APPENDIX TO THE INDIAN WELLS GENRAL PLAN UPDATE

PROGRAMMATIC DRAFT EIR

SCH# 2024071208

Applicant:

CITY OF INDIAN WELLS
44950 Eldorado Drive
Indian Wells, CA 92210

Lead Agency:

CITY OF INDIAN WELLS
44950 Eldorado Drive
Indian Wells, CA 92210

Preparer:

MSA CONSULTING INC.
34200 Bob Hope Drive
Rancho Mirage, California 92270

November 2024

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Appendix A

Notice of Preparation
Initial Study
Public Comment Letters

CITY OF INDIAN WELLS

PUBLIC NOTICE OF PREPARATION

INDIAN WELLS GENERAL PLAN UPDATE

PROGRAMMATIC DRAFT ENVIRONMENTAL IMPACT REPORT

LEAD AGENCY: City of Indian Wells
44-950 El Dorado Drive
Indian Wells, CA 92210

Contact Person: Jon Berg, Community Development Director
Phone Number: 760-776-0229

Project Location: South and east of the City of Palm Desert; West of the City of La Quinta; North of the Santa Rosa and San Jacinto National Monument, Riverside, California.

PROJECT DESCRIPTION: Notice is hereby given that the City of Indian Wells (City) will prepare an EIR for the Indian Wells General Plan Update (proposed project). Pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15206, the proposed project is considered a project of statewide, regional, or areawide significance. The City, acting as the lead agency, determined that the proposed project could result in potentially significant environmental impacts and that an Environmental Impact Report (EIR) is required. The City will prepare an EIR to address the potential environmental impacts associated with the proposed project at a programmatic level consistent with CEQA Guidelines Section 15168. The program-level EIR will evaluate the proposed project for potential impacts on the environment and analyze the proposed policies to determine the potential environmental consequences of future change. An evaluation of project alternatives that could reduce significant impacts will be included in the EIR.

Indian Wells is preparing a comprehensive update to the General Plan, which was adopted and updated at various times between 1988 and 2010. General plans are required by State law to guide land use and development, typically within a 20-year horizon. General plans must be periodically updated to respond to new State laws, changing conditions, and emerging issues and opportunities. The General Plan Update will address all State-required topics (land use, circulation, housing, open space, noise, safety, and conservation) and other topics of local importance, including community design, historic resources, sustainability, economic development, and public facilities. The General Plan will comprehensively cover the entire City boundary (see Figure 1) and provide additional guidance for potential future development. The

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City's updated General Plan will include goals, policies, and actions that set the long-term plan (blueprint) for potential future development in the City. The proposed project will build off the current General Plan and provide a framework for land use decisions, and direct future growth within Indian Wells through the year 2045.

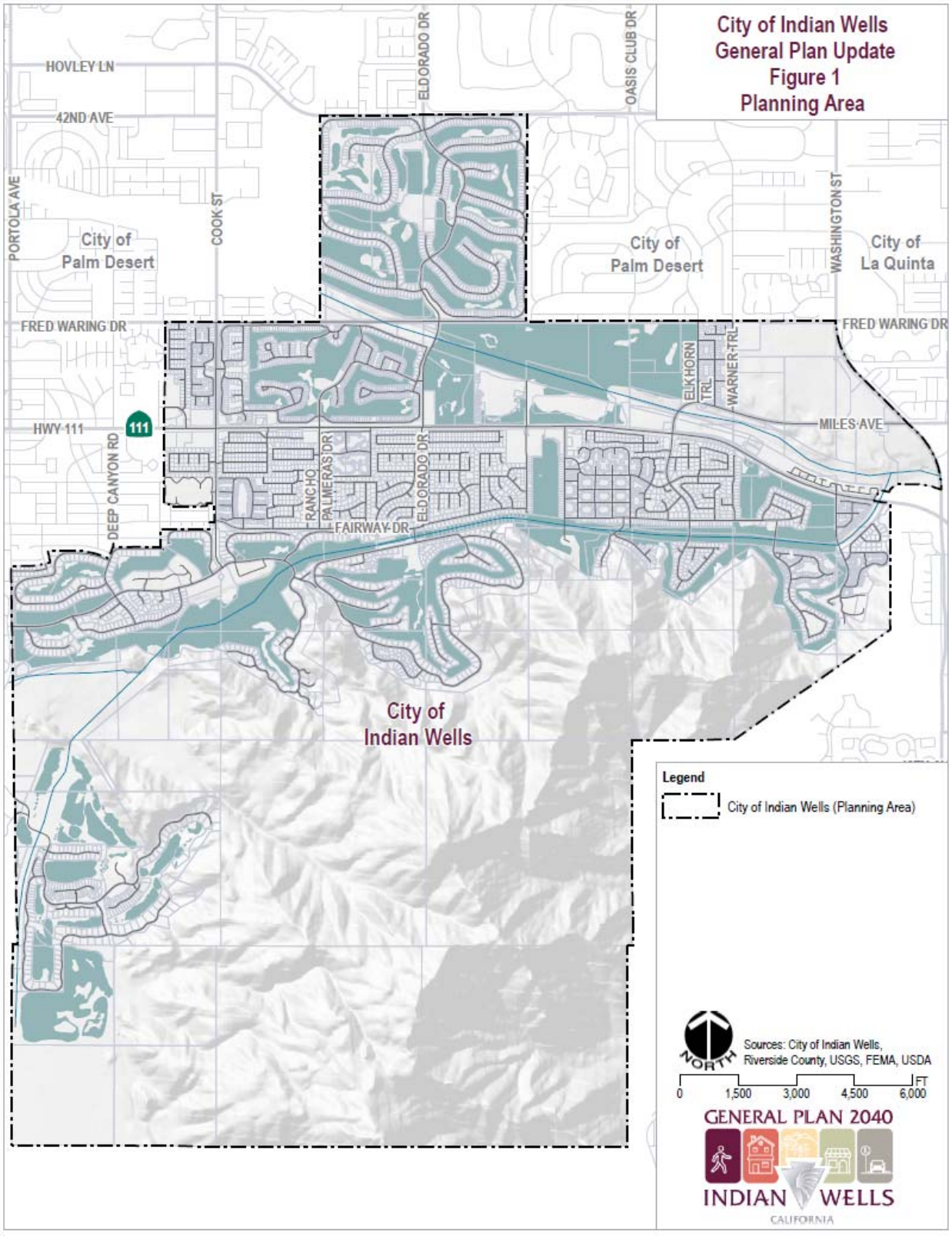
Environmental Review and Environmental Factors Potentially Affected. The Draft EIR (DEIR) will determine whether implementation of the proposed project may result in environmental impacts. The DEIR will address the proposed project's potential impacts in the following environmental topics: aesthetics, agricultural and forestry resources, air quality, biological resources, cultural and tribal cultural resources, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, population and housing, public services, recreation, transportation, and utilities and service systems.

