122-23105

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/07/23	0	32	11	0	2	0	0	1	0	0	0	0	0	46
01:00	0	25	2	0	1	0	0	0	2	0	0	0	0	30
02:00	0	18	1	0	0	0	0	0	0	0	0	0	0	19
03:00	0	17	5	0	1	0	0	0	0	0	0	0	0	23
04:00	0	37	14	0	4	0	0	0	0	0	0	0	0	55
05:00	0	86	41	2	8	0	0	3	1	0	0	0	0	141
06:00	2	266	114	3	22	4	0	12	3	0	0	1	0	427
07:00	3	**619**	**190**	7	**38**	3	**1**	**37**	3	**1**	**6**	0	**1**	**909**
08:00	7	577	151	4	38	5	1	16	3	0	1	**2**	0	805
09:00	6	375	117	**11**	26	6	1	13	**4**	0	0	1	0	560
10:00	**8**	389	81	8	31	**9**	1	8	1	0	1	0	1	538
11:00	4	380	113	9	26	5	1	10	4	0	1	1	0	554
12 PM	2	402	85	7	26	**6**	**1**	**12**	**4**	0	0	0	0	545
13:00	4	351	80	**14**	**29**	3	1	6	1	0	0	0	0	489
14:00	2	412	98	4	24	4	0	6	1	0	0	0	0	551
15:00	3	417	99	0	24	3	1	3	1	0	**1**	0	0	552
16:00	3	**438**	**101**	0	20	1	0	7	1	0	0	0	0	**571**
17:00	**5**	396	70	2	10	0	0	7	0	**1**	0	0	0	491
18:00	2	309	60	0	16	0	0	2	0	0	0	0	0	389
19:00	1	188	30	0	10	1	0	0	0	0	0	0	0	230
20:00	1	148	24	0	5	1	0	0	0	0	0	0	0	179
21:00	0	113	21	0	1	0	0	1	2	0	0	0	0	138
22:00	0	90	15	0	3	0	0	1	0	0	0	0	0	109
23:00	1	62	6	1	1	0	0	0	0	0	0	0	0	71
Total	54	6147	1529	72	366	51	8	145	31	2	10	5	2	8422
Percent	0.6%	73.0%	18.2%	0.9%	4.3%	0.6%	0.1%	1.7%	0.4%	0.0%	0.1%	0.1%	0.0%	
AM Peak	10:00	07:00	07:00	09:00	07:00	10:00	07:00	07:00	09:00	07:00	07:00	08:00	07:00	07:00
Vol.	8	619	190	11	38	9	1	37	4	1	6	2	1	909
PM Peak	17:00	16:00	16:00	13:00	13:00	12:00	12:00	12:00	12:00	17:00	15:00			16:00
Vol.	5	438	101	14	29	6	1	12	4	1	1			571

Counts Unlimited, Inc.

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City of Palm Springs
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B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Classification Count

PLS001C
Site Code: 122-23105

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/08/23	0	38	8	1	0	0	0	0	0	0	0	0	0	47
01:00	0	19	5	0	1	0	**1**	0	0	0	0	0	0	26
02:00	0	17	5	0	1	0	0	0	0	0	0	0	0	23
03:00	0	22	8	0	1	0	0	1	0	0	0	0	0	32
04:00	0	37	13	0	2	3	0	0	1	0	0	0	0	56
05:00	0	104	37	1	12	0	0	1	1	0	0	0	0	156
06:00	2	287	113	1	34	2	0	12	1	0	**3**	0	0	455
07:00	1	**636**	**187**	8	**45**	9	1	**36**	3	**3**	3	**2**	**1**	**935**
08:00	**6**	560	165	11	45	8	1	18	**4**	2	1	0	0	821
09:00	4	392	113	**17**	32	9	0	15	0	0	0	0	0	582
10:00	4	369	111	13	14	9	0	15	2	0	1	0	1	539
11:00	4	359	94	13	30	**12**	0	5	3	1	0	0	0	521
12 PM	2	**387**	81	**13**	19	9	0	9	0	0	0	0	**1**	521
13:00	2	339	**100**	13	**37**	**12**	0	**10**	1	0	0	0	0	514
14:00	2	386	92	7	26	6	0	9	**2**	0	0	0	0	**530**
15:00	2	384	85	1	16	2	**2**	5	0	0	0	0	0	497
16:00	**3**	387	94	4	14	0	0	4	1	0	0	0	0	507
17:00	1	356	65	3	18	2	0	4	0	0	0	0	0	449
18:00	1	264	60	1	12	0	0	3	0	0	0	0	0	341
19:00	1	189	34	0	6	0	0	1	2	0	0	0	0	233
20:00	1	137	23	0	1	0	0	1	0	0	0	0	0	163
21:00	1	137	22	0	7	0	0	1	0	0	0	0	0	168
22:00	0	113	11	0	0	0	0	0	0	0	0	0	0	124
23:00	0	60	10	0	3	0	0	0	0	0	0	0	0	73
Total	37	5979	1536	107	376	83	5	150	21	6	8	2	3	8313
Percent	0.4%	71.9%	18.5%	1.3%	4.5%	1.0%	0.1%	1.8%	0.3%	0.1%	0.1%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	09:00	07:00	11:00	01:00	07:00	08:00	07:00	06:00	07:00	07:00	07:00
Vol.	6	636	187	17	45	12	1	36	4	3	3	2	1	935
PM Peak	16:00	12:00	13:00	12:00	13:00	13:00	15:00	13:00	14:00				12:00	14:00
Vol.	3	387	100	13	37	12	2	10	2				1	530

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72 Hour Directional Classification Count

PLS001C
Site Code: 122-23105

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/09/23	0	44	6	0	3	0	0	1	0	0	0	0	0	54
01:00	1	20	2	1	1	0	1	0	0	0	0	0	0	26
02:00	0	20	4	0	0	0	0	0	1	0	0	0	0	25
03:00	0	34	6	0	0	0	0	2	0	0	0	0	0	42
04:00	0	49	15	0	4	0	0	0	1	0	0	0	0	69
05:00	0	102	40	1	7	1	0	1	4	0	0	0	0	156
06:00	2	286	112	7	30	1	0	20	2	0	**3**	0	0	463
07:00	**6**	**685**	**196**	7	**49**	8	**2**	**42**	5	**1**	2	**1**	0	**1004**
08:00	2	548	166	**24**	42	**11**	1	27	4	1	1	1	0	828
09:00	3	421	114	19	39	11	0	19	3	1	0	0	0	630
10:00	6	346	99	17	33	5	0	10	**6**	0	0	0	0	522
11:00	6	367	110	10	35	8	0	17	2	1	1	1	0	558
12 PM	**6**	358	86	**14**	33	**9**	**2**	16	**8**	**4**	0	0	0	536
13:00	5	391	91	12	35	0	0	**19**	2	0	**1**	0	0	556
14:00	6	409	95	11	**39**	4	1	10	2	1	0	0	0	578
15:00	3	**496**	106	2	31	5	2	10	1	0	0	0	0	**656**
16:00	6	481	**114**	3	26	2	0	11	3	0	0	0	0	646
17:00	6	425	112	1	34	2	0	5	0	0	0	0	0	585
18:00	2	328	81	0	16	0	1	3	1	0	0	0	0	432
19:00	0	230	48	0	12	0	0	1	0	0	0	0	0	291
20:00	3	172	36	1	7	0	0	0	0	0	0	0	0	219
21:00	2	171	31	0	5	0	0	0	0	0	0	0	0	209
22:00	1	153	23	1	2	0	0	0	0	0	0	0	0	180
23:00	0	83	17	0	2	0	0	0	0	0	0	0	0	102
Total	66	6619	1710	131	485	67	10	214	45	9	8	3	0	9367
Percent	0.7%	70.7%	18.3%	1.4%	5.2%	0.7%	0.1%	2.3%	0.5%	0.1%	0.1%	0.0%	0.0%	
AM Peak	07:00	07:00	07:00	08:00	07:00	08:00	07:00	07:00	10:00	07:00	06:00	07:00		07:00
Vol.	6	685	196	24	49	11	2	42	6	1	3	1		1004
PM Peak	12:00	15:00	16:00	12:00	14:00	12:00	12:00	13:00	12:00	12:00	13:00			15:00
Vol.	6	496	114	14	39	9	2	19	8	4	1			656
Grand Total	157	18745	4775	310	1227	201	23	509	97	17	26	10	5	26102
Percent	0.6%	71.8%	18.3%	1.2%	4.7%	0.8%	0.1%	2.0%	0.4%	0.1%	0.1%	0.0%	0.0%	

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Northbound, Southbound

PLS001C
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Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
03/07/23	1	102	26	0	5	0	0	1	1	0	0	0	0	136
01:00	0	77	4	0	3	0	0	0	3	0	0	0	0	87
02:00	0	54	2	0	0	0	0	0	0	0	0	0	0	56
03:00	0	45	11	1	2	1	0	2	0	0	0	0	0	62
04:00	1	78	21	0	4	0	0	0	1	0	0	0	0	105
05:00	0	178	59	3	11	0	0	4	1	0	0	0	0	256
06:00	3	450	163	4	31	4	0	12	4	0	0	1	0	672
07:00	8	**901**	**250**	9	57	5	5	**42**	4	1	**7**	0	**1**	**1290**
08:00	9	896	223	7	57	11	7	20	**6**	**2**	2	**2**	0	1242
09:00	**12**	695	198	17	57	10	10	17	6	2	0	1	0	1025
10:00	10	687	158	14	**63**	**18**	**12**	20	4	0	1	0	1	988
11:00	5	683	214	**18**	63	9	8	17	5	0	1	1	0	1024
12 PM	5	803	186	15	63	**15**	**9**	23	**7**	1	1	0	0	1128
13:00	7	746	188	**19**	72	12	7	24	4	1	0	1	0	1081
14:00	6	896	275	12	73	10	2	27	5	0	1	1	0	1308
15:00	13	906	**276**	7	**82**	5	2	29	2	**2**	1	**3**	**2**	1330
16:00	11	**1077**	264	2	62	2	0	**38**	2	2	0	2	2	**1464**
17:00	**15**	1044	208	4	38	3	0	16	2	1	**3**	0	0	1334
18:00	7	701	146	2	40	0	0	8	0	0	0	1	0	905
19:00	2	478	86	0	21	1	0	3	1	0	0	0	0	592
20:00	4	409	70	0	17	1	0	2	0	0	0	0	0	503
21:00	0	337	64	2	10	0	0	1	4	0	0	0	0	418
22:00	2	295	43	0	7	1	0	2	0	0	0	0	0	350
23:00	1	177	27	1	5	0	0	0	0	0	0	0	0	211
Total	122	12715	3162	137	843	108	62	308	62	12	17	13	6	17567
Percent	0.7%	72.4%	18.0%	0.8%	4.8%	0.6%	0.4%	1.8%	0.4%	0.1%	0.1%	0.1%	0.0%	
AM Peak	09:00	07:00	07:00	11:00	10:00	10:00	10:00	07:00	08:00	08:00	07:00	08:00	07:00	07:00
Vol.	12	901	250	18	63	18	12	42	6	2	7	2	1	1290
PM Peak	17:00	16:00	15:00	13:00	15:00	12:00	12:00	16:00	12:00	15:00	17:00	15:00	15:00	16:00
Vol.	15	1077	276	19	82	15	9	38	7	2	3	3	2	1464

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Northbound, Southbound

PLS001C
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03/08/23	2	101	14	1	2	0	0	0	1	0	0	0	0	121
01:00	0	67	11	0	1	0	1	0	0	0	0	0	0	80
02:00	1	56	11	0	1	0	0	0	0	0	0	0	0	69
03:00	0	49	11	1	2	0	0	2	0	0	0	0	0	65
04:00	0	81	19	1	2	4	0	0	1	0	0	0	0	108
05:00	0	206	66	3	17	3	0	1	1	0	0	0	0	297
06:00	3	474	177	1	43	3	0	13	3	0	**3**	0	0	720
07:00	6	**918**	**254**	10	57	14	5	**38**	4	**3**	3	**2**	**1**	**1315**
08:00	**10**	854	227	17	**79**	13	9	26	6	3	2	0	0	1246
09:00	10	700	195	**20**	61	17	8	23	3	2	0	0	0	1039
10:00	7	698	197	19	39	13	**16**	22	4	0	2	0	1	1018
11:00	7	708	188	16	56	**20**	10	20	**7**	1	1	0	0	1034
12 PM	5	757	184	17	56	20	**14**	20	2	1	**1**	0	**1**	1078
13:00	4	722	210	**19**	**66**	**21**	14	21	**8**	1	0	0	0	1086
14:00	3	794	211	14	64	16	11	26	4	1	1	0	0	1145
15:00	8	942	250	5	57	7	4	**30**	1	0	1	**1**	0	1306
16:00	**16**	**987**	**259**	5	53	4	2	28	2	**7**	1	0	1	**1365**
17:00	8	960	191	7	45	3	1	12	2	1	0	1	0	1231
18:00	2	635	161	3	26	0	0	10	0	0	0	0	0	837
19:00	2	479	80	1	23	0	0	4	2	0	0	0	0	591
20:00	3	394	73	1	7	0	1	3	0	0	0	0	0	482
21:00	1	345	56	0	11	0	0	1	0	0	0	0	0	414
22:00	1	318	48	0	4	0	0	1	0	0	1	0	0	373
23:00	0	191	29	0	4	0	0	0	0	0	0	0	0	224
Total	99	12436	3122	161	776	158	96	301	51	20	16	4	4	17244
Percent	0.6%	72.1%	18.1%	0.9%	4.5%	0.9%	0.6%	1.7%	0.3%	0.1%	0.1%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	09:00	08:00	11:00	10:00	07:00	11:00	07:00	06:00	07:00	07:00	07:00
Vol.	10	918	254	20	79	20	16	38	7	3	3	2	1	1315
PM Peak	16:00	16:00	16:00	13:00	13:00	13:00	12:00	15:00	13:00	16:00	12:00	15:00	12:00	16:00
Vol.	16	987	259	19	66	21	14	30	8	7	1	1	1	1365

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03/09/23	0	106	14	0	3	0	0	1	0	0	0	0	0	124
01:00	2	62	4	1	4	0	1	0	0	0	0	0	0	74
02:00	0	67	11	0	2	0	0	0	1	0	0	0	0	81
03:00	0	67	11	1	1	0	1	3	0	0	0	0	0	84
04:00	0	90	22	0	6	0	0	0	1	0	0	0	0	119
05:00	0	184	63	2	12	1	0	2	7	0	0	0	0	271
06:00	4	473	174	7	47	1	0	23	4	1	3	0	0	737
07:00	11	**1001**	**263**	11	70	10	6	**52**	6	1	**5**	**1**	0	**1437**
08:00	3	877	236	**33**	63	17	13	37	6	1	4	1	**1**	1292
09:00	8	748	202	30	**71**	**23**	**14**	27	6	**2**	0	0	1	1132
10:00	**12**	650	193	24	66	13	14	25	**9**	1	2	0	1	1010
11:00	11	731	202	19	67	18	13	34	5	2	1	1	0	1104
12 PM	10	754	187	**26**	72	**17**	**19**	30	**11**	**6**	1	**1**	0	1134
13:00	11	769	227	23	88	9	10	38	6	1	1	0	0	1183
14:00	11	837	228	18	85	11	5	27	3	1	1	0	0	1227
15:00	11	1049	299	8	88	11	4	42	2	1	**3**	1	**1**	1520
16:00	**20**	**1060**	299	9	73	8	0	**49**	6	0	1	1	1	**1527**
17:00	14	875	**371**	5	**107**	7	2	41	0	2	0	1	0	1425
18:00	3	553	286	1	76	0	1	21	2	0	0	0	0	943
19:00	2	407	245	1	53	0	0	9	0	0	0	0	0	717
20:00	6	340	196	1	50	3	0	3	1	0	0	0	0	600
21:00	3	345	219	0	47	1	0	8	1	0	0	0	0	624
22:00	4	339	173	4	27	0	0	11	0	0	0	0	0	558
23:00	1	182	100	1	20	0	0	1	0	0	0	0	0	305
Total	147	12566	4225	225	1198	150	103	484	77	19	22	7	5	19228
Percent	0.8%	65.4%	22.0%	1.2%	6.2%	0.8%	0.5%	2.5%	0.4%	0.1%	0.1%	0.0%	0.0%	
AM Peak	10:00	07:00	07:00	08:00	09:00	09:00	09:00	07:00	10:00	09:00	07:00	07:00	08:00	07:00
Vol.	12	1001	263	33	71	23	14	52	9	2	5	1	1	1437
PM Peak	16:00	16:00	17:00	12:00	17:00	12:00	12:00	16:00	12:00	12:00	15:00	12:00	15:00	16:00
Vol.	20	1060	371	26	107	17	19	49	11	6	3	1	1	1527
Grand Total	368	37717	10509	523	2817	416	261	1093	190	51	55	24	15	54039
Percent	0.7%	69.8%	19.4%	1.0%	5.2%	0.8%	0.5%	2.0%	0.4%	0.1%	0.1%	0.0%	0.0%	

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City of Palm Springs
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72 Hour Directional Speed Survey

PLS001S
Site Code: 122-23105

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/07/23	0	0	0	0	1	0	0	6	22	22	20	13	3	3	90
01:00	0	0	0	0	0	0	0	2	11	20	10	8	1	5	57
02:00	0	0	0	0	0	0	1	2	9	12	5	4	1	3	37
03:00	1	0	0	0	0	0	3	0	7	16	7	4	1	0	39
04:00	0	0	0	0	1	0	1	3	6	9	19	7	3	1	50
05:00	0	0	0	0	0	0	1	8	21	39	23	11	9	3	115
06:00	0	0	0	0	1	0	2	11	40	61	67	36	21	6	245
07:00	3	0	1	0	0	2	1	20	41	104	96	71	27	15	381
08:00	1	0	0	0	0	3	8	21	65	116	119	63	26	15	437
09:00	4	0	0	0	0	3	13	36	72	144	126	50	12	6	466
10:00	2	0	0	0	0	5	18	35	63	128	119	50	19	12	451
11:00	8	0	0	0	0	2	9	37	82	129	119	54	19	12	471
12 PM	6	0	0	0	0	3	10	31	81	160	175	80	27	11	584
13:00	8	0	1	1	0	3	9	39	107	158	169	57	30	12	594
14:00	7	0	0	0	1	0	2	33	157	216	196	97	29	19	757
15:00	11	0	0	0	1	0	9	30	156	250	194	88	24	16	779
16:00	12	0	2	0	3	4	11	49	155	277	245	96	28	12	894
17:00	10	0	0	0	0	1	1	23	95	286	250	111	46	21	844
18:00	4	0	0	0	0	0	6	21	111	158	142	48	20	7	517
19:00	1	0	0	0	0	1	5	27	85	109	86	31	10	7	362
20:00	1	0	0	0	0	0	4	28	69	111	71	26	8	6	324
21:00	1	0	0	0	0	1	3	8	69	84	65	27	8	14	280
22:00	2	0	0	0	0	1	3	17	45	68	64	24	16	2	242
23:00	0	0	0	0	0	0	1	13	18	43	28	21	8	8	140
Total	82	0	4	1	8	29	121	500	1587	2720	2415	1077	396	216	9156

Daily

15th Percentile :	51 MPH
50th Percentile :	58 MPH
85th Percentile :	65 MPH
95th Percentile :	69 MPH

Statistics

Mean Speed(Average) :	59 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	5135
Percent in Pace :	56.1%
Number of Vehicles > 55 MPH :	6824
Percent of Vehicles > 55 MPH :	74.5%

Counts Unlimited, Inc.