PUBLIC REVIEW PERIOD: The City has prepared an Initial Study and is formally circulating a Notice of Preparation (NOP) to request comments and guidance on the scope and content of the DEIR from interested public agencies, organizations, and individuals. A 30-day public review period for the NOP will commence on **July 31, 2024**, and end at **5:00 p.m. on August 29, 2024**, for interested individuals and public agencies to submit written comments on the document. Any written comments on the Initial Study must be received at the above address within the public review period. In addition, you may email comments to the following address jberg@indianwells.com. Please include "General Plan Update Project EIR" as the subject. Public agencies providing comments are asked to include a contact person for the agency. If you submit comments on the scope of the DEIR, you will automatically be added to the City's distribution list for future notices and information about the environmental review process for the proposed project. If you do not wish to submit comments on the scope of the DEIR but would like to be added to the City's mailing list, you can submit your contact information, including email address with a request to be added to the mailing list.

Copies of the Initial Study are available for review at City Hall at the above address and on the City's website at https://www.cityofindianwells.org/city-hall/notices-bids and on the Governor's Office of Planning and Research CEQAnet Web Portal at https://ceqanet.opr.ca.gov/.

Jon Berg
Community Development Director

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CITY OF INDIAN WELLS
Community Development Department
44950 Eldorado Drive
Indian Wells, CA 92210
(760) 776-0229

ENVIRONMENTAL INITIAL STUDY

Project Title:	Indian Wells General Plan Update
Case No:	Environmental Assessment Case No. 2024-02
Lead Agency Name and Address:	City of Indian Wells Community Development Department 44950 Eldorado Drive Indian Wells, CA 92210
Applicant:	City of Indian Wells c/o Jon Berg, Community Development Director 44950 Eldorado Drive Indian Wells, CA 92210
Prepared By:	MSA Consulting, Inc. 34200 Bob Hope Drive Rancho Mirage, CA 92270 (760) 320-9811
Contact Person and Phone Number:	Jon Berg, Community Development Director Community Development Department (760) 776-0229
Project Location:	South and east of the City of Palm Desert; West of the City of La Quinta; North of the Santa Rosa and San Jacinto National Monument, Riverside, California

PROJECT DESCRIPTION

General Plan Update Location

The City of Indian Wells (City) occupies an area of roughly 15 square miles. Indian Wells is located in the Coachella Valley area of Riverside County, approximately 14 miles southeast of Palm Springs. Indian Wells is bounded by the City of Palm Desert to the north and west, by the City of La Quinta to the east, and by unincorporated areas of Riverside County to the north and south. Regional access to the City is provided by Interstate 10, a major east-west highway which provides access to Indian Wells and the Inland Empire region, which encompasses the cities in Riverside County, including those in the Coachella Valley, and San Bernardino County. State Route 74 provides access from the Coachella Valley and the San Diego metropolitan area via State Route 371 and 79.

Surrounding Properties

The Planning Area discussed throughout this environmental document encompasses the entire City of Indian Wells, which is generally surrounded by several local jurisdictions including the cities of Palm Desert to the north and west, La Quinta to the east, and Indio to the northeast, and unincorporated areas of Riverside County to the south and northeast. For the purpose of the General Plan Update and associated documents, the "Planning Area" is defined as the area encapsulating the City limits, over which the City exercises land use authority and provides public services. See Figure 1, *Regional Location Map,* for the location of Indian Wells in relation to the surrounding cities and Figure 2, *Planning Area,* for the boundary of Indian Wells. The following land uses are identified along common boundaries and areas near Indian Wells:

City of Palm Desert

- Conventional Suburban Neighborhood
- Golf Course & Resort Neighborhood
- Small Town Neighborhood
- Resort & Entertainment
- Suburban Retail Center
- Employment
- Public Facility/Institutional
- Open Space

City of La Quinta

- Low Density Residential
- Medium/High Density Residential
- General Commercial
- Tourist Commercial
- Open Space - Natural
- Open Space - Recreation

City of Indio

- Country Estates
- Equestrian Estates
- Residential – Low
- Residential – Medium
- Mixed Use (DA)
- Mixed Use (SP)
- Neighborhood Commercial
- Business Park

Unincorporated Riverside County

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Commercial Retail
- Open Space Recreation
- Open Space Rural
- Conservation Habitat

City History

The City of Indian Wells was incorporated in 1967. Prior to its incorporation, it was a Cahuilla Indian village in 1820. During the gold rush, Indian Wells became an important stop along the trail from Los Angeles to the desert gold mines. In the early 1900s, the date industry was established in the Indian Wells area and date palm ranches became profitable. Early prominent settlers established homesteads within Indian Wells and opened the first market and post office by 1915. The relatively high-water table in the Coachella Valley allowed the agricultural industry to develop. Fueled by the abundance of water, the area was soon converted from a primarily agricultural community to that of a golf resort destination with the area's first golf courses opening in the 1950s. Since then, Indian Wells has continued to grow, with the development of resort hotels, golf courses, and luxury residential communities, and has maintained its residential-resort lifestyle. Indicative of the residential-resort lifestyle, more than half of the residential base of Indian Wells consists of seasonal and part-time residents.

Existing Development (Baseline Conditions)

The current General Plan land use designations (described in detail below) identify the long-term planned use of land. The Riverside County Assessor's office maintains a database of existing "on-the-ground" land uses on individual parcels, including the number of dwelling units and related improvements such as non-residential building square footage. Approximately 9,146 acres, out of 9,333 total acres in the City are developed, or currently under construction. While approximately 187 acres are vacant.

There are 9,333 acres within the Planning Area. Table 1 below indicates the existing uses within the Planning Area. Currently, approximately 6,395 acres are developed as open space, parks and golf course uses, 1,403 acres are developed as residential uses, and approximately 187 acres are vacant. Figure 3 also illustrates the existing uses within the Planning Area. These are considered the baseline conditions.

The City currently includes 4,694 single family units and 349 multifamily units, for a total of 5,043 residential units; 1,546,833 square feet of nonresidential space (i.e., office, sports, commercial, etc.); and offers 1,509 jobs within the City.