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey

PLS001S
Site Code: 122-23105

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/08/23	0	0	0	0	0	1	2	7	11	23	15	11	4	0	74
01:00	0	0	0	0	0	0	2	7	8	21	10	1	3	2	54
02:00	0	0	0	0	0	1	0	4	9	12	12	5	3	0	46
03:00	0	0	0	0	0	0	0	5	8	9	4	4	3	0	33
04:00	0	0	0	0	0	0	1	5	6	21	10	5	2	2	52
05:00	0	0	0	0	0	0	3	11	18	45	27	17	12	8	141
06:00	1	1	1	0	1	0	0	6	29	73	87	39	19	9	266
07:00	8	0	0	0	0	0	6	10	44	91	125	63	27	8	382
08:00	2	0	0	0	0	4	11	19	68	116	113	60	24	9	426
09:00	4	0	0	1	0	2	13	20	82	114	139	56	16	10	457
10:00	5	1	0	0	1	4	10	27	78	158	114	60	13	8	479
11:00	8	0	0	1	0	1	15	29	84	127	137	78	20	14	514
12 PM	8	0	0	1	0	1	16	24	77	169	149	73	30	10	558
13:00	4	0	0	1	1	1	16	28	77	171	175	73	15	11	573
14:00	7	0	0	0	1	4	16	29	108	161	161	98	20	12	617
15:00	10	0	0	1	0	2	8	35	97	276	200	126	29	25	809
16:00	21	0	0	0	1	1	8	39	139	223	291	94	34	9	860
17:00	6	0	0	0	0	0	4	16	138	249	234	91	36	9	783
18:00	3	0	0	0	0	0	8	25	114	172	106	50	16	4	498
19:00	1	0	0	1	0	2	8	22	82	109	86	35	9	3	358
20:00	0	0	0	0	0	0	4	28	62	117	70	27	7	4	319
21:00	0	0	0	0	0	1	3	9	61	77	52	28	4	11	246
22:00	2	0	0	0	0	0	3	11	52	78	65	24	10	4	249
23:00	1	0	0	0	0	2	0	3	28	41	43	15	7	11	151
Total	91	2	1	6	5	27	157	419	1480	2653	2425	1133	363	183	8945

Daily

15th Percentile :	52 MPH
50th Percentile :	59 MPH
85th Percentile :	65 MPH
95th Percentile :	69 MPH

Statistics

Mean Speed(Average) :	59 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	5078
Percent in Pace :	56.8%
Number of Vehicles > 55 MPH :	6757
Percent of Vehicles > 55 MPH :	75.5%

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey

PLS001S
Site Code: 122-23105

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/09/23	0	1	0	0	0	1	1	3	12	21	18	8	2	3	70
01:00	0	0	0	0	0	0	1	4	8	8	17	7	2	1	48
02:00	0	0	0	0	0	0	1	5	11	18	11	6	3	1	56
03:00	0	0	0	0	0	0	2	4	11	9	9	4	0	3	42
04:00	0	0	0	0	0	0	1	5	10	8	8	9	7	2	50
05:00	1	0	0	0	0	0	2	8	21	27	27	14	10	5	115
06:00	0	0	1	0	0	0	3	16	30	58	93	40	26	7	274
07:00	8	0	0	0	0	3	6	14	46	110	129	78	25	17	436
08:00	3	0	0	0	0	3	12	27	71	140	123	60	17	8	464
09:00	5	0	1	0	1	2	7	40	107	161	111	39	22	8	504
10:00	7	1	0	0	1	1	14	19	66	137	150	72	11	10	489
11:00	5	0	0	0	0	1	8	37	87	162	135	77	23	12	547
12 PM	9	0	0	0	1	2	6	31	73	151	182	109	25	11	600
13:00	7	0	0	0	0	1	10	28	109	169	161	90	38	15	628
14:00	11	0	0	0	1	1	5	25	66	171	205	113	38	15	651
15:00	9	0	0	0	0	2	6	26	114	242	260	129	50	27	865
16:00	20	3	0	0	0	2	6	36	145	262	221	133	39	17	884
17:00	12	0	0	0	0	1	0	6	29	149	259	208	106	71	841
18:00	3	0	0	0	0	0	0	13	27	102	140	123	66	38	512
19:00	3	0	0	0	0	1	2	2	23	81	125	94	51	45	427
20:00	2	0	0	0	0	0	2	7	44	92	108	77	31	19	382
21:00	0	0	0	0	0	0	1	3	27	93	104	98	49	40	415
22:00	2	0	0	0	0	0	1	5	18	72	88	92	57	43	378
23:00	1	0	0	0	0	0	0	3	13	36	58	42	33	17	203
Total	108	5	2	0	4	21	97	367	1168	2479	2742	1722	731	435	9881

Daily

15th Percentile :	53 MPH
50th Percentile :	60 MPH
85th Percentile :	68 MPH
95th Percentile :	71 MPH

Statistics

Mean Speed(Average) :	61 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	5221
Percent in Pace :	52.8%
Number of Vehicles > 55 MPH :	8109
Percent of Vehicles > 55 MPH :	82.1%

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey

PLS001S
Site Code: 122-23105

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/07/23	0	0	0	0	0	0	0	6	5	15	9	9	0	2	46
01:00	0	0	0	0	0	0	0	2	2	12	8	1	4	1	30
02:00	0	0	0	0	0	0	0	1	3	4	5	2	1	3	19
03:00	0	0	0	0	0	0	0	1	5	4	3	4	3	3	23
04:00	0	0	0	0	0	0	1	3	9	13	11	13	4	1	55
05:00	0	0	0	0	0	1	0	4	23	30	44	22	12	5	141
06:00	2	0	0	0	0	0	2	10	57	111	135	75	24	11	427
07:00	10	0	0	0	0	0	8	11	111	242	276	159	65	29	911
08:00	16	0	2	0	0	0	3	18	122	248	244	109	33	13	808
09:00	6	1	0	0	0	1	9	18	87	164	154	80	27	13	560
10:00	7	0	0	0	0	1	11	23	74	150	157	86	20	10	539
11:00	6	0	0	0	0	1	6	16	56	150	175	108	22	15	555
12 PM	2	0	0	0	0	1	8	10	65	171	192	68	12	16	545
13:00	6	0	0	0	0	4	5	25	61	124	155	76	31	4	491
14:00	3	0	0	0	0	1	3	9	61	155	179	89	37	15	552
15:00	9	0	0	0	0	1	0	11	65	188	160	74	36	8	552
16:00	5	0	1	0	0	0	4	16	54	142	183	115	35	17	572
17:00	7	0	0	0	1	0	4	6	47	133	155	92	28	18	491
18:00	1	0	0	0	0	1	1	12	57	117	102	56	26	16	389
19:00	1	0	0	0	0	0	3	8	23	60	70	31	19	15	230
20:00	0	0	0	0	0	1	1	7	19	42	52	36	15	6	179
21:00	0	0	0	0	0	0	1	10	17	42	38	19	6	5	138
22:00	0	0	0	0	0	1	2	1	12	28	33	13	8	11	109
23:00	0	0	0	0	0	0	0	5	10	21	17	12	4	2	71
Total	81	1	3	0	1	14	72	233	1045	2366	2557	1349	472	239	8433

Daily

15th Percentile :	53 MPH
50th Percentile :	60 MPH
85th Percentile :	67 MPH
95th Percentile :	70 MPH

Statistics

Mean Speed(Average) :	60 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	4923
Percent in Pace :	58.4%
Number of Vehicles > 55 MPH :	6983
Percent of Vehicles > 55 MPH :	82.8%

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Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey

PLS001S
Site Code: 122-23105

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/08/23	0	0	0	0	0	0	0	3	8	14	13	3	2	4	47
01:00	1	0	0	1	0	1	2	1	4	4	7	4	1	0	26
02:00	0	0	0	0	0	0	0	2	3	6	3	7	1	1	23
03:00	0	0	0	0	0	0	0	3	5	7	7	4	4	2	32
04:00	0	0	0	0	0	0	2	8	6	16	9	9	3	3	56
05:00	0	0	0	0	0	0	2	4	16	32	49	33	14	6	156
06:00	7	0	0	0	0	0	6	17	33	101	153	91	31	17	456
07:00	13	0	0	0	1	0	5	31	89	225	318	174	48	32	936
08:00	10	0	1	1	1	3	10	23	72	218	245	166	45	28	823
09:00	1	0	0	0	0	1	10	14	71	171	176	92	26	20	582
10:00	3	0	0	0	0	0	4	16	76	175	140	82	33	11	540
11:00	3	0	0	0	0	1	7	18	71	152	165	71	23	10	521
12 PM	4	0	0	0	1	1	8	14	68	139	158	82	34	13	522
13:00	5	0	0	2	1	1	5	19	65	123	165	85	34	11	516
14:00	1	0	0	0	0	2	6	6	64	139	175	87	33	17	530
15:00	1	0	0	0	0	0	1	5	47	140	155	96	31	21	497
16:00	4	0	0	0	0	0	2	6	38	105	180	112	30	30	507
17:00	0	0	0	0	0	1	0	9	51	128	139	81	27	13	449
18:00	2	0	0	0	1	0	2	6	39	76	111	69	24	12	342
19:00	1	0	0	0	0	0	1	2	22	52	74	45	26	10	233
20:00	1	0	0	0	0	0	0	3	16	38	48	29	15	13	163
21:00	1	0	0	0	0	0	0	3	15	41	51	33	16	8	168
22:00	1	0	0	0	0	0	1	4	16	38	33	14	11	6	124
23:00	0	0	0	0	0	0	1	1	16	18	18	9	5	5	73
Total	59	0	1	4	5	11	75	218	911	2158	2592	1478	517	293	8322

Daily

15th Percentile :	54 MPH
50th Percentile :	61 MPH
85th Percentile :	67 MPH
95th Percentile :	71 MPH

Statistics

Mean Speed(Average) :	61 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	4750
Percent in Pace :	57.1%
Number of Vehicles > 55 MPH :	7038
Percent of Vehicles > 55 MPH :	84.6%

Counts Unlimited, Inc.

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey

PLS001S
Site Code: 122-23105

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/09/23	1	0	0	0	0	0	0	1	7	14	12	11	5	3	54
01:00	0	0	0	0	0	0	0	1	5	4	11	4	1	0	26
02:00	0	0	0	0	0	0	0	4	6	4	6	2	2	1	25
03:00	0	0	0	0	0	0	0	4	12	9	6	5	3	3	42
04:00	0	0	0	0	0	0	1	0	6	18	16	9	9	10	69
05:00	1	0	0	0	0	0	1	2	25	39	35	33	16	4	156
06:00	6	0	0	0	0	0	5	10	53	117	131	82	44	17	465
07:00	22	0	2	0	0	0	5	24	80	283	314	185	56	34	1005
08:00	11	1	0	0	0	3	5	17	108	234	226	140	56	28	829
09:00	6	1	1	0	0	7	10	22	79	189	189	80	33	14	631
10:00	7	1	0	0	0	1	5	14	80	142	147	77	37	11	522
11:00	5	1	0	0	0	3	8	20	76	153	161	85	28	18	558
12 PM	2	0	0	0	0	1	3	21	74	168	157	88	16	6	536
13:00	4	0	0	0	0	1	2	10	83	153	171	101	25	7	557
14:00	5	0	0	0	0	0	2	12	69	141	173	115	47	16	580
15:00	3	0	0	0	0	0	1	5	60	171	221	122	47	26	656
16:00	2	0	0	0	2	2	2	10	64	180	207	106	50	22	647
17:00	7	0	0	0	0	0	0	6	50	142	222	102	36	21	586
18:00	3	0	0	0	0	0	5	9	50	117	121	86	29	13	433
19:00	0	0	0	0	0	1	2	7	30	86	84	42	30	9	291
20:00	1	0	0	0	0	0	0	1	16	57	62	48	21	13	219
21:00	0	0	0	0	0	1	1	6	16	45	66	37	24	13	209
22:00	0	0	0	0	0	0	1	3	16	36	57	39	17	11	180
23:00	0	0	0	0	0	0	0	2	7	24	31	22	9	7	102
Total	86	4	3	0	2	20	59	211	1072	2526	2826	1621	641	307	9378

Daily

15th Percentile :	54 MPH
50th Percentile :	60 MPH
85th Percentile :	67 MPH
95th Percentile :	71 MPH

Statistics

Mean Speed(Average) :	61 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	5352
Percent in Pace :	57.1%
Number of Vehicles > 55 MPH :	7921
Percent of Vehicles > 55 MPH :	84.5%

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey
Northbound, Southbound

PLS001S
Site Code: 122-23105

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/07/23	0	0	0	0	1	0	0	12	27	37	29	22	3	5	136
01:00	0	0	0	0	0	0	0	4	13	32	18	9	5	6	87
02:00	0	0	0	0	0	0	1	3	12	16	10	6	2	6	56
03:00	1	0	0	0	0	0	3	1	12	20	10	8	4	3	62
04:00	0	0	0	0	1	0	2	6	15	22	30	20	7	2	105
05:00	0	0	0	0	0	1	1	12	44	69	67	33	21	8	256
06:00	2	0	0	0	1	0	4	21	97	172	202	111	45	17	672
07:00	13	0	1	0	0	2	9	31	152	346	372	230	92	44	1292
08:00	17	0	2	0	0	3	11	39	187	364	363	172	59	28	1245
09:00	10	1	0	0	0	4	22	54	159	308	280	130	39	19	1026
10:00	9	0	0	0	0	6	29	58	137	278	276	136	39	22	990
11:00	14	0	0	0	0	3	15	53	138	279	294	162	41	27	1026
12 PM	8	0	0	0	0	4	18	41	146	331	367	148	39	27	1129
13:00	14	0	1	1	0	7	14	64	168	282	324	133	61	16	1085
14:00	10	0	0	0	1	1	5	42	218	371	375	186	66	34	1309
15:00	20	0	0	0	1	1	9	41	221	438	354	162	60	24	1331
16:00	17	0	3	0	3	4	15	65	209	419	428	211	63	29	1466
17:00	17	0	0	0	1	1	5	29	142	419	405	203	74	39	1335
18:00	5	0	0	0	0	1	7	33	168	275	244	104	46	23	906
19:00	2	0	0	0	0	1	8	35	108	169	156	62	29	22	592
20:00	1	0	0	0	0	1	5	35	88	153	123	62	23	12	503
21:00	1	0	0	0	0	1	4	18	86	126	103	46	14	19	418
22:00	2	0	0	0	0	2	5	18	57	96	97	37	24	13	351
23:00	0	0	0	0	0	0	1	18	28	64	45	33	12	10	211
Total	163	1	7	1	9	43	193	733	2632	5086	4972	2426	868	455	17589

Daily

15th Percentile :	52 MPH
50th Percentile :	59 MPH
85th Percentile :	66 MPH
95th Percentile :	70 MPH

Statistics

Mean Speed(Average) :	60 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	10058
Percent in Pace :	57.2%
Number of Vehicles > 55 MPH :	13807
Percent of Vehicles > 55 MPH :	78.5%

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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey
Northbound, Southbound

PLS001S
Site Code: 122-23105

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/08/23	0	0	0	0	0	1	2	10	19	37	28	14	6	4	121
01:00	1	0	0	1	0	1	4	8	12	25	17	5	4	2	80
02:00	0	0	0	0	0	1	0	6	12	18	15	12	4	1	69
03:00	0	0	0	0	0	0	0	8	13	16	11	8	7	2	65
04:00	0	0	0	0	0	0	3	13	12	37	19	14	5	5	108
05:00	0	0	0	0	0	0	5	15	34	77	76	50	26	14	297
06:00	8	1	1	0	1	0	6	23	62	174	240	130	50	26	722
07:00	21	0	0	0	1	0	11	41	133	316	443	237	75	40	1318
08:00	12	0	1	1	1	7	21	42	140	334	358	226	69	37	1249
09:00	5	0	0	1	0	3	23	34	153	285	315	148	42	30	1039
10:00	8	1	0	0	1	4	14	43	154	333	254	142	46	19	1019
11:00	11	0	0	1	0	2	22	47	155	279	302	149	43	24	1035
12 PM	12	0	0	1	1	2	24	38	145	308	307	155	64	23	1080
13:00	9	0	0	3	2	2	21	47	142	294	340	158	49	22	1089
14:00	8	0	0	0	1	6	22	35	172	300	336	185	53	29	1147
15:00	11	0	0	1	0	2	9	40	144	416	355	222	60	46	1306
16:00	25	0	0	0	1	1	10	45	177	328	471	206	64	39	1367
17:00	6	0	0	0	0	1	4	25	189	377	373	172	63	22	1232
18:00	5	0	0	0	1	0	10	31	153	248	217	119	40	16	840
19:00	2	0	0	1	0	2	9	24	104	161	160	80	35	13	591
20:00	1	0	0	0	0	0	4	31	78	155	118	56	22	17	482
21:00	1	0	0	0	0	1	3	12	76	118	103	61	20	19	414
22:00	3	0	0	0	0	0	4	15	68	116	98	38	21	10	373
23:00	1	0	0	0	0	2	1	4	44	59	61	24	12	16	224
Total	150	2	2	10	10	38	232	637	2391	4811	5017	2611	880	476	17267

Daily

15th Percentile :	53 MPH
50th Percentile :	60 MPH
85th Percentile :	66 MPH
95th Percentile :	70 MPH

Statistics

Mean Speed(Average) :	60 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	9828
Percent in Pace :	56.9%
Number of Vehicles > 55 MPH :	13795
Percent of Vehicles > 55 MPH :	79.9%

Counts Unlimited, Inc.

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Corona, CA 92878
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City of Palm Springs
Indian Canyon Drive
B/ Palm Springs Road - Sunrise Parkway
72 Hour Directional Speed Survey
Northbound, Southbound

PLS001S
Site Code: 122-23105

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
03/09/23	1	1	0	0	0	1	1	4	19	35	30	19	7	6	124
01:00	0	0	0	0	0	0	1	5	13	12	28	11	3	1	74
02:00	0	0	0	0	0	0	1	9	17	22	17	8	5	2	81
03:00	0	0	0	0	0	0	2	8	23	18	15	9	3	6	84
04:00	0	0	0	0	0	0	2	5	16	26	24	18	16	12	119
05:00	2	0	0	0	0	0	3	10	46	66	62	47	26	9	271
06:00	6	0	1	0	0	0	8	26	83	175	224	122	70	24	739
07:00	30	0	2	0	0	3	11	38	126	393	443	263	81	51	1441
08:00	14	1	0	0	0	6	17	44	179	374	349	200	73	36	1293
09:00	11	1	2	0	1	9	17	62	186	350	300	119	55	22	1135
10:00	14	2	0	0	1	2	19	33	146	279	297	149	48	21	1011
11:00	10	1	0	0	0	4	16	57	163	315	296	162	51	30	1105
12 PM	11	0	0	0	1	3	9	52	147	319	339	197	41	17	1136
13:00	11	0	0	0	0	2	12	38	192	322	332	191	63	22	1185
14:00	16	0	0	0	1	1	7	37	135	312	378	228	85	31	1231
15:00	12	0	0	0	0	2	7	31	174	413	481	251	97	53	1521
16:00	22	3	0	0	2	4	8	46	209	442	428	239	89	39	1531
17:00	19	0	0	0	0	1	0	12	79	291	481	310	142	92	1427
18:00	6	0	0	0	0	0	5	22	77	219	261	209	95	51	945
19:00	3	0	0	0	0	2	4	9	53	167	209	136	81	54	718
20:00	3	0	0	0	0	0	2	8	60	149	170	125	52	32	601
21:00	0	0	0	0	0	1	2	9	43	138	170	135	73	53	624
22:00	2	0	0	0	0	0	2	8	34	108	145	131	74	54	558
23:00	1	0	0	0	0	0	0	5	20	60	89	64	42	24	305
Total	194	9	5	0	6	41	156	578	2240	5005	5568	3343	1372	742	19259

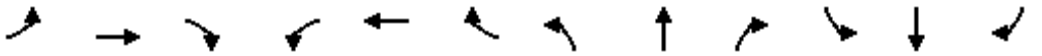
Daily

15th Percentile :	53 MPH
50th Percentile :	60 MPH
85th Percentile :	67 MPH
95th Percentile :	71 MPH

Statistics

Mean Speed(Average) :	61 MPH
10 MPH Pace Speed :	56-65 MPH
Number in Pace :	10573
Percent in Pace :	54.9%
Number of Vehicles > 55 MPH :	16030
Percent of Vehicles > 55 MPH :	83.2%

Appendix C: Existing Year Synchro Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	2	0	26	3	458	6	21	1046	5
Future Volume (vph)	2	0	1	2	0	26	3	458	6	21	1046	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		50	0		50	120		0	0		100
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.996				0.850
Flt Protected	0.950			0.950			0.950				0.999	
Satd. Flow (prot)	1787	0	1599	902	0	808	1357	1764	0	0	1776	1346
Flt Permitted	0.950			0.950			0.950				0.999	
Satd. Flow (perm)	1787	0	1599	902	0	808	1357	1764	0	0	1776	1346
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.38	0.95	0.50	0.75	0.85	0.42
Heavy Vehicles (%)	1%	1%	1%	100%	1%	100%	33%	5%	100%	90%	5%	20%
Adj. Flow (vph)	4	0	4	4	0	52	8	482	12	28	1231	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	0	4	4	0	52	8	494	0	0	1259	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 81.9%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	1	2	0	26	3	458	6	21	1046	5
Future Vol, veh/h	2	0	1	2	0	26	3	458	6	21	1046	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	50	0	-	50	120	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	92	25	50	92	50	38	95	50	75	85	42
Heavy Vehicles, %	1	1	1	100	1	100	33	5	100	90	5	20
Mvmt Flow	4	0	4	4	0	52	8	482	12	28	1231	12