Table 1 Existing Development within Indian Wells

Existing Uses	Acres
Commercial	158
Natural Preserve	155
OS, Parks, Golf	6,395
Public Facilities	22
Residential Attached	211
Residential Detached	1,193
Residential/Watercourse Interface	19
Sports Complex	63
Streets	515
Utility/Maintenance Lot	22
Vacant	187
Watercourses, Drainage Channels	391
Total	**9,333**

Current General Plan

The state of California requires every city and county in California to adopt a General Plan, which is the local government's long-term blueprint "for the physical development of the city and any land outside its boundaries that bears relation to its planning." The General Plan represents the community's view of its future and expresses the long-term growth and development goals. It addresses issues that impact the entire city, such as how land is used, where buildings are built, the locations of roads and parks, safety, noise, and more.

The General Plan contains the goals and policies upon which the City Council and Planning Commission will base their future land use decisions. All city plans, zoning, and private development must be consistent with the policies in the General Plan.

The City's General Plan was last comprehensively updated in 1996 and has been amended periodically since that time. The Housing Element was updated in 2013 (5th Cycle), and again in 2024, (6th Cycle) as required by State Housing Law.

Figure 4 shows a map of the current General Plan land use designations in the Planning Area. Per the current General Plan Land Use Map, Indian Wells is dominated by large areas of open space, including open space used for golf and recreation, and by low density residential development. Resorts and sports complexes are also prominent in the City. The Table 2 below lists the parcel specific acreage for current land uses within the Planning Area. Of the designated land uses, the largest land use designation within the Planning Area is Open Space, with 4,320 acres of land designated for this use. There is also a significant amount of land designated as Very Low Density Residential (2,306 acres).

Buildout of the current General Plan would result in 5,455 single family units and 816 multifamily units, for a total of 6,271 residential units; 5,132,104 square feet of nonresidential space; and 6,217 jobs.

Table 2 Current General Plan Designations

Current General Plan Designation	Acres
Civic, Public Facility	29
Commercial, Community Commercial	88
Commercial, Professional Office	7
Commercial, Resort Commercial	185
Commercial, Sports Complex	63
Low Density Residential	162
Medium Density Residential	46
Medium High Density Residential	18
Open Space, Golf and Recreation	1,317
Open Space, Natural Preserve	195
Open Space, Open Space	4,320
Open Space, Public Benefit (PB-1)	34
Open Space, Public Park	6
Open Space, Watercourse	557
Residential, Very Low Density Residential	2,306
Total	**9,333**

Proposed Project

The City of Indian Wells is proposing a comprehensive General Plan Update (i.e., the "project"). New policies are proposed that emphasize maintaining its tranquil and luxurious resort environment, promoting fiscal resiliency, and creating a sustainable and resident future for current and future residents. The General Plan Update (GPU) addresses land use, mobility, open space, conservation, safety, noise, and economic development. The GPU will be organized into six elements: Land Use, Mobility, Resource Management, Public Safety, Economic Development, and Housing. As previously noted, the City's Housing Element has been updated and adopted by the City Council in 2022.

The General Plan Update includes an update to the City's Land Use Map (see Figure 5). It proposes to change the current land use designation of two locations, as indicated in Table 3 below.

Table 3 Changes to the General Plan Land Use

Location	APN	Existing Use	Current Land Use Designation	Proposed Land Use Designation (GPU)
1	633-150-077 & 633-150-071	Golf Course	Golf and Recreation	Resort Commercial
2	633-310-035 & 633-410-051	Vacant	Community Commercial	Resort Commercial

In addition, the General Plan Update proposes changes to the Whitewater River Channel consistent with ongoing efforts to improve the Channel. Specifically, approximately 6.82 acres of the Whitewater River Channel will be removed from designation as part of the storm channel and added to the designation of developable acreage for resort commercial uses utilizing approved channel re-design. The improvements will include engineered fill material and new slope protection on the southern slope of the Channel in the vicinity of Miles Avenue.

Buildout of the proposed General Plan Update would result in 5,455 single family units and 816 multifamily units, for a total of 6,271 residential units (consistent with the current General Plan); 5,159,667 square feet of nonresidential space (27,563 more square feet than the current General Plan); and 6,310 jobs (93 more jobs than the current General Plan).

Project Objectives

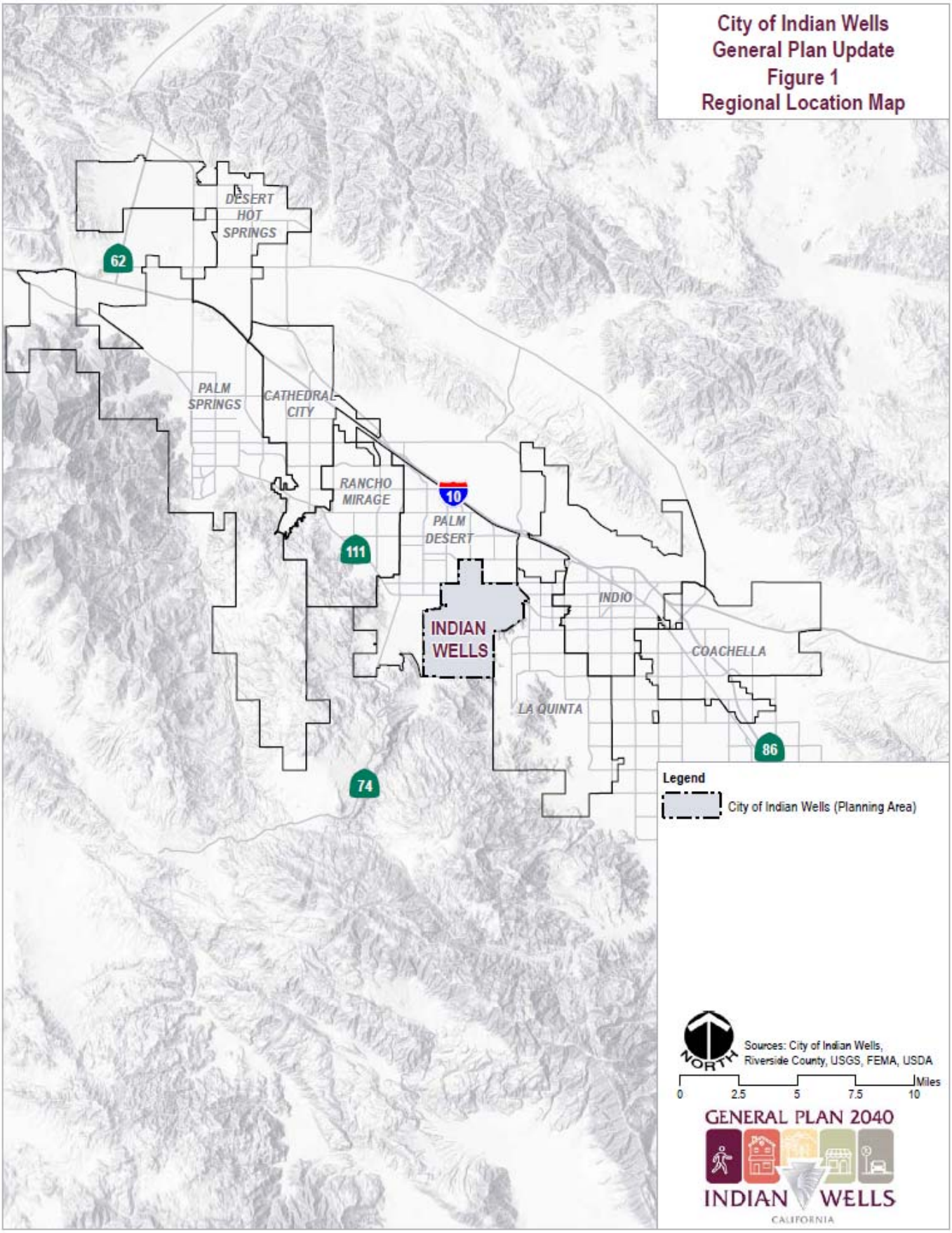
The following objectives form the physical, economic, and environmental framework upon which the General Plan Update is built:

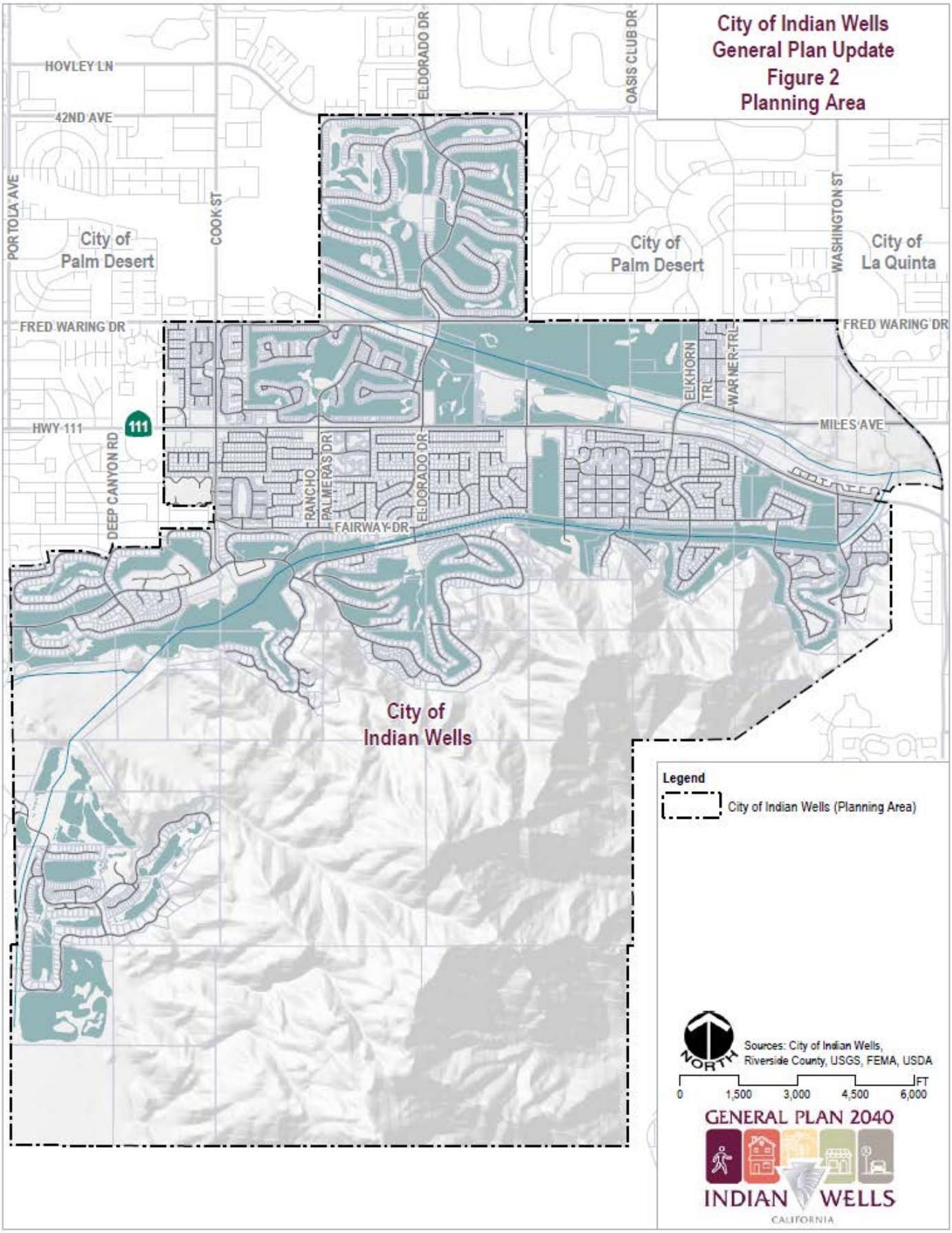
- Maintain the City's residential-resort lifestyle.
- Accommodate a range of land uses (commercial, residential, open space, and public uses).
- Maintain adequate sites to accommodate the City's Regional Housing Needs Allocation (RHNA).
- Develop a diverse set of land uses including employment-generating land uses that create new jobs and ensure long-term economic benefits and stability for the City of Indian Wells.
- Promote the development of a connected community that is enhanced by sidewalks, shade from trees, pedestrian benches, safe pedestrian crossings, and landscaping along streets, and providing buffers between surrounding uses.
- Encourage the development of a multimodal circulation network that provides a safe and efficient level of connectivity for vehicles, bicyclists, pedestrians, and transit users.