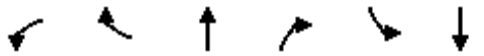
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1817	-	1231	1799	-	488	1243	0	0	494	0	0
Stage 1	1287	-	-	504	-	-	-	-	-	-	-	-
Stage 2	530	-	-	1295	-	-	-	-	-	-	-	-
Critical Hdwy	7.11	-	6.21	8.1	-	7.2	4.43	-	-	5	-	-
Critical Hdwy Stg 1	6.11	-	-	7.1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	-	-	7.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.309	4.4	-	4.2	2.497	-	-	3.01	-	-
Pot Cap-1 Maneuver	61	0	217	35	0	424	466	-	-	735	-	-
Stage 1	203	0	-	406	0	-	-	-	-	-	-	-
Stage 2	534	0	-	127	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	48	-	217	31	-	424	466	-	-	735	-	-
Mov Cap-2 Maneuver	48	-	-	31	-	-	-	-	-	-	-	-
Stage 1	200	-	-	399	-	-	-	-	-	-	-	-
Stage 2	460	-	-	109	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	54.3	23.5	0.2	0.2
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	466	-	-	48	217	31	424	735	-	-
HCM Lane V/C Ratio	0.017	-	-	0.083	0.018	0.129	0.123	0.038	-	-
HCM Control Delay (s)	12.9	-	-	86.7	21.9	137.6	14.7	10.1	0	-
HCM Lane LOS	B	-	-	F	C	F	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.4	0.4	0.1	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	6	461	14	11	1038
Future Volume (vph)	2	6	461	14	11	1038
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1380	3395	0	1656	3505
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1380	3395	0	1656	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		12	7			
Link Speed (mph)	25		55			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	33.7		8.5			16.3
Peak Hour Factor	0.50	0.50	0.93	0.50	0.69	0.88
Heavy Vehicles (%)	1%	17%	5%	14%	9%	3%
Adj. Flow (vph)	4	12	496	28	16	1180
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	12	524	0	16	1180
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6

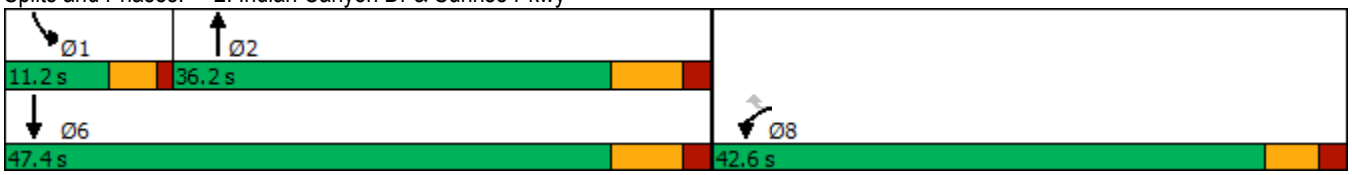


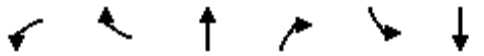
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.2	7.2	34.0		7.2	35.7
Actuated g/C Ratio	0.19	0.19	0.88		0.19	0.92
v/c Ratio	0.01	0.05	0.18		0.05	0.36
Control Delay	16.5	10.8	3.6		16.7	2.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	16.5	10.8	3.6		16.7	2.1
LOS	B	B	A		B	A
Approach Delay	12.3		3.6			2.3
Approach LOS	B		A			A
90th %ile Green (s)	7.0	7.0	20.3		7.0	31.5
90th %ile Term Code	Min	Min	Dwell		Max	Dwell
70th %ile Green (s)	0.0	0.0	31.5		0.0	31.5
70th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
50th %ile Green (s)	0.0	0.0	29.7		0.0	29.7
50th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
30th %ile Green (s)	0.0	0.0	28.0		0.0	28.0
30th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
10th %ile Green (s)	0.0	0.0	26.0		0.0	26.0
10th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
Stops (vph)	4	5	98		12	158
Fuel Used(gal)	0	0	4		1	60
CO Emissions (g/hr)	3	7	296		60	4189
NOx Emissions (g/hr)	1	1	58		12	815
VOC Emissions (g/hr)	1	2	69		14	971
Dilemma Vehicles (#)	0	0	14		0	27
Queue Length 50th (ft)	1	0	0		3	0
Queue Length 95th (ft)	4	5	86		13	122
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1677	1296	2933		306	3363

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.00	0.01	0.18		0.05	0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 38.7			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 2.8		Intersection LOS: A	
Intersection Capacity Utilization 44.9%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 50.9			
70th %ile Actuated Cycle: 38.3			
50th %ile Actuated Cycle: 36.5			
30th %ile Actuated Cycle: 34.8			
10th %ile Actuated Cycle: 32.8			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy





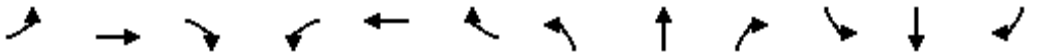
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	6	461	14	11	1038
Future Volume (veh/h)	2	6	461	14	11	1038
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1648	1826	1693	1767	1856
Adj Flow Rate, veh/h	4	12	496	28	16	1180
Peak Hour Factor	0.50	0.50	0.93	0.50	0.69	0.88
Percent Heavy Veh, %	1	17	5	14	9	3
Cap, veh/h	52	41	1346	76	49	2004
Arrive On Green	0.03	0.03	0.40	0.40	0.03	0.57
Sat Flow, veh/h	1795	1397	3430	188	1682	3618
Grp Volume(v), veh/h	4	12	257	267	16	1180
Grp Sat Flow(s),veh/h/ln	1795	1397	1735	1792	1682	1763
Q Serve(g_s), s	0.1	0.3	3.2	3.2	0.3	6.7
Cycle Q Clear(g_c), s	0.1	0.3	3.2	3.2	0.3	6.7
Prop In Lane	1.00	1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	52	41	699	722	49	2004
V/C Ratio(X)	0.08	0.30	0.37	0.37	0.33	0.59
Avail Cap(c_a), veh/h	2156	1677	1655	1710	382	4646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	14.6	6.4	6.4	14.7	4.3
Incr Delay (d2), s/veh	0.6	4.0	0.3	0.3	3.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.1	0.4	0.4	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.2	18.6	6.8	6.8	18.5	4.6
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	16		524			1196
Approach Delay, s/veh	17.8		6.8			4.8
Approach LOS	B		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.1	19.2			24.3	6.5
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	2.3	5.2			8.7	2.3
Green Ext Time (p_c), s	0.0	2.6			8.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	0	3	0	0	6	3	938	1	0	511	4
Future Volume (vph)	6	0	3	0	0	6	3	938	1	0	511	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		50	0		50	120		0	0		100
Storage Lanes	1		1	1		1	1		0	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt			0.850			0.850		0.999				0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1787	0	1599	1881	0	1599	1787	1825	0	0	1863	1599
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1787	0	1599	1881	0	1599	1787	1825	0	0	1863	1599
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.75	0.96	0.25	0.92	0.90	0.33
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	4%	1%	1%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	0	8	0	0	12	4	977	4	0	568	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	0	8	0	0	12	4	981	0	0	568	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	3	0	0	6	3	938	1	0	511	4
Future Vol, veh/h	6	0	3	0	0	6	3	938	1	0	511	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	50	0	-	50	120	-	-	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	92	38	92	92	50	75	96	25	92	90	33
Heavy Vehicles, %	1	2	1	1	1	1	1	4	1	1	2	1
Mvmt Flow	16	0	8	0	0	12	4	977	4	0	568	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1561	-	568	1565	-	979	580	0	0	981	0	0
Stage 1	568	-	-	987	-	-	-	-	-	-	-	-
Stage 2	993	-	-	578	-	-	-	-	-	-	-	-
Critical Hdwy	7.11	-	6.21	7.11	-	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	-	-	6.11	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	-	-	6.11	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	-	3.309	3.509	-	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	92	0	524	91	0	305	999	-	-	708	-	-
Stage 1	509	0	-	299	0	-	-	-	-	-	-	-
Stage 2	297	0	-	503	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	88	-	524	89	-	305	999	-	-	708	-	-
Mov Cap-2 Maneuver	88	-	-	89	-	-	-	-	-	-	-	-
Stage 1	507	-	-	298	-	-	-	-	-	-	-	-
Stage 2	284	-	-	495	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.4	17.3	0	0
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	999	-	-	88	524	-	305	708	-	-
HCM Lane V/C Ratio	0.004	-	-	0.179	0.015	-	0.039	-	-	-
HCM Control Delay (s)	8.6	-	-	54.6	12	0	17.3	0	-	-
HCM Lane LOS	A	-	-	F	B	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0	-	0.1	0	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	7	12	930	9	6	508
Future Volume (vph)	7	12	930	9	6	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.998			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1292	3498	0	1787	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1292	3498	0	1787	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		24	1			
Link Speed (mph)	30		30			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	28.1		15.6			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.58	0.50	0.94	0.75	0.38	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	25%	3%	2%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	12	24	989	12	16	577
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	24	1001	0	16	577
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

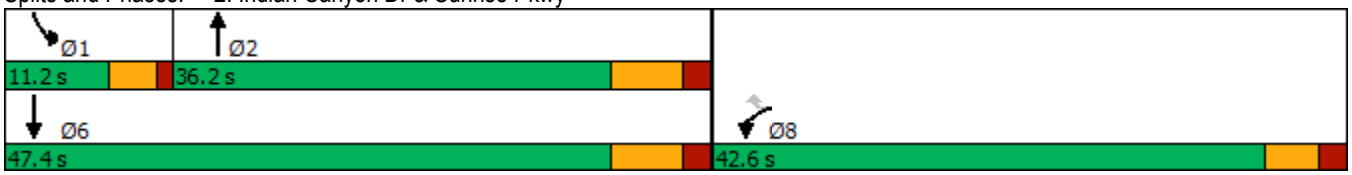


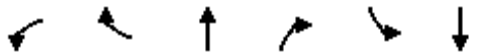
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.5	7.5	37.1		7.5	38.7
Actuated g/C Ratio	0.17	0.17	0.83		0.17	0.87
v/c Ratio	0.04	0.10	0.35		0.05	0.19
Control Delay	22.0	12.4	4.8		22.2	2.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	22.0	12.4	4.8		22.2	2.3
LOS	C	B	A		C	A
Approach Delay	15.6		4.8			2.9
Approach LOS	B		A			A
90th %ile Green (s)	7.3	7.3	29.4		7.0	40.6
90th %ile Term Code	Gap	Gap	Max		Max	Hold
70th %ile Green (s)	7.0	7.0	37.6		0.0	37.6
70th %ile Term Code	Min	Min	Dwell		Skip	Dwell
50th %ile Green (s)	0.0	0.0	30.6		0.0	30.6
50th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
30th %ile Green (s)	0.0	0.0	29.0		0.0	29.0
30th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
10th %ile Green (s)	0.0	0.0	26.2		0.0	26.2
10th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
Stops (vph)	8	6	274		7	94
Fuel Used(gal)	0	0	7		0	30
CO Emissions (g/hr)	10	13	521		34	2074
NOx Emissions (g/hr)	2	2	101		7	403
VOC Emissions (g/hr)	2	3	121		8	481
Dilemma Vehicles (#)	0	0	0		0	21
Queue Length 50th (ft)	2	0	0		3	0
Queue Length 95th (ft)	11	6	179		8	50
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1519	1102	2700		298	3104

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.01	0.02	0.37		0.05	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 44.7			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 4.4		Intersection LOS: A	
Intersection Capacity Utilization 42.2%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60.3			
70th %ile Actuated Cycle: 57			
50th %ile Actuated Cycle: 37.4			
30th %ile Actuated Cycle: 35.8			
10th %ile Actuated Cycle: 33			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	12	930	9	6	508
Future Volume (veh/h)	7	12	930	9	6	508
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1530	1856	1870	1885	1870
Adj Flow Rate, veh/h	12	24	989	12	16	577
Peak Hour Factor	0.58	0.50	0.94	0.75	0.38	0.88
Percent Heavy Veh, %	1	25	3	2	1	2
Cap, veh/h	106	76	1608	20	52	2119
Arrive On Green	0.06	0.06	0.45	0.45	0.03	0.60
Sat Flow, veh/h	1795	1296	3660	43	1795	3647
Grp Volume(v), veh/h	12	24	489	512	16	577
Grp Sat Flow(s),veh/h/ln	1795	1296	1763	1848	1795	1777
Q Serve(g_s), s	0.2	0.6	7.6	7.6	0.3	2.8
Cycle Q Clear(g_c), s	0.2	0.6	7.6	7.6	0.3	2.8
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	106	76	795	833	52	2119
V/C Ratio(X)	0.11	0.31	0.62	0.62	0.31	0.27
Avail Cap(c_a), veh/h	1847	1334	1441	1511	350	4012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	16.2	7.5	7.5	17.1	3.5
Incr Delay (d2), s/veh	0.5	2.3	0.8	0.7	3.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	1.9	2.0	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.5	18.6	8.3	8.2	20.5	3.6
LnGrp LOS	B	B	A	A	C	A
Approach Vol, veh/h	36		1001			593
Approach Delay, s/veh	17.9		8.3			4.0
Approach LOS	B		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.2	23.0			28.2	7.7
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	2.3	9.6			4.8	2.6
Green Ext Time (p_c), s	0.0	6.6			3.6	0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.9
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix D: Existing Year HCS Worksheets

HCS Two-Lane Highway Report

Project Information

Analyst	AT	Date	4/20/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Existing AM - Seg 1 NB
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2300
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	492	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.95	Total Trucks, %	6.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.59019	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35036	PF Power Coefficient (p)	0.75109
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2300	-	-	56.9

Vehicle Results

Average Speed, mi/h	56.9	Percent Followers, %	54.7
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	4.7
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	51	0.05	4.7	C

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HCS Two-Lane Highway Report

Project Information

Analyst	AT	Date	4/20/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Existing AM - Seg 1 SB
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2300
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	1192	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.70

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.59019	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35073	PF Power Coefficient (p)	0.75066
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	17.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2300	-	-	55.2

Vehicle Results

Average Speed, mi/h	55.2	Percent Followers, %	78.6
Segment Travel Time, minutes	0.47	Follower Density (FD), followers/mi/ln	17.0
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	114	0.16	17.0	E

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HCS Multilane Highway Report

Project Information

Analyst	AT	Date	4/20/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Existing AM - Seg 2
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	467	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	260
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	4.3
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data			
Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity			
Volume (V) veh/h	1049	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	614
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.28

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	10.2
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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HCS Two-Lane Highway Report

Project Information

Analyst	AT	Date	4/20/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Existing PM - Seg 1 NB
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2300
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	981	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.96	Total Trucks, %	4.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.58

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.59019	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35061	PF Power Coefficient (p)	0.75081
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	13.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2300	-	-	55.6

Vehicle Results

Average Speed, mi/h	55.6	Percent Followers, %	73.6
Segment Travel Time, minutes	0.47	Follower Density (FD), followers/mi/ln	13.0
Vehicle LOS	E		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	103	0.13	13.0	E

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HCS Two-Lane Highway Report

Project Information

Analyst	AT	Date	4/20/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Existing PM - Seg 1 SB
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2300
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	584	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.59019	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.35085	PF Power Coefficient (p)	0.75052
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2300	-	-	56.6

Vehicle Results

Average Speed, mi/h	56.6	Percent Followers, %	59.4
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	6.1
Vehicle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	56	0.06	6.1	C

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HCS Multilane Highway Report

Project Information

Analyst	AT	Date	4/20/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Existing PM - Seg 2
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	942	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	510
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.23

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	8.5
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data			
Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

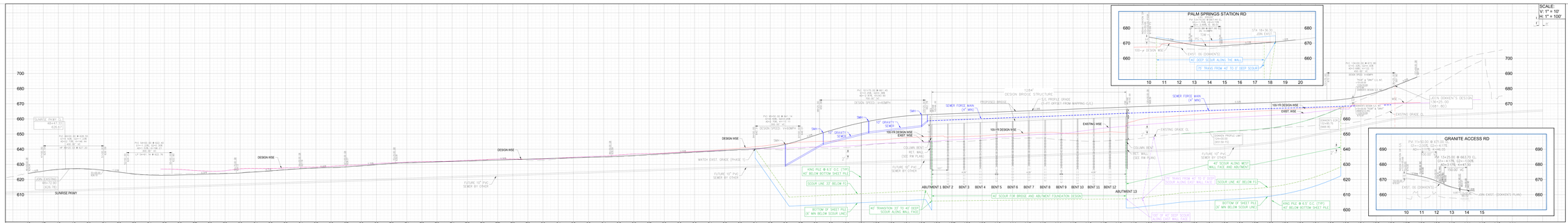
Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity			
Volume (V) veh/h	514	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	298
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	5.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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Appendix E: Project GAD



SCALE:
V: 1" = 10'
H: 1" = 100'

LEGEND:

- INDICATES EXISTING RIGHT-OF-WAY
- INDICATES EXISTING CENTERLINE
- INDICATES EXISTING EDGE OF PAVEMENT
- INDICATES EXISTING CONCRETE
- INDICATES EXISTING EDGE OF VEGETATION
- INDICATES EXISTING UTILITY POLE
- INDICATES EXISTING PHANTOM COMMUNICATION LINE
- INDICATES EXISTING OVERHEAD ELECTRICAL LINE
- INDICATES EXISTING GAS LINE
- INDICATES EXISTING WATER LINE
- INDICATES EXISTING SPECTRUM COMMUNICATION LINE
- INDICATES EXISTING SEWER LINE
- INDICATES EXISTING COMMUNICATION LINE
- INDICATES PROPOSED WHITE STRIPING
- INDICATES PROPOSED YELLOW STRIPING
- INDICATES PROPOSED EDGE OF PAVEMENT
- INDICATES PROPOSED CONCRETE
- INDICATES PROPOSED SECURITY (CAMERA) SYSTEM (WSS)
- INDICATES PROPOSED CONCRETE BARRIER
- INDICATES PROPOSED RET. WALL/SOUR COUNTERMEASURE
- INDICATES PROPOSED RETAINING WALL
- INDICATES PROPOSED ROADWAY IMPROVEMENTS
- INDICATES PROPOSED SEWER FORCE MAIN (6" MIN.)
- INDICATES PCC SIDEWALK / PCC SLAB
- INDICATES PROPOSED RET. WALL/SOUR COUNTERMEASURE
- INDICATES PROPOSED AC PAVEMENT
- INDICATES PROPOSED RET. WALL/SOUR COUNTERMEASURE
- INDICATES SEWER FORCE MAIN (6" MIN.)
- INDICATES CLEAR RECOVERY ZONE (NO OBSTRUCTIONS)

GENERAL NOTES:

1. DUE TO PROJECT CONSTRAINTS, THE DESIGN WILL REQUIRE DESIGN CRITERIA VARIANCE OR EXCEPTION THAT WILL BE DEFINED DURING PLAN PREPARATION.
2. SURVEY/TOPOGRAPHIC DATA IS BASED ON SURVEY CONDUCTED IN 2022. ADDITIONAL SURVEY OR UPDATE TO THE SURVEY WILL BE REQUIRED DURING THE PLAN PREPARATION PHASE. THE SURVEY SHALL INCLUDE THE PALM SPRINGS STATION RD ALIGNMENT NORTH OF I-10 & GRANITE ACCESS RD ALIGNMENT TO ROTT WEIR ON THE NORTH END OF THE PROJECT AND THE NEW CLUB WEIR CONSTRUCTED AT GRANITE CROSSING DRIVE.
3. PAVEMENT SECTIONS SHOWN ARE PRELIMINARY FOR QUANTITY PURPOSES ONLY AND ARE SUBJECT TO CHANGE DURING FINAL DESIGN.
4. RELOCATED EXISTING UTILITIES SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE AND UPDATE AS FINAL DESIGN CONTINUES. ADDITIONAL

ABBREVIATION LEGEND:

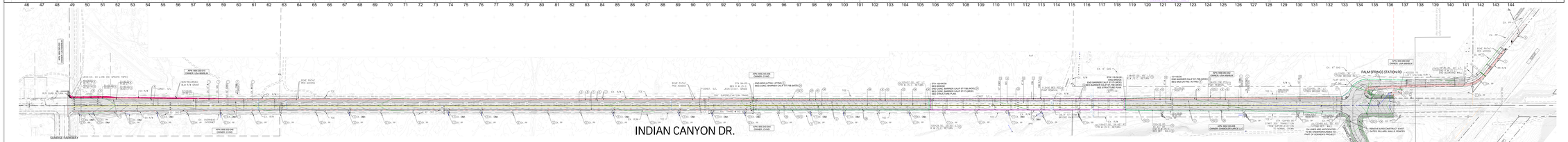
ABUT.	ABUTMENT
BRG.	BEARING & ANCHOR
C.L.	CENTERLINE
R.W.	RETAINING WALL/SOUR COUNTERMEASURE
S.S.	STAINLESS STEEL

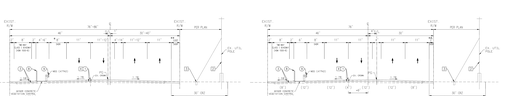
DEMOLITION NOTES

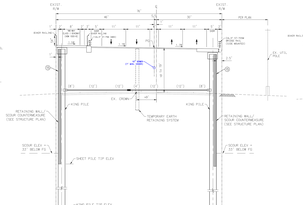
1. PROTECT IN PLACE.
2. REMOVE EXIST. UTILITY POLE BY OTHERS. (SEE).
3. REMOVE GUY WIRE & ANCHOR BY OTHERS. (SEE).
4. REMOVE EXIST. PAVEMENT SECTION.
5. REMOVE EXIST. SIDEWALK.
6. REMOVE EXIST. FENCE.
7. REMOVE EXIST. WALL.
8. REMOVE EXISTING GATE.
9. REMOVE/RELOCATE EXIST. GAS LINE BY OTHERS. CONTRACTOR TO COORDINATE.
10. REMOVE/RELOCATE EXIST. WATER LINE.
11. REMOVE/RELOCATE EXIST. COMMUNICATION LINE BY OTHERS. CONTRACTOR TO COORDINATE.
12. REMOVE AND DISPOSE EXIST. COMMUNICATION VAULT. CONTRACTOR TO COORDINATE.
13. REMOVE/RELOCATE EXIST. 10" PVC SEWER.

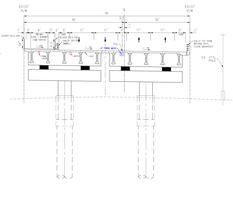
CONSTRUCTION NOTES

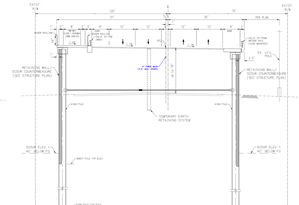
1. CONSTRUCT 7" A.C. / 12" AB PAVEMENT
2. CONSTRUCT 17" (AVG) 4" CLASS 13 AGGREGATE BASE.
3. CONSTRUCT 4" AC / 4" AB BIOSWALE.
4. CONSTRUCT 6" CONCRETE CURB & GUTTER PER CALTRANS STD. PLAN A77A4.
5. CONSTRUCT 6" THICK PCC SIDEWALK PER CPS STD. NO. 210.
6. CONSTRUCT TYPE A1 CURB PER CPS STD. NO. 200. (6" CURB ONLY)
7. CONSTRUCT TYPE A4 CURB & GUTTER PER CPS STD. NO. 200. (8" (MIN.) 24" GUTTER)
8. CONSTRUCT 24" HIGH BARRIER RAILING.
9. INSTALL MOD. TERMINAL SYSTEM END TREATMENTS PER CALTRANS STD. PLANS A77J1, A77J4.
10. INSTALL MOD. TERMINAL SYSTEM END TREATMENTS PER CALTRANS STD. PLANS A77J1, A77J4.
11. INSTALL SLOPE MOUNTED BRIDGE RAIL PER CALTRANS STD. PLAN 57-T76A. SEE STRUCTURE PLANS.
12. INSTALL CALTRANS APPROVED TEST LEVEL 3 CRASH CUSHION WITH PCC FOOTING.
13. CONSTRUCT RETAINING WALL. SEE STRUCTURE PLANS.
14. CONSTRUCT RETAINING WALL/SOUR COUNTERMEASURE. SEE STRUCTURE PLANS.
15. CONSTRUCT RETAINING WALL. SEE STRUCTURE PLANS.
16. CONSTRUCT SLOUGHED WALL. PER PLAN DETAIL.
17. CONSTRUCT CATCH BASIN NO. - PER RD SMCO STD. (RD NO. OR DI NO. PER PLAN)
18. CONSTRUCT 18" RCP STORM DRAIN PIPE. SEE PLAN AND PROFILE.
19. CONSTRUCT REINFORCED CONCRETE COLVERT BOX (4' X 8' 2" H).
20. CONSTRUCT 24-IN RCP.
21. CONSTRUCT 24" DIA. HEADWALL FOR 57-T9B (MOD).
22. CONSTRUCT 18P. INLET PER CALTRANS STD PLAN A73.
23. CONSTRUCT 8'-0N PCC SLAB. SEE STRUCTURE PLANS.
24. CONSTRUCT SUMP LIFT STATION.
25. CONSTRUCT 10" GRAVITY SEWER DIVERTED INTO LIFT STATION.
26. CONSTRUCT 6" SEWER FORCE MAIN.
27. CONSTRUCT 10-IN PVC SEWER.
28. CONSTRUCT SEWER MANHOLE.

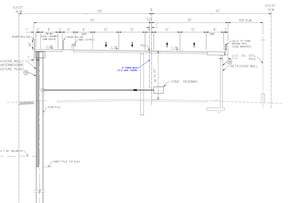


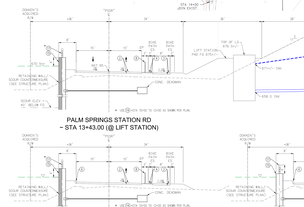


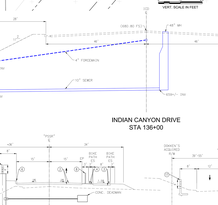
















INDIAN CANYON DRIVE
GEOMETRIC APPROVAL DRAWING
JANUARY 11, 2026

Michael Baker INTERNATIONAL
Riverside Office | 3800 Concours, Ste 150, Ontario, CA 91764
Phone: (562) 908-6140 Author: MANUFORM, ITAM

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
73-710 Fred Waring Drive
Palm Desert, CA 92260

C:\Users\jmanuform\Documents\ARCHIVED_SHEETS\INDIAN_CANYON_DRIVE\INDIAN_CANYON_DRIVE_GEOMETRIC_APPROVAL_DRAWING_ITAM_PHASE_1.DWG 1/15/2026 10:24 PM

Appendix F: Traffic Volume Development

Western Coachella Valley Flood and Blowsand Road Imp Proj

Volume Development

ITM

Existing Year: 2023
Ambient Growth (Comp.): 1.0%
Years till Opening: 4
Opening Year: 2027

Existing Year: 2023
Ambient Growth (Comp.): 1.0%
Years till Design: 24
Design Year: 2047

Intersection / Movement		Counts 2023		Balance		Existing 2023		Growth to Opening Year		Cumulative Projects (Opening)		Cumulative Projects (Design)		Opening Year 2027 (unbalanced)		Opening Year Balance		Opening Year 2027		Growth to Design Year		Design Year 2047 (unbalanced)		Design Year Balance		Design Year 2047	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1) Palm Springs Station Rd/Granite Access Drwy & N Indian Canyon Dr	NBL	3	3			3	3	0	0	0	0	0	0	3	3			3	3	1	1	4	4			4	4
	NBT	458	938			458	938	19	38	70	66	175	137	547	1,042		-1	547	1,041	124	253	757	1,328			757	1,328
	NBR	6	1			6	1	0	0	0	0	0	0	6	1			6	1	2	0	8	1			8	1
	SBL	21	0			21	0	1	0	0	0	0	0	22	0			22	0	6	0	27	0			27	0
	SBT	1,046	496		15	1,046	511	42	21	32	89	67	206	1,120	621			1,120	621	282	138	1,395	855			1,395	855
	SBR	5	4			5	4	0	0	0	0	0	0	5	4			5	4	1	1	6	5			6	5
	EBL	2	6			2	6	0	0	0	0	0	0	2	6			2	6	1	2	3	8			3	8
	EBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0			0	0
	EBR	1	3			1	3	0	0	0	0	0	0	1	3			1	3	0	1	1	4			1	4
	WBL	2	0			2	0	0	0	0	0	0	0	2	0			2	0	1	0	3	0			3	0
	WBT	0	0			0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0			0	0
	WBR	26	6			26	6	1	0	0	0	0	0	27	6			27	6	7	2	33	8			33	8
	Total	1,570	1,457	0	15	1,570	1,472	63	59	102	155	242	343	1,735	1,686	0	-1	1,735	1,685	425	398	2,237	2,213	0	0	2,237	2,213
	Time	7:15AM	3:30 PM	--	--	7:15AM	3:30 PM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2) Sunrise Pkwy & N Indian Canyon Dr	NBL									0	0	0	0														
	NBT	459	901	2	29	461	930	19	38	40	45	75	69	520	1,013			520	1,013	124	251	660	1,250	1		661	1,250
	NBR	14	9			14	9	1	0	0	0	0	0	15	9			15	9	4	2	18	11			18	11
	SBL	11	6			11	6	0	0	15	50	50	167	26	56			26	56	3	2	64	175			64	175
	SBT	1,010	508	28		1,038	508	42	21	17	39	17	39	1,097	568			1,097	568	280	137	1,335	684			1,335	684
	SBR									0	0	0	0														
	EBL									0	0	0	0														
	EBT									0	0	0	0														
	EBR									0	0	0	0														
	WBL	2	7			2	7	0	0	15	10	50	34	17	17			17	17	1	2	53	43			53	43
	WBT									0	0	0	0														
	WBR	6	12			6	12	0	0	30	20	100	68	36	32			36	32	2	3	108	83			108	83
	Total	1,502	1,443	30	29	1,532	1,472	62	59	117	164	292	377	1711	1695	0	0	1711	1695	413	397	2238	2246	1	0	2239	2246
	Time	7:15AM	3:00 PM	--	--	7:15AM	3:00 PM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Western Coachella Valley Flood and Blowsand Road Imp Proj

Volume Development

ADT

Existing Year:	2023
Ambient Growth:	1.0%
Years till Opening:	4
Opening Year:	2027

Existing Year:	2023
Ambient Growth:	1.0%
Years till Design:	24
Design Year:	2047

Intersection	Counts 2023	Growth	Cumulative Projects (Opening)	Cumulative Projects (Design)	Opening Year 2027	Growth	Design Year 2047
Indian Canyon Dr between Palm Springs Station Rd and Sunrise Pkwy	18,000	731	1,730	3,700	20,500	4,855	26,600

Cumulative Projects List

#	Cumulative Project	ITE Code	Land Use	Intensity	ADT	AM Peak Hour			PM Peak Hour		
						Total	Inbound	Outbound	Total	Inbound	Outbound
1	Miralon Dev	210	SFR Detached	752.00 DU	6,457	467	117	350	662	417	245
		215	SFR Attached	398.00 DU	2,982	201	50	151	235	139	96
		Total			9,439	668	167	501	897	556	341
2	Alure Dev	From Study	SFR Detached	40.00 DU	450	40	10	30	47	30	17
3	Monarch Apartments	From Study	MFR (Low Rise)	60.00 DU	439	28	7	21	34	21	13
4	Garnet Cultivation	See Trip Gen	Cultivation	4.73 ac	92	2	1	1	2	1	1
			Dispensary	3.65 tsf	922	38	21	17	80	40	40
		Total			1,014	40	22	18	82	41	41
Total Cumulative Project Trips					**11,342**	**776**	**206**	**570**	**1,060**	**648**	**412**

Notes:

1) Cumualtive Project #1 (Miralon Development) sourced from ITE Trip Generation Manual 11th Edition

Cumulative Projects List

#	Cumulative Project	ITE Code	Land Use	Intensity	ADT	AM Peak Hour			PM Peak Hour		
						Total	Inbound	Outbound	Total	Inbound	Outbound
1	Miralon	See Trip Gen			9,439	668	167	501	897	556	341
2	Allure	See Trip Gen			450	40	10	30	47	30	17
3	Monarch Apartments	See Trip Gen			439	28	7	21	34	21	13
4	Garnet Cultivation	See Trip Gen			1,014	40	22	18	82	41	41
Total Cumulative Project Trips					**11,342**	**776**	**206**	**570**	**1,060**	**648**	**412**

Notes:

1) Sourced from ITE Trip Generation Manual 11th Edition

Cumulative Projects Peak Hour Trip Assignment

30%

Int. 1	1 Opening				1 Design				2				3				4				Opening Total		Design Total	
	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	AM	PM	AM	PM
NBL			0	0			0	0											0	0	0	0	0	0
NBT		30%	45	31		30%	150	102			5	3			5	3	70%		15	29	70	66	175	137
NBR			0	0			0	0											0	0	0	0	0	0
SBL			0	0			0	0											0	0	0	0	0	0
SBT	30%		15	50	30%		50	167			2	5			2	5		70%	13	29	32	89	67	206
SBR			0	0			0	0											0	0	0	0	0	0
EBL			0	0			0	0											0	0	0	0	0	0
EBT			0	0			0	0											0	0	0	0	0	0
EBR			0	0			0	0											0	0	0	0	0	0
WBL			0	0			0	0											0	0	0	0	0	0
WBT			0	0			0	0											0	0	0	0	0	0
WBR			0	0			0	0											0	0	0	0	0	0

Int. 2	1 Opening				1 Design				2				3				4				Opening Total		Design Total	
	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	In Dist %	Out Dist %	AM. Vol.	PM Vol.	AM	PM	AM	PM
NBL			0	0			0	0											0	0	0	0	0	0
NBT		10%	15	10		10%	50	34			5	3			5	3	70%		15	29	40	45	75	69
NBR			0	0			0	0											0	0	0	0	0	0
SBL	30%		15	50	30%		50	167											0	0	15	50	50	167
SBT			0	0			0	0			2	5			2	5		70%	13	29	17	39	17	39
SBR			0	0			0	0											0	0	0	0	0	0
EBL			0	0			0	0											0	0	0	0	0	0
EBT			0	0			0	0											0	0	0	0	0	0
EBR			0	0			0	0											0	0	0	0	0	0
WBL		10%	15	10		10%	50	34											0	0	15	10	50	34
WBT			0	0			0	0											0	0	0	0	0	0
WBR		20%	30	20		20%	100	68											0	0	30	20	100	68

Note: Opening Year includes only 30% of Miralon Development volumes.

Appendix G: Opening Year 2027 No Build Synchro Worksheets

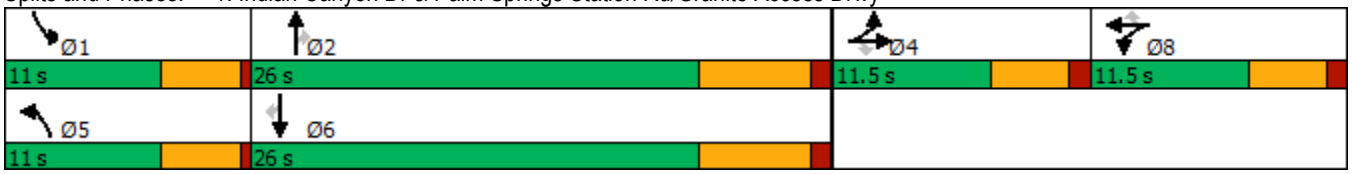
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	2	0	27	3	547	6	22	1120	5
Future Volume (vph)	2	0	1	2	0	27	3	547	6	22	1120	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Flt Permitted		0.950			0.950		0.950			0.950		
Satd. Flow (perm)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			209			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.38	0.95	0.50	0.75	0.85	0.42
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	100%	1%	100%	33%	5%	100%	90%	5%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	4	0	4	4	0	54	8	576	12	29	1318	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	4	0	4	54	8	576	12	29	1318	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.2	7.2		7.2	7.2	7.2	31.8	31.8	7.2	31.8	31.8
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.16	0.70	0.70	0.16	0.70	0.70
v/c Ratio		0.01	0.01		0.03	0.18	0.04	0.24	0.02	0.19	0.55	0.01
Control Delay		19.5	0.0		20.0	1.3	19.7	7.3	0.0	22.9	12.0	0.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.5	0.0		20.0	1.3	19.7	7.3	0.0	22.9	12.0	0.0
LOS		B	A		B	A	B	A	A	C	B	A
Approach Delay		9.8			2.6			7.3			12.2	
Approach LOS		A			A			A			B	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
70th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	20.0	20.0	0.0	20.0	20.0
70th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Hold	Hold	Skip	Max	Max
50th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	30.1	30.1	0.0	30.1	30.1
50th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		4	0		4	0	4	230	0	22	470	0
Fuel Used(gal)		0	0		0	0	0	35	0	1	20	0
CO Emissions (g/hr)		2	0		2	6	17	2439	23	47	1400	3
NOx Emissions (g/hr)		0	0		0	1	3	475	4	9	272	1
VOC Emissions (g/hr)		0	0		0	1	4	565	5	11	325	1
Dilemma Vehicles (#)		0	0		0	0	0	40	0	0	75	0
Queue Length 50th (ft)		1	0		1	0	2	28	0	7	90	0
Queue Length 95th (ft)		9	0		9	0	6	128	0	26	#385	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50	110		
Base Capacity (vph)		283	429		143	303	214	2406	620	150	2406	996

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.01	0.01		0.03	0.18	0.04	0.24	0.02	0.19	0.55	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 45.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 37.5			
50th %ile Actuated Cycle: 47.6			
30th %ile Actuated Cycle: 41			
10th %ile Actuated Cycle: 41			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	36	520	15	26	1097
Future Volume (vph)	17	36	520	15	26	1097
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1380	3396	0	1656	3505
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1380	3396	0	1656	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		72	6			
Link Speed (mph)	25		55			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	33.7		8.5			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.50	0.50	0.93	0.50	0.69	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	17%	5%	14%	9%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	34	72	559	30	38	1247
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	72	589	0	38	1247
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

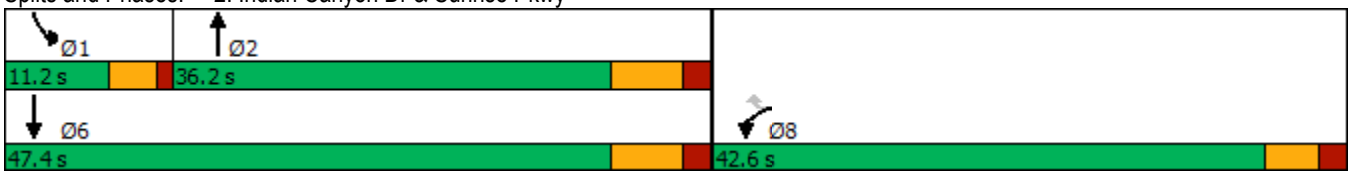


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.5	7.5	26.8		7.2	31.1
Actuated g/C Ratio	0.16	0.16	0.58		0.16	0.68
v/c Ratio	0.12	0.25	0.30		0.15	0.53
Control Delay	18.8	8.4	9.0		20.0	6.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	18.8	8.4	9.0		20.0	6.7
LOS	B	A	A		B	A
Approach Delay	11.8		9.0			7.1
Approach LOS	B		A			A
90th %ile Green (s)	8.5	8.5	19.4		7.0	30.6
90th %ile Term Code	Gap	Gap	Hold		Max	Gap
70th %ile Green (s)	7.1	7.1	14.5		7.0	25.7
70th %ile Term Code	Gap	Gap	Gap		Max	Hold
50th %ile Green (s)	7.0	7.0	27.2		0.0	27.2
50th %ile Term Code	Min	Min	Dwell		Skip	Dwell
30th %ile Green (s)	7.0	7.0	33.9		0.0	33.9
30th %ile Term Code	Min	Min	Dwell		Skip	Dwell
10th %ile Green (s)	0.0	0.0	26.3		0.0	26.3
10th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
Stops (vph)	16	11	290		25	547
Fuel Used(gal)	0	0	9		2	71
CO Emissions (g/hr)	21	34	607		139	4993
NOx Emissions (g/hr)	4	7	118		27	971
VOC Emissions (g/hr)	5	8	141		32	1157
Dilemma Vehicles (#)	0	0	45		0	90
Queue Length 50th (ft)	8	0	34		9	95
Queue Length 95th (ft)	15	6	104		24	147
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1438	1124	2295		259	3028