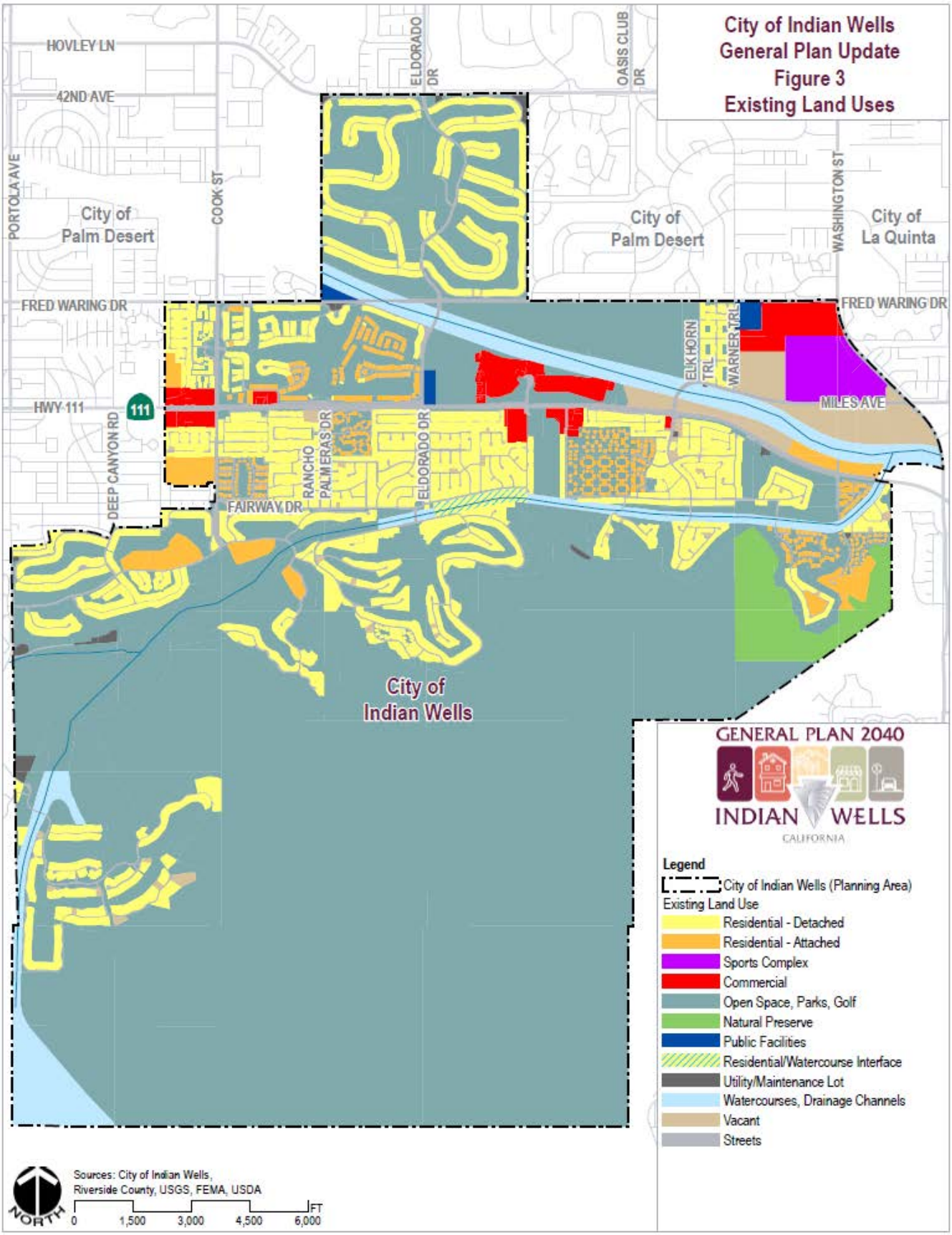
- Provide adequate infrastructure, services, and utilities to meet the needs of the community by requiring new developments to pay their fair share for required improvements.

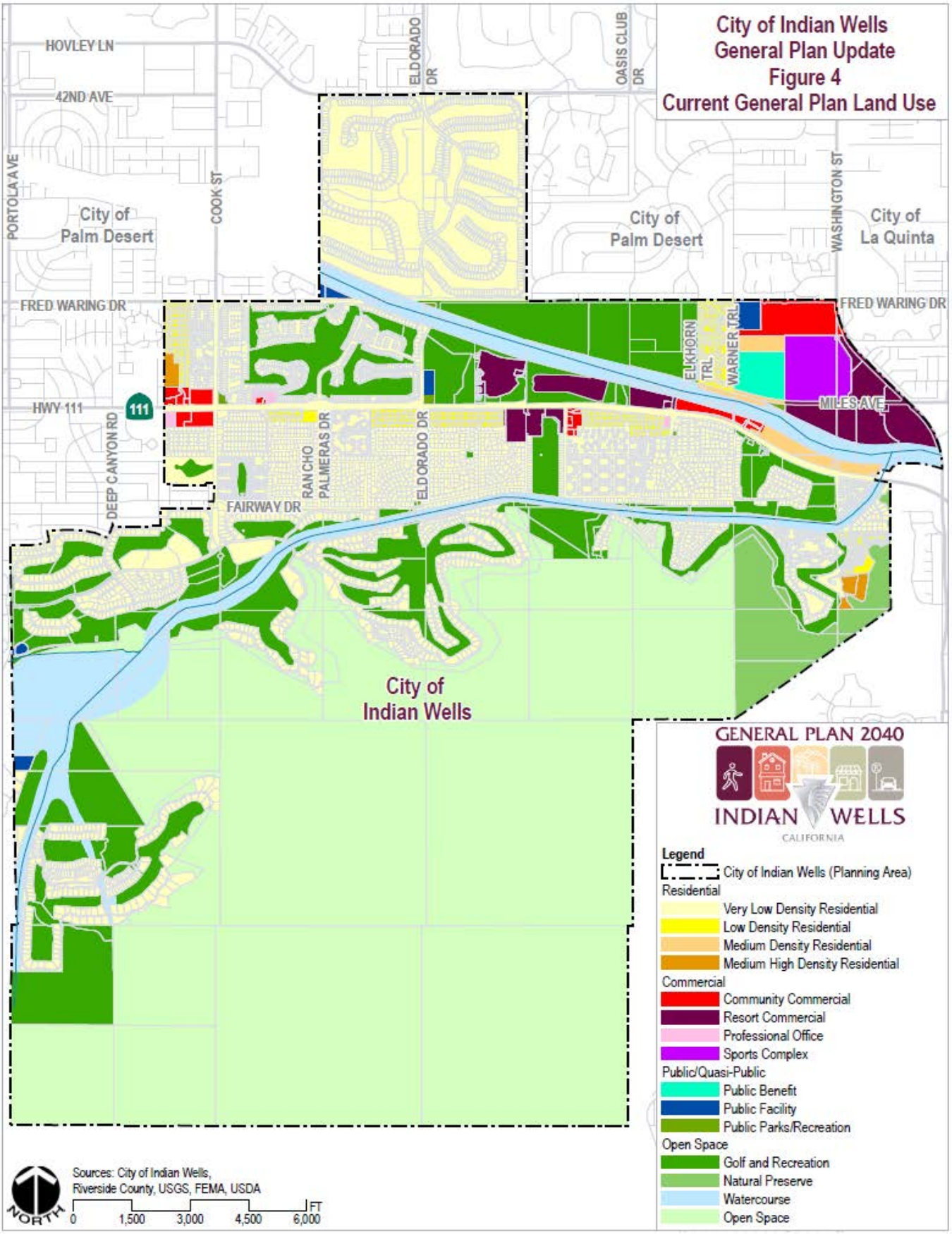
Other public agencies whose approval is required:

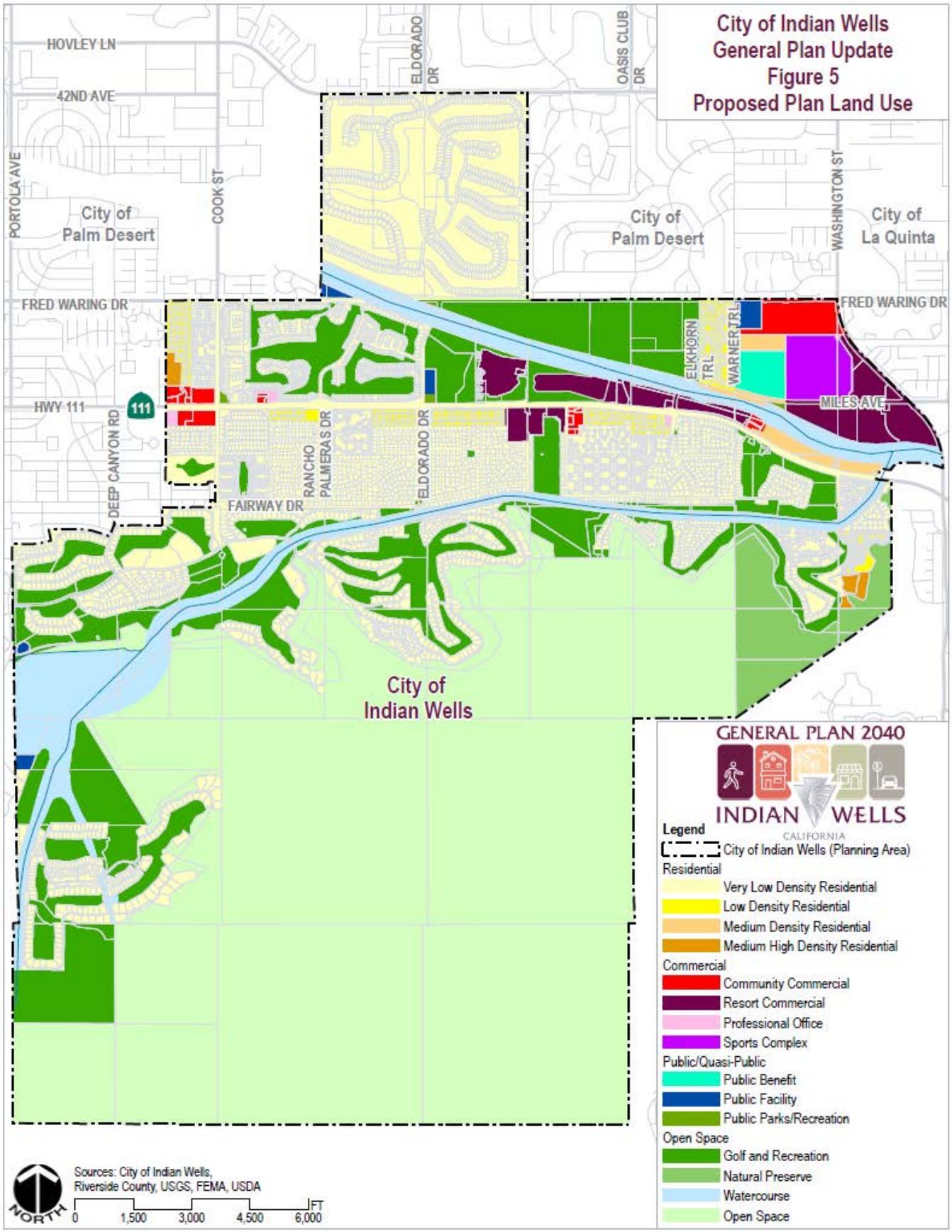
None


City of Indian Wells
General Plan Update
Figure 1
Regional Location Map
DESERT HOT SPRINGS
62
PALM SPRINGS
CATHEDRAL CITY
RANCHO MIRAGE
10
PALM DESERT
111
INDIO
INDIAN WELLS
COACHELLA
LA QUINTA
86
74
Legend
City of Indian Wells (Planning Area)
NORTH
Sources: City of Indian Wells, Riverside County, USGS, FEMA, USDA
0
2.5
5
7.5
10
Miles
GENERAL PLAN 2040
INDIAN WELLS
CALIFORNIA


City of Indian Wells
General Plan Update
Figure 2
Planning Area
HOVLEY LN
42ND AVE
PORTOLA AVE
COOK ST
ELDORADO DR
OASIS CLUB DR
WASHINGTON ST
City of Palm Desert
City of Palm Desert
City of La Quinta
FRED WARING DR
FRED WARING DR
HWY 111
111
DEEP CANYON RD
RANCHO PALMERAS DR
ELDORADO DR
FAIRWAY DR
ELKHORN TRL
WARNER TRL
MILES AVE
City of Indian Wells
Legend
City of Indian Wells (Planning Area)
NORTH
Sources: City of Indian Wells, Riverside County, USGS, FEMA, USDA
0
1,500
3,000
4,500
6,000
FT
GENERAL PLAN 2040
INDIAN WELLS
CALIFORNIA


City of Indian Wells
General Plan Update
Figure 3
Existing Land Uses
HOVLEY LN
42ND AVE
PORTOLA AVE
COOK ST
ELDORADO DR
OASIS CLUB DR
WASHINGTON ST
City of Palm Desert
City of Palm Desert
City of La Quinta
FRED WARING DR
FRED WARING DR
HWY 111
111
DEEP CANYON RD
RANCHO PALMERAS DR
ELDORADO DR
FAIRWAY DR
ELK HORN TRL
WARNER TRL
MILES AVE
City of Indian Wells
GENERAL PLAN 2040
INDIAN WELLS
CALIFORNIA
Legend
City of Indian Wells (Planning Area)
Existing Land Use
Residential - Detached
Residential - Attached
Sports Complex
Commercial
Open Space, Parks, Golf
Natural Preserve
Public Facilities
Residential/Watercourse Interface
Utility/Maintenance Lot
Watercourses, Drainage Channels
Vacant
Streets
NORTH
Sources: City of Indian Wells, Riverside County, USGS, FEMA, USDA
0
1,500
3,000
4,500
6,000
FT