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.02	0.06	0.26		0.15	0.41

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 45.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 51.5			
70th %ile Actuated Cycle: 45.2			
50th %ile Actuated Cycle: 46.6			
30th %ile Actuated Cycle: 53.3			
10th %ile Actuated Cycle: 33.1			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	1	2	0	27	3	547	6	22	1120	5
Future Volume (veh/h)	2	0	1	2	0	27	3	547	6	22	1120	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	418	1885	418	1411	1826	418	566	1826	1604
Adj Flow Rate, veh/h	4	0	4	4	0	54	8	576	12	29	1318	12
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.38	0.95	0.50	0.75	0.85	0.42
Percent Heavy Veh, %	1	1	1	100	1	100	33	5	100	90	5	20
Cap, veh/h	27	0	24	146	0	29	20	1425	145	26	1539	603
Arrive On Green	0.01	0.00	0.01	0.08	0.00	0.08	0.01	0.41	0.41	0.05	0.44	0.44
Sat Flow, veh/h	1795	0	1598	1795	0	354	1344	3469	354	539	3469	1359
Grp Volume(v), veh/h	4	0	4	4	0	54	8	576	12	29	1318	12
Grp Sat Flow(s),veh/h/ln	1795	0	1598	1795	0	354	1344	1735	354	539	1735	1359
Q Serve(g_s), s	0.1	0.0	0.1	0.1	0.0	3.5	0.3	5.0	0.9	2.0	14.5	0.2
Cycle Q Clear(g_c), s	0.1	0.0	0.1	0.1	0.0	3.5	0.3	5.0	0.9	2.0	14.5	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	27	0	24	146	0	29	20	1425	145	26	1539	603
V/C Ratio(X)	0.15	0.00	0.17	0.03	0.00	1.87	0.40	0.40	0.08	1.13	0.86	0.02
Avail Cap(c_a), veh/h	294	0	262	294	0	58	220	1626	166	88	1626	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	20.8	18.0	0.0	19.6	20.8	8.9	7.7	20.3	10.7	6.7
Incr Delay (d2), s/veh	2.6	0.0	3.3	0.1	0.0	486.9	12.5	0.2	0.2	120.7	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	4.2	0.1	1.1	0.0	1.1	3.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	24.1	18.1	0.0	506.5	33.3	9.1	7.9	141.0	15.2	6.7
LnGrp LOS	C	A	C	B	A	F	C	A	A	F	B	A
Approach Vol, veh/h		8			58			596			1359	
Approach Delay, s/veh		23.7			472.8			9.4			17.8	
Approach LOS		C			F			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	23.5		5.1	4.6	24.9		8.0				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	4.0	7.0		2.1	2.3	16.5		5.5				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	2.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		28.4	
HCM 6th LOS		C	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	36	520	15	26	1097
Future Volume (veh/h)	17	36	520	15	26	1097
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1648	1826	1693	1767	1856
Adj Flow Rate, veh/h	34	72	559	30	38	1247
Peak Hour Factor	0.50	0.50	0.93	0.50	0.69	0.88
Percent Heavy Veh, %	1	17	5	14	9	3
Cap, veh/h	223	174	1256	67	103	1930
Arrive On Green	0.12	0.12	0.38	0.38	0.06	0.55
Sat Flow, veh/h	1795	1397	3440	179	1682	3618
Grp Volume(v), veh/h	34	72	289	300	38	1247
Grp Sat Flow(s),veh/h/ln	1795	1397	1735	1794	1682	1763
Q Serve(g_s), s	0.6	1.8	4.7	4.7	0.8	9.4
Cycle Q Clear(g_c), s	0.6	1.8	4.7	4.7	0.8	9.4
Prop In Lane	1.00	1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	223	174	651	673	103	1930
V/C Ratio(X)	0.15	0.41	0.44	0.45	0.37	0.65
Avail Cap(c_a), veh/h	1759	1368	1350	1396	312	3790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	15.3	8.8	8.9	17.0	6.0
Incr Delay (d2), s/veh	0.3	1.6	0.5	0.5	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	1.0	1.0	0.3	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.1	16.8	9.3	9.3	19.3	6.4
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	106		589			1285
Approach Delay, s/veh	16.3		9.3			6.7
Approach LOS	B		A			A

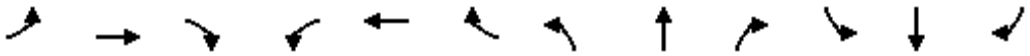
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.5	21.0			27.5	10.3
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	2.8	6.7			11.4	3.8
Green Ext Time (p_c), s	0.0	3.0			9.3	0.3

Intersection Summary	
HCM 6th Ctrl Delay	8.0
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	0	3	0	0	6	3	1041	1	0	621	4
Future Volume (vph)	6	0	3	0	0	6	3	1041	1	0	621	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Flt Permitted		0.950					0.950					
Satd. Flow (perm)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			421			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.75	0.96	0.25	0.92	0.90	0.33
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	4%	1%	1%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	0	8	0	0	12	4	1084	4	0	690	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	8	0	0	12	4	1084	4	0	690	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm			Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.3	7.3			7.3	7.3	37.0	37.0		35.5	35.5
Actuated g/C Ratio		0.18	0.18			0.18	0.18	0.90	0.90		0.87	0.87
v/c Ratio		0.05	0.02			0.02	0.01	0.35	0.00		0.22	0.01
Control Delay		19.3	0.0			0.0	19.3	3.4	0.0		5.3	0.0
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		19.3	0.0			0.0	19.3	3.4	0.0		5.3	0.0
LOS		B	A			A	B	A	A		A	A
Approach Delay		12.9						3.5			5.2	
Approach LOS		B						A			A	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	31.0	31.0	0.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold	Hold	Skip	Max	Max
70th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
70th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
50th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.4	30.4	0.0	30.4	30.4
50th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.9	28.9	0.0	28.9	28.9
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8	26.8	0.0	26.8	26.8
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		7	0			0	5	199	0		145	0
Fuel Used(gal)		0	0			0	0	61	0		8	0
CO Emissions (g/hr)		5	1			1	19	4274	4		567	2
NOx Emissions (g/hr)		1	0			0	4	832	1		110	0
VOC Emissions (g/hr)		1	0			0	4	991	1		131	0
Dilemma Vehicles (#)		0	0			0	0	20	0		14	0
Queue Length 50th (ft)		3	0			0	1	0	0		0	0
Queue Length 95th (ft)		20	0			0	7	186	0		155	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50			
Base Capacity (vph)		319	457			631	319	3135	1462		3067	1410

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0			0	0	0	0		0	0
Spillback Cap Reductn		0	0			0	0	0	0		0	0
Storage Cap Reductn		0	0			0	0	0	0		0	0
Reduced v/c Ratio		0.05	0.02			0.02	0.01	0.35	0.00		0.22	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 41			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 41			
50th %ile Actuated Cycle: 36.4			
30th %ile Actuated Cycle: 34.9			
10th %ile Actuated Cycle: 32.8			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	32	1013	9	56	568
Future Volume (vph)	17	32	1013	9	56	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.998			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1292	3498	0	1787	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1292	3498	0	1787	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		64	1			
Link Speed (mph)	30		30			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	28.1		15.6			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.58	0.50	0.94	0.75	0.38	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	25%	3%	2%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	29	64	1078	12	147	645
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	64	1090	0	147	645
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

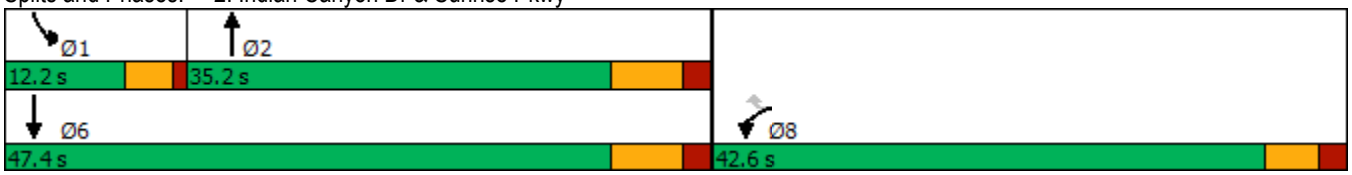


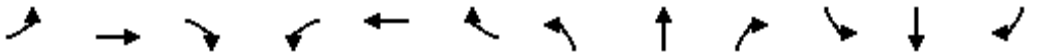
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	35.2		12.2	47.4
Total Split (%)	47.3%	47.3%	39.1%		13.6%	52.7%
Maximum Green (s)	37.0	37.0	28.4		8.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.3	7.3	30.3		8.0	44.0
Actuated g/C Ratio	0.12	0.12	0.51		0.13	0.74
v/c Ratio	0.13	0.30	0.61		0.61	0.25
Control Delay	25.2	11.6	13.3		38.1	3.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	25.2	11.6	13.3		38.1	3.9
LOS	C	B	B		D	A
Approach Delay	15.8		13.3			10.2
Approach LOS	B		B			B
90th %ile Green (s)	8.6	8.6	28.4		8.0	40.6
90th %ile Term Code	Gap	Gap	Max		Max	Hold
70th %ile Green (s)	7.0	7.0	28.4		8.0	40.6
70th %ile Term Code	Min	Min	Max		Max	Hold
50th %ile Green (s)	7.0	7.0	28.4		8.0	40.6
50th %ile Term Code	Min	Min	Max		Max	Hold
30th %ile Green (s)	7.0	7.0	28.7		8.0	40.9
30th %ile Term Code	Min	Min	Dwell		Max	Dwell
10th %ile Green (s)	0.0	0.0	37.2		8.0	49.4
10th %ile Term Code	Skip	Skip	Dwell		Max	Dwell
Stops (vph)	17	10	699		49	176
Fuel Used(gal)	0	0	12		4	35
CO Emissions (g/hr)	24	31	845		307	2423
NOx Emissions (g/hr)	5	6	165		60	471
VOC Emissions (g/hr)	6	7	196		71	562
Dilemma Vehicles (#)	0	0	0		0	37
Queue Length 50th (ft)	10	0	147		51	38
Queue Length 95th (ft)	19	6	219		40	61
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1109	826	1781		240	2612

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.03	0.08	0.61		0.61	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 59.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 61.6			
70th %ile Actuated Cycle: 60			
50th %ile Actuated Cycle: 60			
30th %ile Actuated Cycle: 60.3			
10th %ile Actuated Cycle: 56.2			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	3	0	0	6	3	1041	1	0	621	4
Future Volume (veh/h)	6	0	3	0	0	6	3	1041	1	0	621	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1885	1885	1885	1885	1885	1841	1885	1885	1870	1885
Adj Flow Rate, veh/h	16	0	8	0	0	12	4	1084	4	0	690	12
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.75	0.96	0.25	0.92	0.90	0.33
Percent Heavy Veh, %	1	2	1	1	1	1	1	4	1	1	2	1
Cap, veh/h	75	0	67	0	42	35	14	1619	740	6	1170	526
Arrive On Green	0.04	0.00	0.04	0.00	0.00	0.02	0.01	0.46	0.46	0.00	0.33	0.33
Sat Flow, veh/h	1781	0	1598	0	1885	1598	1795	3497	1598	1795	3554	1598
Grp Volume(v), veh/h	16	0	8	0	0	12	4	1084	4	0	690	12
Grp Sat Flow(s),veh/h/ln	1781	0	1598	0	1885	1598	1795	1749	1598	1795	1777	1598
Q Serve(g_s), s	0.3	0.0	0.2	0.0	0.0	0.2	0.1	7.7	0.0	0.0	5.1	0.2
Cycle Q Clear(g_c), s	0.3	0.0	0.2	0.0	0.0	0.2	0.1	7.7	0.0	0.0	5.1	0.2
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	0	67	0	42	35	14	1619	740	6	1170	526
V/C Ratio(X)	0.21	0.00	0.12	0.00	0.00	0.34	0.29	0.67	0.01	0.00	0.59	0.02
Avail Cap(c_a), veh/h	393	0	353	0	416	353	396	2205	1007	396	2240	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	14.6	0.0	0.0	15.3	15.7	6.6	4.6	0.0	8.9	7.2
Incr Delay (d2), s/veh	1.4	0.0	0.8	0.0	0.0	5.5	11.3	0.5	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.7	0.0	0.0	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	15.4	0.0	0.0	20.8	26.9	7.1	4.6	0.0	9.3	7.2
LnGrp LOS	B	A	B	A	A	C	C	A	A	A	A	A
Approach Vol, veh/h		24			12			1092			702	
Approach Delay, s/veh		15.9			20.8			7.2			9.3	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	20.7		5.8	4.2	16.4		5.2				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	0.0	9.7		2.3	2.1	7.1		2.2				
Green Ext Time (p_c), s	0.0	4.8		0.0	0.0	3.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		8.2	
HCM 6th LOS		A	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	32	1013	9	56	568
Future Volume (veh/h)	17	32	1013	9	56	568
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1530	1856	1870	1885	1870
Adj Flow Rate, veh/h	29	64	1078	12	147	645
Peak Hour Factor	0.58	0.50	0.94	0.75	0.38	0.88
Percent Heavy Veh, %	1	25	3	2	1	2
Cap, veh/h	187	135	1510	17	226	2262
Arrive On Green	0.10	0.10	0.42	0.42	0.13	0.64
Sat Flow, veh/h	1795	1296	3664	40	1795	3647
Grp Volume(v), veh/h	29	64	532	558	147	645
Grp Sat Flow(s),veh/h/ln	1795	1296	1763	1848	1795	1777
Q Serve(g_s), s	0.7	2.2	11.9	11.9	3.7	3.9
Cycle Q Clear(g_c), s	0.7	2.2	11.9	11.9	3.7	3.9
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	187	135	746	782	226	2262
V/C Ratio(X)	0.16	0.48	0.71	0.71	0.65	0.29
Avail Cap(c_a), veh/h	1391	1004	1048	1099	301	3020
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	20.2	11.4	11.4	19.9	3.9
Incr Delay (d2), s/veh	0.4	2.6	1.4	1.3	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	3.9	4.1	1.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	22.8	12.8	12.7	23.0	3.9
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	93		1090			792
Approach Delay, s/veh	21.9		12.7			7.5
Approach LOS	C		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.2	27.0			37.2	10.6
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 8	28.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	5.7	13.9			5.9	4.2
Green Ext Time (p_c), s	0.1	6.3			4.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix H: Opening Year 2027 No Build HCS Worksheets

HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/1/2023
Agency	MBI	Analysis Year	2027
Jurisdiction		Time Analyzed	Opening 2027 AM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	556	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	310
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	5.2
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data

Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	1123	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	657
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	11.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/1/2023
Agency	MBI	Analysis Year	2027
Jurisdiction		Time Analyzed	Opening 2027 PM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	1045	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	566
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.26

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	9.4
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data

Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	624	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	362
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

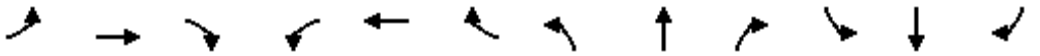
Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	6.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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Appendix I: Opening Year 2027 Build Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	2	0	27	3	547	6	22	1120	5
Future Volume (vph)	2	0	1	2	0	27	3	547	6	22	1120	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Flt Permitted		0.950			0.950		0.950			0.950		
Satd. Flow (perm)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			209			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.38	0.95	0.50	0.75	0.85	0.42
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	100%	1%	100%	33%	5%	100%	90%	5%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	4	0	4	4	0	54	8	576	12	29	1318	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	4	0	4	54	8	576	12	29	1318	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												

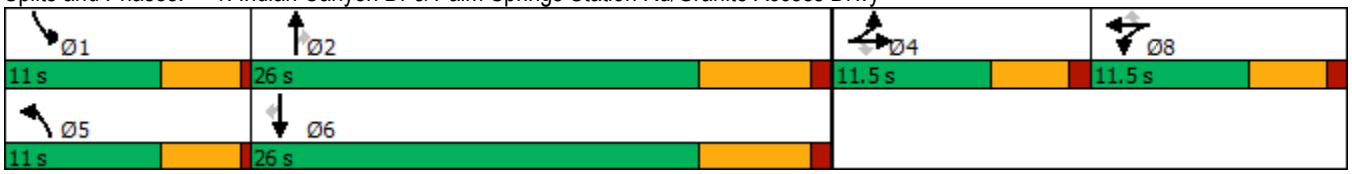


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.2	7.2		7.2	7.2	7.2	31.8	31.8	7.2	31.8	31.8
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.16	0.70	0.70	0.16	0.70	0.70
v/c Ratio		0.01	0.01		0.03	0.18	0.04	0.24	0.02	0.19	0.55	0.01
Control Delay		19.5	0.0		20.0	1.3	19.7	7.3	0.0	22.9	12.0	0.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.5	0.0		20.0	1.3	19.7	7.3	0.0	22.9	12.0	0.0
LOS		B	A		B	A	B	A	A	C	B	A
Approach Delay		9.8			2.6			7.3			12.2	
Approach LOS		A			A			A			B	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
70th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	20.0	20.0	0.0	20.0	20.0
70th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Hold	Hold	Skip	Max	Max
50th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	30.1	30.1	0.0	30.1	30.1
50th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		4	0		4	0	4	230	0	22	470	0
Fuel Used(gal)		0	0		0	0	0	35	0	1	20	0
CO Emissions (g/hr)		2	0		2	6	17	2439	23	47	1400	3
NOx Emissions (g/hr)		0	0		0	1	3	475	4	9	272	1
VOC Emissions (g/hr)		0	0		0	1	4	565	5	11	325	1
Dilemma Vehicles (#)		0	0		0	0	0	40	0	0	75	0
Queue Length 50th (ft)		1	0		1	0	2	28	0	7	90	0
Queue Length 95th (ft)		9	0		9	0	6	128	0	26	#385	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50	110		
Base Capacity (vph)		283	429		143	303	214	2406	620	150	2406	996

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.01	0.01		0.03	0.18	0.04	0.24	0.02	0.19	0.55	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 45.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 10.5		Intersection LOS: B	
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 37.5			
50th %ile Actuated Cycle: 47.6			
30th %ile Actuated Cycle: 41			
10th %ile Actuated Cycle: 41			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	36	520	15	26	1097
Future Volume (vph)	17	36	520	15	26	1097
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1380	3396	0	1656	3505
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1380	3396	0	1656	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		72	6			
Link Speed (mph)	25		55			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	33.7		8.5			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.50	0.50	0.93	0.50	0.69	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	17%	5%	14%	9%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	34	72	559	30	38	1247
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	72	589	0	38	1247
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

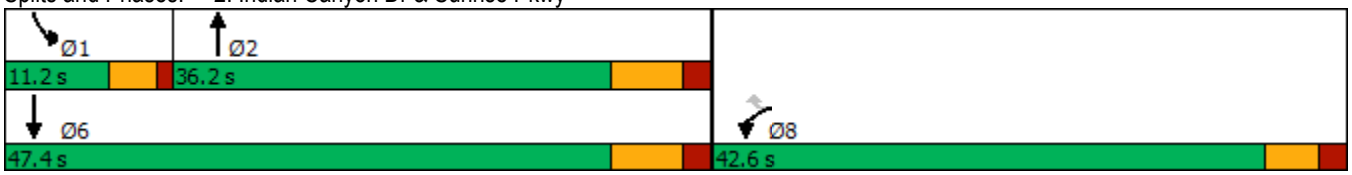


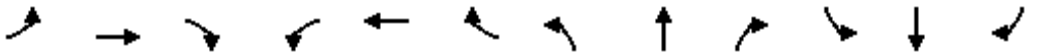
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.5	7.5	26.8		7.2	31.1
Actuated g/C Ratio	0.16	0.16	0.58		0.16	0.68
v/c Ratio	0.12	0.25	0.30		0.15	0.53
Control Delay	18.8	8.4	9.0		20.0	6.7
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	18.8	8.4	9.0		20.0	6.7
LOS	B	A	A		B	A
Approach Delay	11.8		9.0			7.1
Approach LOS	B		A			A
90th %ile Green (s)	8.5	8.5	19.4		7.0	30.6
90th %ile Term Code	Gap	Gap	Hold		Max	Gap
70th %ile Green (s)	7.1	7.1	14.5		7.0	25.7
70th %ile Term Code	Gap	Gap	Gap		Max	Hold
50th %ile Green (s)	7.0	7.0	27.2		0.0	27.2
50th %ile Term Code	Min	Min	Dwell		Skip	Dwell
30th %ile Green (s)	7.0	7.0	33.9		0.0	33.9
30th %ile Term Code	Min	Min	Dwell		Skip	Dwell
10th %ile Green (s)	0.0	0.0	26.3		0.0	26.3
10th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
Stops (vph)	16	11	290		25	547
Fuel Used(gal)	0	0	9		2	71
CO Emissions (g/hr)	21	34	607		139	4993
NOx Emissions (g/hr)	4	7	118		27	971
VOC Emissions (g/hr)	5	8	141		32	1157
Dilemma Vehicles (#)	0	0	45		0	90
Queue Length 50th (ft)	8	0	34		9	95
Queue Length 95th (ft)	15	6	104		24	147
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1438	1124	2295		259	3028

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.02	0.06	0.26		0.15	0.41

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 45.9			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 7.9		Intersection LOS: A	
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 51.5			
70th %ile Actuated Cycle: 45.2			
50th %ile Actuated Cycle: 46.6			
30th %ile Actuated Cycle: 53.3			
10th %ile Actuated Cycle: 33.1			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	1	2	0	27	3	547	6	22	1120	5
Future Volume (veh/h)	2	0	1	2	0	27	3	547	6	22	1120	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	418	1885	418	1411	1826	418	566	1826	1604
Adj Flow Rate, veh/h	4	0	4	4	0	54	8	576	12	29	1318	12
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.38	0.95	0.50	0.75	0.85	0.42
Percent Heavy Veh, %	1	1	1	100	1	100	33	5	100	90	5	20
Cap, veh/h	27	0	24	146	0	29	20	1425	145	26	1539	603
Arrive On Green	0.01	0.00	0.01	0.08	0.00	0.08	0.01	0.41	0.41	0.05	0.44	0.44
Sat Flow, veh/h	1795	0	1598	1795	0	354	1344	3469	354	539	3469	1359
Grp Volume(v), veh/h	4	0	4	4	0	54	8	576	12	29	1318	12
Grp Sat Flow(s),veh/h/ln	1795	0	1598	1795	0	354	1344	1735	354	539	1735	1359
Q Serve(g_s), s	0.1	0.0	0.1	0.1	0.0	3.5	0.3	5.0	0.9	2.0	14.5	0.2
Cycle Q Clear(g_c), s	0.1	0.0	0.1	0.1	0.0	3.5	0.3	5.0	0.9	2.0	14.5	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	27	0	24	146	0	29	20	1425	145	26	1539	603
V/C Ratio(X)	0.15	0.00	0.17	0.03	0.00	1.87	0.40	0.40	0.08	1.13	0.86	0.02
Avail Cap(c_a), veh/h	294	0	262	294	0	58	220	1626	166	88	1626	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	20.8	18.0	0.0	19.6	20.8	8.9	7.7	20.3	10.7	6.7
Incr Delay (d2), s/veh	2.6	0.0	3.3	0.1	0.0	486.9	12.5	0.2	0.2	120.7	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	4.2	0.1	1.1	0.0	1.1	3.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	24.1	18.1	0.0	506.5	33.3	9.1	7.9	141.0	15.2	6.7
LnGrp LOS	C	A	C	B	A	F	C	A	A	F	B	A
Approach Vol, veh/h		8			58			596			1359	
Approach Delay, s/veh		23.7			472.8			9.4			17.8	
Approach LOS		C			F			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	23.5		5.1	4.6	24.9		8.0				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	4.0	7.0		2.1	2.3	16.5		5.5				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	2.4		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	36	520	15	26	1097
Future Volume (veh/h)	17	36	520	15	26	1097
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1648	1826	1693	1767	1856
Adj Flow Rate, veh/h	34	72	559	30	38	1247
Peak Hour Factor	0.50	0.50	0.93	0.50	0.69	0.88
Percent Heavy Veh, %	1	17	5	14	9	3
Cap, veh/h	223	174	1256	67	103	1930
Arrive On Green	0.12	0.12	0.38	0.38	0.06	0.55
Sat Flow, veh/h	1795	1397	3440	179	1682	3618
Grp Volume(v), veh/h	34	72	289	300	38	1247
Grp Sat Flow(s),veh/h/ln	1795	1397	1735	1794	1682	1763
Q Serve(g_s), s	0.6	1.8	4.7	4.7	0.8	9.4
Cycle Q Clear(g_c), s	0.6	1.8	4.7	4.7	0.8	9.4
Prop In Lane	1.00	1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	223	174	651	673	103	1930
V/C Ratio(X)	0.15	0.41	0.44	0.45	0.37	0.65
Avail Cap(c_a), veh/h	1759	1368	1350	1396	312	3790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	15.3	8.8	8.9	17.0	6.0
Incr Delay (d2), s/veh	0.3	1.6	0.5	0.5	2.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	1.0	1.0	0.3	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.1	16.8	9.3	9.3	19.3	6.4
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	106		589			1285
Approach Delay, s/veh	16.3		9.3			6.7
Approach LOS	B		A			A

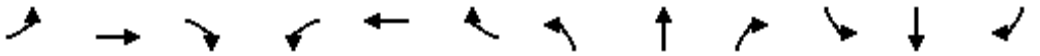
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.5	21.0			27.5	10.3
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	2.8	6.7			11.4	3.8
Green Ext Time (p_c), s	0.0	3.0			9.3	0.3

Intersection Summary	
HCM 6th Ctrl Delay	8.0
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	0	3	0	0	6	3	1041	1	0	621	4
Future Volume (vph)	6	0	3	0	0	6	3	1041	1	0	621	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Flt Permitted		0.950					0.950					
Satd. Flow (perm)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			421			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.75	0.96	0.25	0.92	0.90	0.33
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	4%	1%	1%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	16	0	8	0	0	12	4	1084	4	0	690	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	8	0	0	12	4	1084	4	0	690	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm			Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.3	7.3			7.3	7.3	37.0	37.0		35.5	35.5
Actuated g/C Ratio		0.18	0.18			0.18	0.18	0.90	0.90		0.87	0.87
v/c Ratio		0.05	0.02			0.02	0.01	0.35	0.00		0.22	0.01
Control Delay		19.3	0.0			0.0	19.3	3.4	0.0		5.3	0.0
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		19.3	0.0			0.0	19.3	3.4	0.0		5.3	0.0
LOS		B	A			A	B	A	A		A	A
Approach Delay		12.9						3.5			5.2	
Approach LOS		B						A			A	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	31.0	31.0	0.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold	Hold	Skip	Max	Max
70th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
70th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
50th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.4	30.4	0.0	30.4	30.4
50th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.9	28.9	0.0	28.9	28.9
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8	26.8	0.0	26.8	26.8
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		7	0			0	5	199	0		145	0
Fuel Used(gal)		0	0			0	0	61	0		8	0
CO Emissions (g/hr)		5	1			1	19	4274	4		567	2
NOx Emissions (g/hr)		1	0			0	4	832	1		110	0
VOC Emissions (g/hr)		1	0			0	4	991	1		131	0
Dilemma Vehicles (#)		0	0			0	0	20	0		14	0
Queue Length 50th (ft)		3	0			0	1	0	0		0	0
Queue Length 95th (ft)		20	0			0	7	186	0		155	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50			
Base Capacity (vph)		319	457			631	319	3135	1462		3067	1410

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0			0	0	0	0		0	0
Spillback Cap Reductn		0	0			0	0	0	0		0	0
Storage Cap Reductn		0	0			0	0	0	0		0	0
Reduced v/c Ratio		0.05	0.02			0.02	0.01	0.35	0.00		0.22	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 41			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 4.2		Intersection LOS: A	
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 41			
50th %ile Actuated Cycle: 36.4			
30th %ile Actuated Cycle: 34.9			
10th %ile Actuated Cycle: 32.8			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	32	1013	9	56	568
Future Volume (vph)	17	32	1013	9	56	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.998			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1292	3498	0	1787	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1292	3498	0	1787	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		64	1			
Link Speed (mph)	30		30			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	28.1		15.6			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.58	0.50	0.94	0.75	0.38	0.88
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	25%	3%	2%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	29	64	1078	12	147	645
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	64	1090	0	147	645
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

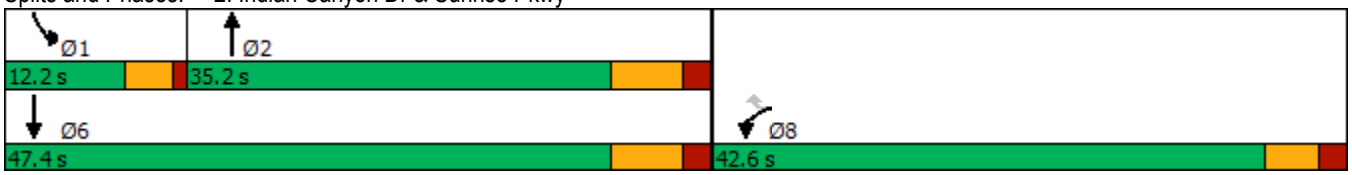


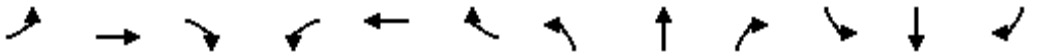
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	35.2		12.2	47.4
Total Split (%)	47.3%	47.3%	39.1%		13.6%	52.7%
Maximum Green (s)	37.0	37.0	28.4		8.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.3	7.3	30.3		8.0	44.0
Actuated g/C Ratio	0.12	0.12	0.51		0.13	0.74
v/c Ratio	0.13	0.30	0.61		0.61	0.25
Control Delay	25.2	11.6	13.3		38.1	3.9
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	25.2	11.6	13.3		38.1	3.9
LOS	C	B	B		D	A
Approach Delay	15.8		13.3			10.2
Approach LOS	B		B			B
90th %ile Green (s)	8.6	8.6	28.4		8.0	40.6
90th %ile Term Code	Gap	Gap	Max		Max	Hold
70th %ile Green (s)	7.0	7.0	28.4		8.0	40.6
70th %ile Term Code	Min	Min	Max		Max	Hold
50th %ile Green (s)	7.0	7.0	28.4		8.0	40.6
50th %ile Term Code	Min	Min	Max		Max	Hold
30th %ile Green (s)	7.0	7.0	28.7		8.0	40.9
30th %ile Term Code	Min	Min	Dwell		Max	Dwell
10th %ile Green (s)	0.0	0.0	37.2		8.0	49.4
10th %ile Term Code	Skip	Skip	Dwell		Max	Dwell
Stops (vph)	17	10	699		49	176
Fuel Used(gal)	0	0	12		4	35
CO Emissions (g/hr)	24	31	845		307	2423
NOx Emissions (g/hr)	5	6	165		60	471
VOC Emissions (g/hr)	6	7	196		71	562
Dilemma Vehicles (#)	0	0	0		0	37
Queue Length 50th (ft)	10	0	147		51	38
Queue Length 95th (ft)	19	6	219		40	61
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1109	826	1781		240	2612

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.03	0.08	0.61		0.61	0.25

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 59.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 61.6			
70th %ile Actuated Cycle: 60			
50th %ile Actuated Cycle: 60			
30th %ile Actuated Cycle: 60.3			
10th %ile Actuated Cycle: 56.2			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	0	3	0	0	6	3	1041	1	0	621	4
Future Volume (veh/h)	6	0	3	0	0	6	3	1041	1	0	621	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1885	1885	1885	1885	1885	1841	1885	1885	1870	1885
Adj Flow Rate, veh/h	16	0	8	0	0	12	4	1084	4	0	690	12
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.75	0.96	0.25	0.92	0.90	0.33
Percent Heavy Veh, %	1	2	1	1	1	1	1	4	1	1	2	1
Cap, veh/h	75	0	67	0	42	35	14	1619	740	6	1170	526
Arrive On Green	0.04	0.00	0.04	0.00	0.00	0.02	0.01	0.46	0.46	0.00	0.33	0.33
Sat Flow, veh/h	1781	0	1598	0	1885	1598	1795	3497	1598	1795	3554	1598
Grp Volume(v), veh/h	16	0	8	0	0	12	4	1084	4	0	690	12
Grp Sat Flow(s),veh/h/ln	1781	0	1598	0	1885	1598	1795	1749	1598	1795	1777	1598
Q Serve(g_s), s	0.3	0.0	0.2	0.0	0.0	0.2	0.1	7.7	0.0	0.0	5.1	0.2
Cycle Q Clear(g_c), s	0.3	0.0	0.2	0.0	0.0	0.2	0.1	7.7	0.0	0.0	5.1	0.2
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	75	0	67	0	42	35	14	1619	740	6	1170	526
V/C Ratio(X)	0.21	0.00	0.12	0.00	0.00	0.34	0.29	0.67	0.01	0.00	0.59	0.02
Avail Cap(c_a), veh/h	393	0	353	0	416	353	396	2205	1007	396	2240	1007
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	0.0	14.6	0.0	0.0	15.3	15.7	6.6	4.6	0.0	8.9	7.2
Incr Delay (d2), s/veh	1.4	0.0	0.8	0.0	0.0	5.5	11.3	0.5	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.7	0.0	0.0	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.1	0.0	15.4	0.0	0.0	20.8	26.9	7.1	4.6	0.0	9.3	7.2
LnGrp LOS	B	A	B	A	A	C	C	A	A	A	A	A
Approach Vol, veh/h		24			12			1092			702	
Approach Delay, s/veh		15.9			20.8			7.2			9.3	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	20.7		5.8	4.2	16.4		5.2				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	0.0	9.7		2.3	2.1	7.1		2.2				
Green Ext Time (p_c), s	0.0	4.8		0.0	0.0	3.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		8.2	
HCM 6th LOS		A	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	17	32	1013	9	56	568
Future Volume (veh/h)	17	32	1013	9	56	568
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1530	1856	1870	1885	1870
Adj Flow Rate, veh/h	29	64	1078	12	147	645
Peak Hour Factor	0.58	0.50	0.94	0.75	0.38	0.88
Percent Heavy Veh, %	1	25	3	2	1	2
Cap, veh/h	187	135	1510	17	226	2262
Arrive On Green	0.10	0.10	0.42	0.42	0.13	0.64
Sat Flow, veh/h	1795	1296	3664	40	1795	3647
Grp Volume(v), veh/h	29	64	532	558	147	645
Grp Sat Flow(s),veh/h/ln	1795	1296	1763	1848	1795	1777
Q Serve(g_s), s	0.7	2.2	11.9	11.9	3.7	3.9
Cycle Q Clear(g_c), s	0.7	2.2	11.9	11.9	3.7	3.9
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	187	135	746	782	226	2262
V/C Ratio(X)	0.16	0.48	0.71	0.71	0.65	0.29
Avail Cap(c_a), veh/h	1391	1004	1048	1099	301	3020
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	20.2	11.4	11.4	19.9	3.9
Incr Delay (d2), s/veh	0.4	2.6	1.4	1.3	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.7	3.9	4.1	1.4	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	22.8	12.8	12.7	23.0	3.9
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	93		1090			792
Approach Delay, s/veh	21.9		12.7			7.5
Approach LOS	C		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	10.2	27.0			37.2	10.6
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 8	28.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	5.7	13.9			5.9	4.2
Green Ext Time (p_c), s	0.1	6.3			4.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix J: Opening Year 2027 Build HCS Worksheets

HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/1/2023
Agency	MBI	Analysis Year	2027
Jurisdiction		Time Analyzed	Opening 2027 Build AM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	556	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	310
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.14

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	5.2
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data			
Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity			
Volume (V) veh/h	1123	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	657
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.30

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	11.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/1/2023
Agency	MBI	Analysis Year	2027
Jurisdiction		Time Analyzed	Opening 2027 Build PM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	1045	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	566
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.26

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	9.4
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data			
Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity			
Volume (V) veh/h	624	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	362
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	6.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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Appendix K: Design Year 2047 No Build Synchro Worksheets

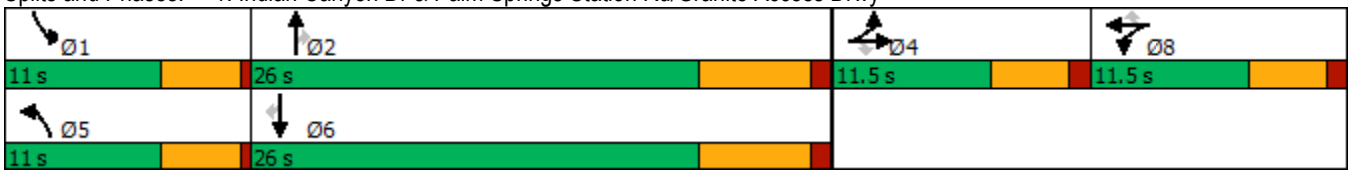
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	1	3	0	33	4	757	8	27	1395	6
Future Volume (vph)	3	0	1	3	0	33	4	757	8	27	1395	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Flt Permitted		0.950			0.950		0.950			0.950		
Satd. Flow (perm)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			209			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.92	0.95	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	100%	1%	100%	33%	5%	100%	90%	5%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	6	0	4	6	0	66	4	797	9	29	1516	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	4	0	6	66	4	797	9	29	1516	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.2	7.2		7.2	7.2	7.2	31.1	31.1	7.2	31.1	31.1
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.16	0.69	0.69	0.16	0.69	0.69
v/c Ratio		0.02	0.01		0.04	0.22	0.02	0.33	0.01	0.19	0.63	0.01
Control Delay		19.3	0.0		20.0	1.6	19.5	7.9	0.0	22.5	13.5	0.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.3	0.0		20.0	1.6	19.5	7.9	0.0	22.5	13.5	0.0
LOS		B	A		B	A	B	A	A	C	B	A
Approach Delay		11.6			3.2			7.9			13.6	
Approach LOS		B			A			A			B	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
70th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	20.0	20.0	0.0	20.0	20.0
70th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Hold	Hold	Skip	Max	Max
50th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	27.1	27.1	0.0	27.1	27.1
50th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		5	0		5	0	7	344	0	27	607	0
Fuel Used(gal)		0	0		0	0	0	49	0	1	26	0
CO Emissions (g/hr)		3	0		3	7	25	3416	30	58	1801	3
NOx Emissions (g/hr)		1	0		1	1	5	665	6	11	350	1
VOC Emissions (g/hr)		1	0		1	2	6	792	7	13	417	1
Dilemma Vehicles (#)		0	0		0	0	0	55	0	0	92	0
Queue Length 50th (ft)		1	0		1	0	1	43	0	7	114	0
Queue Length 95th (ft)		11	0		11	0	9	185	0	32	#507	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50	110		
Base Capacity (vph)		286	432		144	305	217	2389	617	152	2389	991

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.02	0.01		0.04	0.22	0.02	0.33	0.01	0.19	0.63	0.01

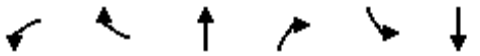
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.8			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 37.5			
50th %ile Actuated Cycle: 44.6			
30th %ile Actuated Cycle: 41			
10th %ile Actuated Cycle: 41			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	53	108	661	18	64	1335
Future Volume (vph)	53	108	661	18	64	1335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1380	3416	0	1656	3505
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1380	3416	0	1656	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		117	3			
Link Speed (mph)	25		55			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	33.7		8.5			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.93	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	17%	5%	14%	9%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	58	117	711	20	70	1451
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	117	731	0	70	1451
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

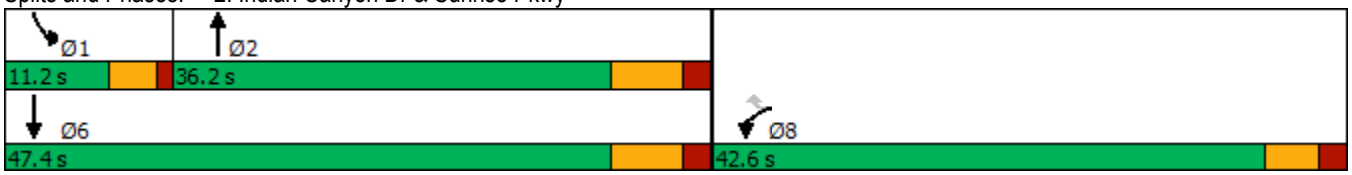


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.9	7.9	29.0		7.2	35.2
Actuated g/C Ratio	0.16	0.16	0.57		0.14	0.70
v/c Ratio	0.21	0.37	0.37		0.30	0.60
Control Delay	23.2	9.5	10.2		26.4	7.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	23.2	9.5	10.2		26.4	7.2
LOS	C	A	B		C	A
Approach Delay	14.0		10.2			8.1
Approach LOS	B		B			A
90th %ile Green (s)	9.6	9.6	29.0		7.0	40.2
90th %ile Term Code	Gap	Gap	Hold		Max	Gap
70th %ile Green (s)	8.2	8.2	22.2		7.0	33.4
70th %ile Term Code	Gap	Gap	Hold		Max	Gap
50th %ile Green (s)	7.3	7.3	18.5		7.0	29.7
50th %ile Term Code	Gap	Gap	Hold		Max	Gap
30th %ile Green (s)	7.0	7.0	30.6		0.0	30.6
30th %ile Term Code	Min	Min	Dwell		Skip	Dwell
10th %ile Green (s)	0.0	0.0	30.6		0.0	30.6
10th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
Stops (vph)	48	25	381		59	673
Fuel Used(gal)	1	1	11		5	87
CO Emissions (g/hr)	69	101	800		344	6096
NOx Emissions (g/hr)	13	20	156		67	1186
VOC Emissions (g/hr)	16	23	185		80	1413
Dilemma Vehicles (#)	0	0	49		0	95
Queue Length 50th (ft)	15	0	84		18	124
Queue Length 95th (ft)	49	39	132		60	201
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1343	1066	2204		235	2831