City of Indian Wells
General Plan Update
Figure 4
Current General Plan Land Use
HOVLEY LN
42ND AVE
PORTOLA AVE
COOK ST
ELDORADO DR
OASIS CLUB DR
WASHINGTON ST
City of Palm Desert
City of Palm Desert
City of La Quinta
FRED WARING DR
FRED WARING DR
HWY 111
111
DEEP CANYON RD
RANCHO PALMERAS DR
ELDORADO DR
FAIRWAY DR
ELKHORN TRL
WARNER TRL
MILES AVE
City of Indian Wells
GENERAL PLAN 2040
INDIAN WELLS
CALIFORNIA
Legend
City of Indian Wells (Planning Area)
Residential
Very Low Density Residential
Low Density Residential
Medium Density Residential
Medium High Density Residential
Commercial
Community Commercial
Resort Commercial
Professional Office
Sports Complex
Public/Quasi-Public
Public Benefit
Public Facility
Public Parks/Recreation
Open Space
Golf and Recreation
Natural Preserve
Watercourse
Open Space
Sources: City of Indian Wells, Riverside County, USGS, FEMA, USDA
NORTH
0
1,500
3,000
4,500
6,000
FT


City of Indian Wells
General Plan Update
Figure 5
Proposed Plan Land Use
HOVLEY LN
42ND AVE
PORTOLA AVE
COOK ST
ELDORADO DR
OASIS CLUB DR
WASHINGTON ST
City of Palm Desert
City of Palm Desert
City of La Quinta
FRED WARING DR
FRED WARING DR
ELKHORN TRL
WARNER TRL
MILES AVE
HWY 111
111
DEEP CANYON RD
RANCHO PALMERAS DR
ELDORADO DR
FAIRWAY DR
City of Indian Wells
GENERAL PLAN 2040
INDIAN WELLS
CALIFORNIA
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City of Indian Wells (Planning Area)
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Low Density Residential
Medium Density Residential
Medium High Density Residential
Commercial
Community Commercial
Resort Commercial
Professional Office
Sports Complex
Public/Quasi-Public
Public Benefit
Public Facility
Public Parks/Recreation
Open Space
Golf and Recreation
Natural Preserve
Watercourse
Open Space
Sources: City of Indian Wells, Riverside County, USGS, FEMA, USDA
NORTH
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EVALUATION OF ENVIRONMENTAL IMPACTS:

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION: (To be completed by the Lead Agency)
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: City of Indian Wells	7/23/2024 Date:

Environmental Checklist and Discussion:

The following checklist evaluates the proposed project's potential adverse impacts. For those environmental topics for which a potential adverse impact may exist, a discussion of the existing site environment related to the topic is presented followed by an analysis of the project's potential adverse impacts. When the project does not have any potential for adverse impacts for an environmental topic, the reasons why there are no potential adverse impacts are described.

1. AESTHETICS -- Would the project**:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐

a) **Potentially Significant Impact.** Scenic vistas within the City include the surrounding mountains, including the Santa Rosa Mountains which delineates the City's southern boundary. The City's location on the valley floor and adjacent to the Santa Rosa Mountains allow various views of the surrounding landforms. Although there are no adopted or proposed designated scenic views, scenic corridors, or vista points within the City, the scenic vistas can be viewed from public streets (i.e., neighborhood streets or Highway 111), public property, and private property.

The City of Indian Wells is largely developed. Remaining vacant lots within the City are primarily located along Highway 111 and Miles Avenue. Future development in accordance with the General Plan Update would allow for development of currently undeveloped parcels, which have the potential to impact scenic vistas in Indian Wells. The PDEIR will analyze the General Plan Update's impacts to scenic vistas as a result of the buildout of the City.

b) **Potentially Significant Impact.** The General Plan Update occupies the entirety of Indian Wells. According to the California Scenic Highway Mapping System of the California Department of Transportation (Caltrans), there are no state-designated scenic highways in or near the City of Indian Wells. State Route 74 in Palm Desert is the closest eligible scenic route. Historic buildings are found within the City and scenic tree resources may be found within the City as well. Potential impacts to these scenic resources will be further analyzed in the PDEIR.

c) **Potentially Significant Impact.** Although the City is largely built out and developed with buildings, recreational areas, street improvements, and infrastructure, future development in accordance with the General Plan Update has the potential to impact the overall visual character of Indian Wells, particularly its vacant and undeveloped areas primarily located along Highway 111 and Miles Avenue. Thus, impacts to the scenic quality are potentially significant. Potential impact to the scenic quality will be further analyzed in the PDEIR.

d) **Potentially Significant Impact.** As previously stated, the City of Indian Wells is largely developed with buildings, streets, and infrastructure. The existing residential communities, commercial and resort areas (i.e., parking lots, businesses), streetlights, traffic signals, and signage throughout the City currently contribute to daytime and nighttime lighting. Vehicular traffic throughout the public and private streets also contributes to the daytime and nighttime light. The City is largely developed, with approximately 187 vacant acres available for future development. The development of the vacant areas will result in increased nighttime lighting within the City. Therefore, the PDEIR will analyze the impact of light and glare generated by the development of the GPU.

2. 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. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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, timberland, or timberland zoned Timberland Production?	☐	☐	☐	☒
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?	☒	☐	☐	☐

a) **Potentially Significant Impacts.** According to the 2022 California Farmland Mapping and Monitoring Program data, a majority of the City is comprised of Urban and Built-Up Land. Urban and Built-Up Land is occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures. The City also contains Other Land which comprises of the mountain range in the southern portion of the City as well as portions of the Coachella Valley Stormwater Channel. Other Land is land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities. Additionally, there is approximately 43 acres of Prime Farmland off Miles Avenue and Washington Street. Prime Farmland is irrigated land with the best combination of physical and chemical features able to sustain long term production of agricultural crops. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for production of irrigated crops at some time during the four years prior to the mapping date. The approximately 43 acres of Prime Farmland is currently a sod farm.