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.04	0.11	0.33		0.30	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 50.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 62.2			
70th %ile Actuated Cycle: 54			
50th %ile Actuated Cycle: 49.4			
30th %ile Actuated Cycle: 50			
10th %ile Actuated Cycle: 37.4			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	1	3	0	33	4	757	8	27	1395	6
Future Volume (veh/h)	3	0	1	3	0	33	4	757	8	27	1395	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	418	1885	418	1411	1826	418	566	1826	1604
Adj Flow Rate, veh/h	6	0	4	6	0	66	4	797	9	29	1516	7
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.92	0.95	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	100	1	100	33	5	100	90	5	20
Cap, veh/h	33	0	29	167	0	33	10	1430	146	26	1568	614
Arrive On Green	0.02	0.00	0.02	0.09	0.00	0.09	0.01	0.41	0.41	0.05	0.45	0.45
Sat Flow, veh/h	1795	0	1598	1795	0	354	1344	3469	354	539	3469	1359
Grp Volume(v), veh/h	6	0	4	6	0	66	4	797	9	29	1516	7
Grp Sat Flow(s),veh/h/ln	1795	0	1598	1795	0	354	1344	1735	354	539	1735	1359
Q Serve(g_s), s	0.1	0.0	0.1	0.1	0.0	4.1	0.1	7.8	0.7	2.1	18.8	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.1	0.1	0.0	4.1	0.1	7.8	0.7	2.1	18.8	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	0	29	167	0	33	10	1430	146	26	1568	614
V/C Ratio(X)	0.18	0.00	0.14	0.04	0.00	2.01	0.39	0.56	0.06	1.13	0.97	0.01
Avail Cap(c_a), veh/h	284	0	253	284	0	56	213	1568	160	85	1568	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	21.4	18.3	0.0	20.1	21.9	9.9	7.8	21.1	11.8	6.7
Incr Delay (d2), s/veh	2.6	0.0	2.1	0.1	0.0	543.4	22.7	0.4	0.2	123.2	15.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.0	5.3	0.1	1.7	0.0	1.1	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	23.5	18.4	0.0	563.4	44.6	10.3	8.0	144.3	27.4	6.7
LnGrp LOS	C	A	C	B	A	F	D	B	A	F	C	A
Approach Vol, veh/h		10			72			810			1552	
Approach Delay, s/veh		23.8			518.0			10.4			29.5	
Approach LOS		C			F			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	24.2		5.3	4.3	26.0		8.6				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	4.1	9.8		2.1	2.1	20.8		6.1				
Green Ext Time (p_c), s	0.0	3.4		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		37.5	
HCM 6th LOS		D	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	53	108	661	18	64	1335
Future Volume (veh/h)	53	108	661	18	64	1335
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1648	1826	1693	1767	1856
Adj Flow Rate, veh/h	58	117	711	20	70	1451
Peak Hour Factor	0.92	0.92	0.93	0.92	0.92	0.92
Percent Heavy Veh, %	1	17	5	14	9	3
Cap, veh/h	250	194	1369	38	153	2054
Arrive On Green	0.14	0.14	0.40	0.40	0.09	0.58
Sat Flow, veh/h	1795	1397	3537	97	1682	3618
Grp Volume(v), veh/h	58	117	358	373	70	1451
Grp Sat Flow(s),veh/h/ln	1795	1397	1735	1808	1682	1763
Q Serve(g_s), s	1.3	3.5	7.0	7.0	1.8	13.0
Cycle Q Clear(g_c), s	1.3	3.5	7.0	7.0	1.8	13.0
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	250	194	689	718	153	2054
V/C Ratio(X)	0.23	0.60	0.52	0.52	0.46	0.71
Avail Cap(c_a), veh/h	1491	1160	1145	1194	264	3214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	18.0	10.2	10.2	19.2	6.6
Incr Delay (d2), s/veh	0.5	3.0	0.6	0.6	2.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.2	1.7	1.7	0.6	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	21.0	10.8	10.8	21.3	7.1
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	175		731			1521
Approach Delay, s/veh	19.8		10.8			7.7
Approach LOS	B		B			A

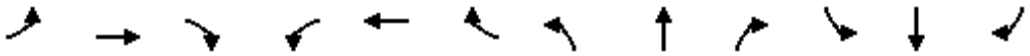
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.3	24.5			32.7	11.8
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	3.8	9.0			15.0	5.5
Green Ext Time (p_c), s	0.0	3.7			10.9	0.6

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	4	0	0	8	4	1328	1	0	855	5
Future Volume (vph)	8	0	4	0	0	8	4	1328	1	0	855	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Flt Permitted		0.950					0.950					
Satd. Flow (perm)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			405			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.92	0.96	0.92	0.92	0.91	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	4%	1%	1%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	0	11	0	0	16	4	1383	1	0	940	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	11	0	0	16	4	1383	1	0	940	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm			Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												

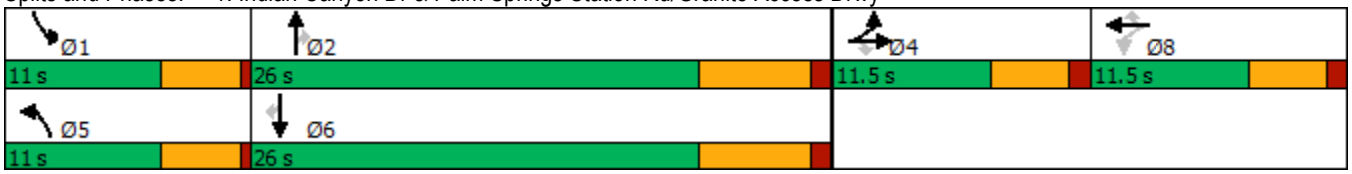


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.2	7.2			7.2	7.2	38.0	38.0		36.3	36.3
Actuated g/C Ratio		0.16	0.16			0.16	0.16	0.83	0.83		0.79	0.79
v/c Ratio		0.08	0.03			0.03	0.01	0.48	0.00		0.34	0.00
Control Delay		20.9	0.0			0.1	20.8	5.6	0.0		7.4	0.0
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		20.9	0.0			0.1	20.8	5.6	0.0		7.4	0.0
LOS		C	A			A	C	A	A		A	A
Approach Delay		13.7			0.1			5.6			7.3	
Approach LOS		B			A			A			A	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	31.0	31.0	0.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold	Hold	Skip	Max	Max
70th %ile Green (s)	7.0	7.0	7.0	0.0	0.0	0.0	0.0	29.0	29.0	0.0	29.0	29.0
70th %ile Term Code	Max	Max	Max	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
50th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
50th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		8	0			0	7	467	0		288	0
Fuel Used(gal)		0	0			0	0	83	0		13	0
CO Emissions (g/hr)		6	1			2	26	5770	4		920	3
NOx Emissions (g/hr)		1	0			0	5	1123	1		179	1
VOC Emissions (g/hr)		1	0			0	6	1337	1		213	1
Dilemma Vehicles (#)		0	0			0	0	57	0		40	0
Queue Length 50th (ft)		4	0			0	1	0	0		0	0
Queue Length 95th (ft)		24	0			0	9	271	0		#231	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50			
Base Capacity (vph)		278	425			590	278	2874	1355		2801	1303

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0			0	0	0	0		0	0
Spillback Cap Reductn		0	0			0	0	0	0		0	0
Storage Cap Reductn		0	0			0	0	0	0		0	0
Reduced v/c Ratio		0.08	0.03			0.03	0.01	0.48	0.00		0.34	0.00

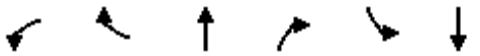
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 45.9			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.4		Intersection LOS: A	
Intersection Capacity Utilization 60.9%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 46.5			
50th %ile Actuated Cycle: 41			
30th %ile Actuated Cycle: 41			
10th %ile Actuated Cycle: 41			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	83	1250	11	175	684
Future Volume (vph)	43	83	1250	11	175	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.999			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1292	3502	0	1787	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1292	3502	0	1787	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		90	1			
Link Speed (mph)	30		30			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	28.1		15.6			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	25%	3%	2%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	47	90	1359	12	190	743
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	90	1371	0	190	743
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

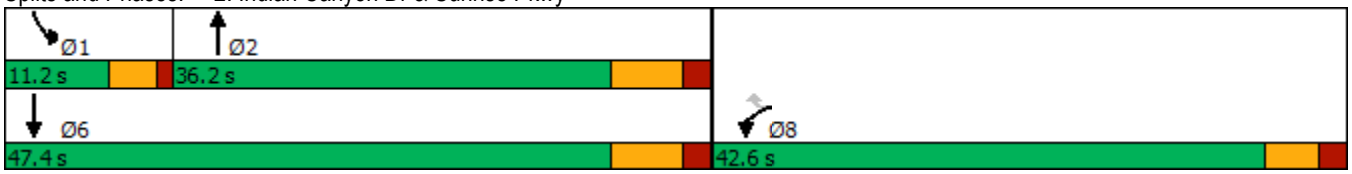


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.6	7.6	32.3		7.0	44.8
Actuated g/C Ratio	0.12	0.12	0.53		0.11	0.73
v/c Ratio	0.21	0.38	0.74		0.93	0.29
Control Delay	26.3	11.5	15.7		78.7	4.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	26.3	11.5	15.7		78.7	4.1
LOS	C	B	B		E	A
Approach Delay	16.6		15.7			19.3
Approach LOS	B		B			B
90th %ile Green (s)	9.2	9.2	29.4		7.0	40.6
90th %ile Term Code	Gap	Gap	Max		Max	Hold
70th %ile Green (s)	7.7	7.7	29.4		7.0	40.6
70th %ile Term Code	Gap	Gap	Max		Max	Hold
50th %ile Green (s)	7.0	7.0	29.4		7.0	40.6
50th %ile Term Code	Min	Min	Max		Max	Hold
30th %ile Green (s)	7.0	7.0	29.4		7.0	40.6
30th %ile Term Code	Min	Min	Max		Max	Hold
10th %ile Green (s)	0.0	0.0	44.2		7.0	55.4
10th %ile Term Code	Skip	Skip	Dwell		Max	Dwell
Stops (vph)	40	22	925		142	224
Fuel Used(gal)	1	1	16		15	42
CO Emissions (g/hr)	61	78	1110		1047	2937
NOx Emissions (g/hr)	12	15	216		204	571
VOC Emissions (g/hr)	14	18	257		243	681
Dilemma Vehicles (#)	0	0	0		0	42
Queue Length 50th (ft)	16	0	202		69	46
Queue Length 95th (ft)	42	35	306		#183	76
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1083	819	1854		205	2601

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.04	0.11	0.74		0.93	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 61			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 62.2			
70th %ile Actuated Cycle: 60.7			
50th %ile Actuated Cycle: 60			
30th %ile Actuated Cycle: 60			
10th %ile Actuated Cycle: 62.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

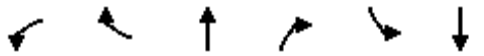
Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	4	0	0	8	4	1328	1	0	855	5
Future Volume (veh/h)	8	0	4	0	0	8	4	1328	1	0	855	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1885	1885	1885	1885	1885	1841	1885	1885	1870	1885
Adj Flow Rate, veh/h	21	0	11	0	0	16	4	1383	1	0	940	5
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.92	0.96	0.92	0.92	0.91	0.92
Percent Heavy Veh, %	1	2	1	1	1	1	1	4	1	1	2	1
Cap, veh/h	95	0	85	0	54	46	14	1764	806	5	1374	618
Arrive On Green	0.05	0.00	0.05	0.00	0.00	0.03	0.01	0.50	0.50	0.00	0.39	0.39
Sat Flow, veh/h	1781	0	1598	0	1885	1598	1795	3497	1598	1795	3554	1598
Grp Volume(v), veh/h	21	0	11	0	0	16	4	1383	1	0	940	5
Grp Sat Flow(s),veh/h/ln	1781	0	1598	0	1885	1598	1795	1749	1598	1795	1777	1598
Q Serve(g_s), s	0.4	0.0	0.2	0.0	0.0	0.4	0.1	11.8	0.0	0.0	8.0	0.1
Cycle Q Clear(g_c), s	0.4	0.0	0.2	0.0	0.0	0.4	0.1	11.8	0.0	0.0	8.0	0.1
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	0	85	0	54	46	14	1764	806	5	1374	618
V/C Ratio(X)	0.22	0.00	0.13	0.00	0.00	0.35	0.29	0.78	0.00	0.00	0.68	0.01
Avail Cap(c_a), veh/h	344	0	308	0	364	308	347	1929	881	347	1960	881
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	16.4	0.0	0.0	17.3	17.9	7.4	4.5	0.0	9.3	6.8
Incr Delay (d2), s/veh	1.2	0.0	0.7	0.0	0.0	4.5	11.3	2.0	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.0	0.0	0.2	0.1	1.6	0.0	0.0	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	17.0	0.0	0.0	21.7	29.2	9.4	4.5	0.0	9.9	6.9
LnGrp LOS	B	A	B	A	A	C	C	A	A	A	A	A
Approach Vol, veh/h		32			16			1388			945	
Approach Delay, s/veh		17.4			21.7			9.4			9.9	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	24.3		6.4	4.3	20.0		5.5				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	0.0	13.8		2.4	2.1	10.0		2.4				
Green Ext Time (p_c), s	0.0	4.1		0.0	0.0	4.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		9.8	
HCM 6th LOS		A	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	83	1250	11	175	684
Future Volume (veh/h)	43	83	1250	11	175	684
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1530	1856	1870	1885	1870
Adj Flow Rate, veh/h	47	90	1359	12	190	743
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	25	3	2	1	2
Cap, veh/h	198	143	1672	15	225	2372
Arrive On Green	0.11	0.11	0.47	0.47	0.13	0.67
Sat Flow, veh/h	1795	1296	3674	32	1795	3647
Grp Volume(v), veh/h	47	90	669	702	190	743
Grp Sat Flow(s),veh/h/ln	1795	1296	1763	1850	1795	1777
Q Serve(g_s), s	1.3	3.7	18.2	18.2	5.8	4.9
Cycle Q Clear(g_c), s	1.3	3.7	18.2	18.2	5.8	4.9
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	198	143	823	864	225	2372
V/C Ratio(X)	0.24	0.63	0.81	0.81	0.84	0.31
Avail Cap(c_a), veh/h	1190	859	928	974	225	2584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	23.7	12.8	12.8	23.9	3.9
Incr Delay (d2), s/veh	0.6	4.5	5.0	4.8	24.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.2	6.9	7.2	3.5	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.3	28.2	17.8	17.6	48.2	4.0
LnGrp LOS	C	C	B	B	D	A
Approach Vol, veh/h	137		1371			933
Approach Delay, s/veh	26.5		17.7			13.0
Approach LOS	C		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.2	32.9			44.1	11.8
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	7.8	20.2			6.9	5.7
Green Ext Time (p_c), s	0.0	5.9			4.8	0.4

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix L: Design Year 2047 No Build HCS Worksheets

HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/9/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Design 2047 AM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	769	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	429
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.20

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	7.2
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data			
Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity			
Volume (V) veh/h	1399	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	783
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	13.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	-		

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HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/9/2023
Agency	MBI	Analysis Year	2047
Jurisdiction		Time Analyzed	Design 2047 PM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	1333	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	722
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	12.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data			
Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

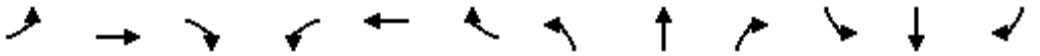
Direction 2 Demand and Capacity			
Volume (V) veh/h	859	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	476
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.22

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	7.9
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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Appendix M: Design Year 2047 Build Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	1	3	0	33	4	757	8	27	1395	6
Future Volume (vph)	3	0	1	3	0	33	4	757	8	27	1395	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Flt Permitted		0.950			0.950		0.950			0.950		
Satd. Flow (perm)	0	1787	1599	0	902	808	1357	3438	808	950	3438	1346
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			209			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.92	0.95	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	100%	1%	100%	33%	5%	100%	90%	5%	20%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	6	0	4	6	0	66	4	797	9	29	1516	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	4	0	6	66	4	797	9	29	1516	7
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												

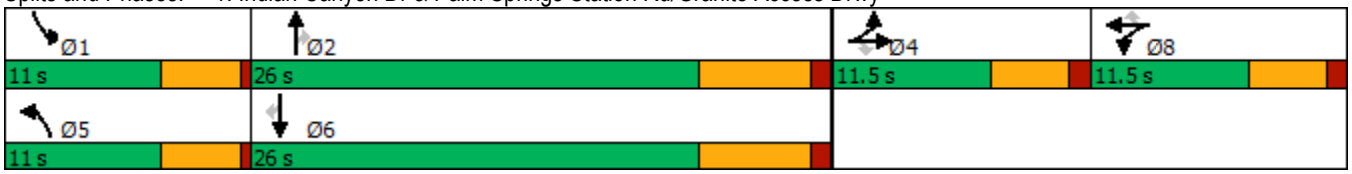


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.2	7.2		7.2	7.2	7.2	31.1	31.1	7.2	31.1	31.1
Actuated g/C Ratio		0.16	0.16		0.16	0.16	0.16	0.69	0.69	0.16	0.69	0.69
v/c Ratio		0.02	0.01		0.04	0.22	0.02	0.33	0.01	0.19	0.63	0.01
Control Delay		19.3	0.0		20.0	1.6	19.5	7.9	0.0	22.5	13.5	0.0
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		19.3	0.0		20.0	1.6	19.5	7.9	0.0	22.5	13.5	0.0
LOS		B	A		B	A	B	A	A	C	B	A
Approach Delay		11.6			3.2			7.9			13.6	
Approach LOS		B			A			A			B	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
70th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	20.0	20.0	0.0	20.0	20.0
70th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Hold	Hold	Skip	Max	Max
50th %ile Green (s)	0.0	0.0	0.0	7.0	7.0	7.0	0.0	27.1	27.1	0.0	27.1	27.1
50th %ile Term Code	Skip	Skip	Skip	Max	Max	Max	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		5	0		5	0	7	344	0	27	607	0
Fuel Used(gal)		0	0		0	0	0	49	0	1	26	0
CO Emissions (g/hr)		3	0		3	7	25	3416	30	58	1801	3
NOx Emissions (g/hr)		1	0		1	1	5	665	6	11	350	1
VOC Emissions (g/hr)		1	0		1	2	6	792	7	13	417	1
Dilemma Vehicles (#)		0	0		0	0	0	55	0	0	92	0
Queue Length 50th (ft)		1	0		1	0	1	43	0	7	114	0
Queue Length 95th (ft)		11	0		11	0	9	185	0	32	#507	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50	110		
Base Capacity (vph)		286	432		144	305	217	2389	617	152	2389	991

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.02	0.01		0.04	0.22	0.02	0.33	0.01	0.19	0.63	0.01

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 44.8			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 62.7%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 37.5			
50th %ile Actuated Cycle: 44.6			
30th %ile Actuated Cycle: 41			
10th %ile Actuated Cycle: 41			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	53	108	661	18	64	1335
Future Volume (vph)	53	108	661	18	64	1335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.996			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1380	3416	0	1656	3505
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1380	3416	0	1656	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		117	3			
Link Speed (mph)	25		55			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	33.7		8.5			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.93	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	17%	5%	14%	9%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	58	117	711	20	70	1451
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	117	731	0	70	1451
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

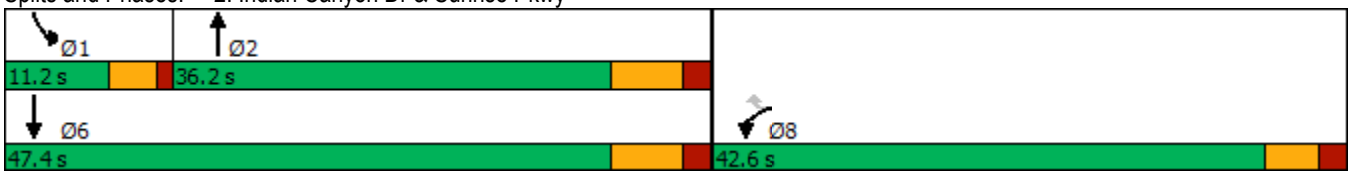


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.9	7.9	29.0		7.2	35.2
Actuated g/C Ratio	0.16	0.16	0.57		0.14	0.70
v/c Ratio	0.21	0.37	0.37		0.30	0.60
Control Delay	23.2	9.5	10.2		26.4	7.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	23.2	9.5	10.2		26.4	7.2
LOS	C	A	B		C	A
Approach Delay	14.0		10.2			8.1
Approach LOS	B		B			A
90th %ile Green (s)	9.6	9.6	29.0		7.0	40.2
90th %ile Term Code	Gap	Gap	Hold		Max	Gap
70th %ile Green (s)	8.2	8.2	22.2		7.0	33.4
70th %ile Term Code	Gap	Gap	Hold		Max	Gap
50th %ile Green (s)	7.3	7.3	18.5		7.0	29.7
50th %ile Term Code	Gap	Gap	Hold		Max	Gap
30th %ile Green (s)	7.0	7.0	30.6		0.0	30.6
30th %ile Term Code	Min	Min	Dwell		Skip	Dwell
10th %ile Green (s)	0.0	0.0	30.6		0.0	30.6
10th %ile Term Code	Skip	Skip	Dwell		Skip	Dwell
Stops (vph)	48	25	381		59	673
Fuel Used(gal)	1	1	11		5	87
CO Emissions (g/hr)	69	101	800		344	6096
NOx Emissions (g/hr)	13	20	156		67	1186
VOC Emissions (g/hr)	16	23	185		80	1413
Dilemma Vehicles (#)	0	0	49		0	95
Queue Length 50th (ft)	15	0	84		18	124
Queue Length 95th (ft)	49	39	132		60	201
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1343	1066	2204		235	2831

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.04	0.11	0.33		0.30	0.51

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 50.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 62.2			
70th %ile Actuated Cycle: 54			
50th %ile Actuated Cycle: 49.4			
30th %ile Actuated Cycle: 50			
10th %ile Actuated Cycle: 37.4			

Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	0	1	3	0	33	4	757	8	27	1395	6
Future Volume (veh/h)	3	0	1	3	0	33	4	757	8	27	1395	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	418	1885	418	1411	1826	418	566	1826	1604
Adj Flow Rate, veh/h	6	0	4	6	0	66	4	797	9	29	1516	7
Peak Hour Factor	0.50	0.92	0.25	0.50	0.92	0.50	0.92	0.95	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	100	1	100	33	5	100	90	5	20
Cap, veh/h	33	0	29	167	0	33	10	1430	146	26	1568	614
Arrive On Green	0.02	0.00	0.02	0.09	0.00	0.09	0.01	0.41	0.41	0.05	0.45	0.45
Sat Flow, veh/h	1795	0	1598	1795	0	354	1344	3469	354	539	3469	1359
Grp Volume(v), veh/h	6	0	4	6	0	66	4	797	9	29	1516	7
Grp Sat Flow(s),veh/h/ln	1795	0	1598	1795	0	354	1344	1735	354	539	1735	1359
Q Serve(g_s), s	0.1	0.0	0.1	0.1	0.0	4.1	0.1	7.8	0.7	2.1	18.8	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.1	0.1	0.0	4.1	0.1	7.8	0.7	2.1	18.8	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	33	0	29	167	0	33	10	1430	146	26	1568	614
V/C Ratio(X)	0.18	0.00	0.14	0.04	0.00	2.01	0.39	0.56	0.06	1.13	0.97	0.01
Avail Cap(c_a), veh/h	284	0	253	284	0	56	213	1568	160	85	1568	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	21.4	18.3	0.0	20.1	21.9	9.9	7.8	21.1	11.8	6.7
Incr Delay (d2), s/veh	2.6	0.0	2.1	0.1	0.0	543.4	22.7	0.4	0.2	123.2	15.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.0	5.3	0.1	1.7	0.0	1.1	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	23.5	18.4	0.0	563.4	44.6	10.3	8.0	144.3	27.4	6.7
LnGrp LOS	C	A	C	B	A	F	D	B	A	F	C	A
Approach Vol, veh/h		10			72			810			1552	
Approach Delay, s/veh		23.8			518.0			10.4			29.5	
Approach LOS		C			F			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	24.2		5.3	4.3	26.0		8.6				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	4.1	9.8		2.1	2.1	20.8		6.1				
Green Ext Time (p_c), s	0.0	3.4		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		37.5	
HCM 6th LOS		D	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	53	108	661	18	64	1335
Future Volume (veh/h)	53	108	661	18	64	1335
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1648	1826	1693	1767	1856
Adj Flow Rate, veh/h	58	117	711	20	70	1451
Peak Hour Factor	0.92	0.92	0.93	0.92	0.92	0.92
Percent Heavy Veh, %	1	17	5	14	9	3
Cap, veh/h	250	194	1369	38	153	2054
Arrive On Green	0.14	0.14	0.40	0.40	0.09	0.58
Sat Flow, veh/h	1795	1397	3537	97	1682	3618
Grp Volume(v), veh/h	58	117	358	373	70	1451
Grp Sat Flow(s),veh/h/ln	1795	1397	1735	1808	1682	1763
Q Serve(g_s), s	1.3	3.5	7.0	7.0	1.8	13.0
Cycle Q Clear(g_c), s	1.3	3.5	7.0	7.0	1.8	13.0
Prop In Lane	1.00	1.00		0.05	1.00	
Lane Grp Cap(c), veh/h	250	194	689	718	153	2054
V/C Ratio(X)	0.23	0.60	0.52	0.52	0.46	0.71
Avail Cap(c_a), veh/h	1491	1160	1145	1194	264	3214
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	18.0	10.2	10.2	19.2	6.6
Incr Delay (d2), s/veh	0.5	3.0	0.6	0.6	2.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.2	1.7	1.7	0.6	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	21.0	10.8	10.8	21.3	7.1
LnGrp LOS	B	C	B	B	C	A
Approach Vol, veh/h	175		731			1521
Approach Delay, s/veh	19.8		10.8			7.7
Approach LOS	B		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.3	24.5			32.7	11.8
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	3.8	9.0			15.0	5.5
Green Ext Time (p_c), s	0.0	3.7			10.9	0.6

Intersection Summary	
HCM 6th Ctrl Delay	9.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

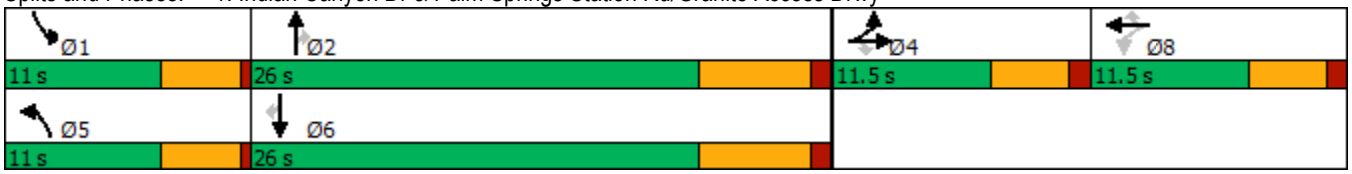
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	0	4	0	0	8	4	1328	1	0	855	5
Future Volume (vph)	8	0	4	0	0	8	4	1328	1	0	855	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		45	0		80	70		50	110		0
Storage Lanes	0		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Flt Permitted		0.950					0.950					
Satd. Flow (perm)	0	1787	1599	0	1881	1599	1787	3471	1599	1881	3539	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			209			405			182			182
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		285			319			1039			1206	
Travel Time (s)		7.8			8.7			12.9			15.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.92	0.96	0.92	0.92	0.91	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	1%	1%	1%	1%	1%	4%	1%	1%	2%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	21	0	11	0	0	16	4	1383	1	0	940	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	11	0	0	16	4	1383	1	0	940	5
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type	Split	NA	Perm			Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	16.0	16.0	11.0	16.0	16.0
Total Split (s)	11.5	11.5	11.5	11.5	11.5	11.5	11.0	26.0	26.0	11.0	26.0	26.0
Total Split (%)	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%	18.3%	43.3%	43.3%	18.3%	43.3%	43.3%
Maximum Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	20.0	20.0	7.0	20.0	20.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	5.0	3.5	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	0.5	1.0	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5		4.5	4.5	4.0	6.0	6.0	4.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		7.2	7.2			7.2	7.2	38.0	38.0		36.3	36.3
Actuated g/C Ratio		0.16	0.16			0.16	0.16	0.83	0.83		0.79	0.79
v/c Ratio		0.08	0.03			0.03	0.01	0.48	0.00		0.34	0.00
Control Delay		20.9	0.0			0.1	20.8	5.6	0.0		7.4	0.0
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0
Total Delay		20.9	0.0			0.1	20.8	5.6	0.0		7.4	0.0
LOS		C	A			A	C	A	A		A	A
Approach Delay		13.7			0.1			5.6			7.3	
Approach LOS		B			A			A			A	
90th %ile Green (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	31.0	31.0	0.0	20.0	20.0
90th %ile Term Code	Max	Max	Max	Max	Max	Max	Max	Hold	Hold	Skip	Max	Max
70th %ile Green (s)	7.0	7.0	7.0	0.0	0.0	0.0	0.0	29.0	29.0	0.0	29.0	29.0
70th %ile Term Code	Max	Max	Max	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
50th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
50th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0	35.0	0.0	35.0	35.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
Stops (vph)		8	0			0	7	467	0		288	0
Fuel Used(gal)		0	0			0	0	83	0		13	0
CO Emissions (g/hr)		6	1			2	26	5770	4		920	3
NOx Emissions (g/hr)		1	0			0	5	1123	1		179	1
VOC Emissions (g/hr)		1	0			0	6	1337	1		213	1
Dilemma Vehicles (#)		0	0			0	0	57	0		40	0
Queue Length 50th (ft)		4	0			0	1	0	0		0	0
Queue Length 95th (ft)		24	0			0	9	271	0		#231	0
Internal Link Dist (ft)		205			239			959			1126	
Turn Bay Length (ft)			45			80	70		50			
Base Capacity (vph)		278	425			590	278	2874	1355		2801	1303

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0	0			0	0	0	0		0	0
Spillback Cap Reductn		0	0			0	0	0	0		0	0
Storage Cap Reductn		0	0			0	0	0	0		0	0
Reduced v/c Ratio		0.08	0.03			0.03	0.01	0.48	0.00		0.34	0.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 45.9			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 6.4		Intersection LOS: A	
Intersection Capacity Utilization 60.9%		ICU Level of Service B	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 60			
70th %ile Actuated Cycle: 46.5			
50th %ile Actuated Cycle: 41			
30th %ile Actuated Cycle: 41			
10th %ile Actuated Cycle: 41			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Indian Canyon Dr & Palm Springs Station Rd/Granite Access Drwy





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	43	83	1250	11	175	684
Future Volume (vph)	43	83	1250	11	175	684
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	190	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.850	0.999			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1292	3502	0	1787	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1292	3502	0	1787	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		90	1			
Link Speed (mph)	30		30			55
Link Distance (ft)	1237		685			1312
Travel Time (s)	28.1		15.6			16.3
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	25%	3%	2%	1%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	47	90	1359	12	190	743
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	90	1371	0	190	743
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Turn Type	Prot	Perm	NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases		8				
Detector Phase	8	8	2		1	6
Switch Phase						

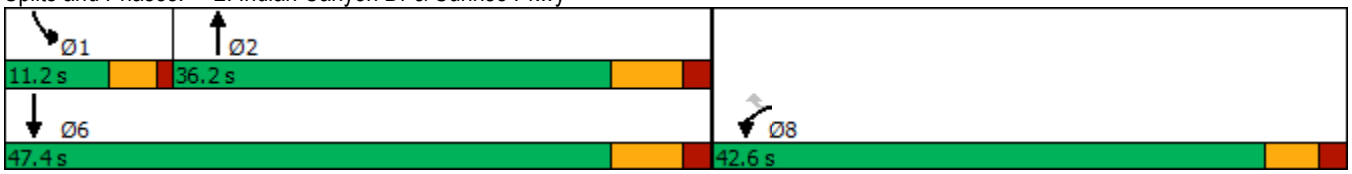


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Minimum Initial (s)	7.0	7.0	7.0		7.0	7.0
Minimum Split (s)	42.6	42.6	34.8		11.2	39.8
Total Split (s)	42.6	42.6	36.2		11.2	47.4
Total Split (%)	47.3%	47.3%	40.2%		12.4%	52.7%
Maximum Green (s)	37.0	37.0	29.4		7.0	40.6
Yellow Time (s)	3.6	3.6	4.8		3.2	4.8
All-Red Time (s)	2.0	2.0	2.0		1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.6	5.6	6.8		4.2	6.8
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	Min		None	Min
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Dont Walk (s)	30.0	30.0	21.0			26.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	7.6	7.6	32.3		7.0	44.8
Actuated g/C Ratio	0.12	0.12	0.53		0.11	0.73
v/c Ratio	0.21	0.38	0.74		0.93	0.29
Control Delay	26.3	11.5	15.7		78.7	4.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	26.3	11.5	15.7		78.7	4.1
LOS	C	B	B		E	A
Approach Delay	16.6		15.7			19.3
Approach LOS	B		B			B
90th %ile Green (s)	9.2	9.2	29.4		7.0	40.6
90th %ile Term Code	Gap	Gap	Max		Max	Hold
70th %ile Green (s)	7.7	7.7	29.4		7.0	40.6
70th %ile Term Code	Gap	Gap	Max		Max	Hold
50th %ile Green (s)	7.0	7.0	29.4		7.0	40.6
50th %ile Term Code	Min	Min	Max		Max	Hold
30th %ile Green (s)	7.0	7.0	29.4		7.0	40.6
30th %ile Term Code	Min	Min	Max		Max	Hold
10th %ile Green (s)	0.0	0.0	44.2		7.0	55.4
10th %ile Term Code	Skip	Skip	Dwell		Max	Dwell
Stops (vph)	40	22	925		142	224
Fuel Used(gal)	1	1	16		15	42
CO Emissions (g/hr)	61	78	1110		1047	2937
NOx Emissions (g/hr)	12	15	216		204	571
VOC Emissions (g/hr)	14	18	257		243	681
Dilemma Vehicles (#)	0	0	0		0	42
Queue Length 50th (ft)	16	0	202		69	46
Queue Length 95th (ft)	42	35	306		#183	76
Internal Link Dist (ft)	1157		605			1232
Turn Bay Length (ft)					190	
Base Capacity (vph)	1083	819	1854		205	2601

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.04	0.11	0.74		0.93	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 61			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 17.1		Intersection LOS: B	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			
90th %ile Actuated Cycle: 62.2			
70th %ile Actuated Cycle: 60.7			
50th %ile Actuated Cycle: 60			
30th %ile Actuated Cycle: 60			
10th %ile Actuated Cycle: 62.2			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

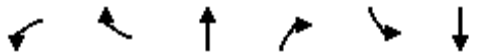
Splits and Phases: 2: Indian Canyon Dr & Sunrise Pkwy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	4	0	0	8	4	1328	1	0	855	5
Future Volume (veh/h)	8	0	4	0	0	8	4	1328	1	0	855	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1885	1885	1885	1885	1885	1841	1885	1885	1870	1885
Adj Flow Rate, veh/h	21	0	11	0	0	16	4	1383	1	0	940	5
Peak Hour Factor	0.38	0.92	0.38	0.92	0.92	0.50	0.92	0.96	0.92	0.92	0.91	0.92
Percent Heavy Veh, %	1	2	1	1	1	1	1	4	1	1	2	1
Cap, veh/h	95	0	85	0	54	46	14	1764	806	5	1374	618
Arrive On Green	0.05	0.00	0.05	0.00	0.00	0.03	0.01	0.50	0.50	0.00	0.39	0.39
Sat Flow, veh/h	1781	0	1598	0	1885	1598	1795	3497	1598	1795	3554	1598
Grp Volume(v), veh/h	21	0	11	0	0	16	4	1383	1	0	940	5
Grp Sat Flow(s),veh/h/ln	1781	0	1598	0	1885	1598	1795	1749	1598	1795	1777	1598
Q Serve(g_s), s	0.4	0.0	0.2	0.0	0.0	0.4	0.1	11.8	0.0	0.0	8.0	0.1
Cycle Q Clear(g_c), s	0.4	0.0	0.2	0.0	0.0	0.4	0.1	11.8	0.0	0.0	8.0	0.1
Prop In Lane	1.00		1.00	0.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	0	85	0	54	46	14	1764	806	5	1374	618
V/C Ratio(X)	0.22	0.00	0.13	0.00	0.00	0.35	0.29	0.78	0.00	0.00	0.68	0.01
Avail Cap(c_a), veh/h	344	0	308	0	364	308	347	1929	881	347	1960	881
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	0.0	16.4	0.0	0.0	17.3	17.9	7.4	4.5	0.0	9.3	6.8
Incr Delay (d2), s/veh	1.2	0.0	0.7	0.0	0.0	4.5	11.3	2.0	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.0	0.0	0.2	0.1	1.6	0.0	0.0	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	17.0	0.0	0.0	21.7	29.2	9.4	4.5	0.0	9.9	6.9
LnGrp LOS	B	A	B	A	A	C	C	A	A	A	A	A
Approach Vol, veh/h		32			16			1388			945	
Approach Delay, s/veh		17.4			21.7			9.4			9.9	
Approach LOS		B			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	24.3		6.4	4.3	20.0		5.5				
Change Period (Y+Rc), s	4.0	6.0		4.5	4.0	6.0		4.5				
Max Green Setting (Gmax), s	7.0	20.0		7.0	7.0	20.0		7.0				
Max Q Clear Time (g_c+I1), s	0.0	13.8		2.4	2.1	10.0		2.4				
Green Ext Time (p_c), s	0.0	4.1		0.0	0.0	4.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		9.8	
HCM 6th LOS		A	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	43	83	1250	11	175	684
Future Volume (veh/h)	43	83	1250	11	175	684
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1530	1856	1870	1885	1870
Adj Flow Rate, veh/h	47	90	1359	12	190	743
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	25	3	2	1	2
Cap, veh/h	198	143	1672	15	225	2372
Arrive On Green	0.11	0.11	0.47	0.47	0.13	0.67
Sat Flow, veh/h	1795	1296	3674	32	1795	3647
Grp Volume(v), veh/h	47	90	669	702	190	743
Grp Sat Flow(s),veh/h/ln	1795	1296	1763	1850	1795	1777
Q Serve(g_s), s	1.3	3.7	18.2	18.2	5.8	4.9
Cycle Q Clear(g_c), s	1.3	3.7	18.2	18.2	5.8	4.9
Prop In Lane	1.00	1.00		0.02	1.00	
Lane Grp Cap(c), veh/h	198	143	823	864	225	2372
V/C Ratio(X)	0.24	0.63	0.81	0.81	0.84	0.31
Avail Cap(c_a), veh/h	1190	859	928	974	225	2584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	23.7	12.8	12.8	23.9	3.9
Incr Delay (d2), s/veh	0.6	4.5	5.0	4.8	24.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.2	6.9	7.2	3.5	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.3	28.2	17.8	17.6	48.2	4.0
LnGrp LOS	C	C	B	B	D	A
Approach Vol, veh/h	137		1371			933
Approach Delay, s/veh	26.5		17.7			13.0
Approach LOS	C		B			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	11.2	32.9			44.1	11.8
Change Period (Y+Rc), s	* 4.2	6.8			6.8	5.6
Max Green Setting (Gmax), s	* 7	29.4			40.6	37.0
Max Q Clear Time (g_c+I1), s	7.8	20.2			6.9	5.7
Green Ext Time (p_c), s	0.0	5.9			4.8	0.4

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Appendix N: Design Year 2047 Build HCS Worksheets

HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/9/2023
Agency	MBI	Analysis Year	2023
Jurisdiction		Time Analyzed	Design 2047 Build AM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	769	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	429
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.20

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	7.2
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data

Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	1399	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	783
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.36

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	13.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	-		

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HCS Multilane Highway Report

Project Information

Analyst	AT	Date	6/9/2023
Agency	MBI	Analysis Year	2047
Jurisdiction		Time Analyzed	Design 2047 Build PM
Project Description	CVAG Flood & Blowsand	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	Northbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	1333	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	722
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.33

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	12.0
Median Type Adjustment (f_M)	-	Level of Service (LOS)	B
Access Point Density Adjustment (f_A)	-		

Direction 2 Geometric Data			
Direction 2	Southbound		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Measured	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	-	Grade Length, mi	-
Lane Width, ft	-	Access Point Density, pts/mi	-
Median Type	-	Left-Side Lateral Clearance (LC_R), ft	-
Free-Flow Speed (FFS), mi/h	60.0	Total Lateral Clearance (TLC), ft	-

Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity			
Volume (V) veh/h	859	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	476
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2200
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2200
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.22

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	-	Average Speed (S), mi/h	60.0
Total Lateral Clearance Adj. (f_{LLC})	-	Density (D), pc/mi/ln	7.9
Median Type Adjustment (f_M)	-	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	-		

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