According to the GPU Land Use/Zoning Map, the sod farm is zoned for commercial use. In the GPU, conversion of the sod farm is not anticipated. The significance of the conversion of the site to nonagricultural use will be evaluated in the EIR.

b) **No Impact.** According to the California Department of Conversion California Williamson Act Enrollment Finder, there is no land within the City that is designated under the Williamson Act. Additionally, zoning for agricultural use does not occur within the City. The implementation of the GPU will not impact or remove land from the City or County's agricultural zoning or agricultural preserve. Therefore, no impacts are expected, and further study is not required in the EIR.

c) **No Impact.** The City of Indian Wells does not have land designated as forest land, timberland, or timberland zoned Timberland Production within the City boundaries. Additionally, these activities do not occur within

the City or the Coachella Valley. No impacts are anticipated, and further study is not required in the EIR.

d) **No Impact.** As stated in discussion c), above, no forest land occurs in the City or in the surrounding area because forest vegetation is not characteristic of the Coachella Valley desert environment. No impacts are expected, and further study is not required in the EIR.

e) **Potentially Significant Impact.** As previously described, the City includes approximately 43 acres of farmland located off Miles Avenue and Washington Street that is currently zoned for commercial use. The GPU does not discuss the conversion of the farmland, but it can be assumed that the farmland could be converted to nonagricultural uses according to the zoning of the land. There is no other farmland within the City. The significance of the conversion of the site to nonagricultural use will be evaluated in the EIR.

3. AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐

a) **Potentially Significant Impact.** The City of Indian Wells and its Coachella Valley regional context are situated within the Riverside County portion of the Salton Sea Air Basin (SSAB), under jurisdiction of the South Coast Air Quality Management District (SCAQMD). Existing air quality in relation to the applicable air quality standards for criteria air pollutants is measured at established air quality monitoring stations throughout the SCAQMD jurisdiction. The three permanent monitoring stations in the Coachella Valley are located in Palm Springs (AQS ID 060655001), Indio (AQS ID 060652002), and Mecca (Saul Martinez - AQS ID 060652005).

To comply with the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS), SCAQMD has adopted an Air Quality Management Plan (AQMP), which is updated regularly with strategies to effectively reduce emissions, accommodate growth, and minimize any negative fiscal impacts of air pollution control on the economy. The most current version of the AQMP (2022 AQMP) was adopted in December 2022 to continue serving as a regional blueprint for achieving the federal air quality standards. The 2022 AQMP includes the most current strategies to meet the air quality standards and ensure that public health is protected to the maximum extent feasible. It also includes a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. Moreover, the 2022 AQMP provides guidance for the State Implementation Plans (SIP) for attainment of the applicable ambient air quality standards.

Furthermore, the Coachella Valley is currently designated as a serious nonattainment area for PM10 (particulate matter with an aerodynamic diameter of 10 microns or less). The U.S. EPA-approved Coachella Valley PM10 State Implementation Plan is in place with an attainment strategy for meeting the PM10 standard. Some of the existing measures include the requirement of detailed dust control plans from builders that specify the use of more aggressive and frequent watering, soil stabilization, wind screens, and phased development to minimize fugitive dust. Appropriate air quality measures to prevent fugitive dust are required by the City's Fugitive Dust Control ordinance and plan implementation requirements, which are consistent with SCAQMD Rules 403 and 403.1 that apply to the Coachella Valley strategy for reducing fugitive dust emissions.

The General Plan Update will involve the buildout of the City, which will include residential, commercial, and open space uses. Future projects within the City will be subject to the rules and guidelines under the 2022 AQMP and the applicable State Implementation Plan for PM10 and Ozone. The Air Quality Study quantitative findings will help determine whether the GPU's emission levels will exceed any of the applicable thresholds and whether those levels have the potential to obstruct the attainment efforts of the 2022 AQMP. The PDEIR will further elaborate on the GPU's compliance with the applicable air quality

plan and level of significance. The PDEIR will rely on the Air Quality Study results to compare the project-related emissions against the established regional and localized thresholds. The findings of significance pertaining to compliance with the AQMP and other relevant air quality plans will be disclosed in that evaluation.

b) **Potentially Significant Impact.** The Coachella Valley portion of the Salton Sea Air Basin (SSAB) is in nonattainment for the 1997 8-hour ozone standard and PM10 standard. The attainment status of each standard is summarized below.

Particulate Matter (PM10):

The Coachella Valley is currently designated as a serious nonattainment area for PM10 (particulate matter with an aerodynamic diameter of 10 microns or less). Man-made sources of PM10 are attributed to direct emissions, industrial facilities, and fugitive dust resulting from unpaved roads and construction operations. High-wind natural events are also known contributors of PM10. The Air Quality Study for this project will quantify the potential construction and operational PM10 emission levels resulting from the project to determine compliance and feasible mitigation, as necessary.

Ozone and Ozone Precursors:

Furthermore, the Coachella Valley portion of the Salton Sea Air Basin (SSAB) is deemed to be in nonattainment for the 1997 8-hour ozone standard. Coachella Valley is unique in its geography due to its location downwind from the South Coast Air Basin (SCAB). As such, when high levels of nitrogen oxides (NOx), volatile organic compounds (VOCs) and ozone are produced in the South Coast Air Basin, they are transported to the Coachella Valley. The 2022 AQMP has found and established that the Coachella Valley does not have large sources of smog-forming emissions and therefore, local sources of air pollution have a limited impact on ozone levels compared to the transport of ozone precursors generated upwind in the SCAB. Based on the 2022 AQMP, the attainment date for the said ozone standard is August 2033. The Air Quality Study for the GPU will quantify the potential construction and operational ozone precursor emission levels resulting from City buildout to determine compliance and feasible mitigation, as necessary.

c) **Potentially Significant Impact.** A sensitive receptor is a person in the population who is particularly susceptible (i.e., more susceptible than the population at large) to health effects due to exposure to an air contaminant. Sensitive receptors and the facilities that house them are of particular concern if they are located in close proximity to localized sources of carbon monoxide, toxic air contaminants, or odors. Land uses considered by the SCAQMD to be sensitive receptors include residences, long-term health care facilities, schools, rehabilitation centers, playgrounds, convalescent centers, childcare centers, retirement homes, and athletic facilities.

The General Plan Update consists of undeveloped land. The PDEIR will analyze in further detail the location of the nearest sensitive receptors and will provide a Localized Significance Threshold (LST) analysis, as applicable, per the SCAQMD methodology.

d) **Potentially Significant Impact.** As previously introduced, buildout of the GPU may impact residential uses and other land uses that may be considered sensitive receptors in substantial numbers throughout the City. The PDEIR will analyze the project's potential impacts involving emissions (such as those leading to odors) relevant to adverse impacts on a population.

4. **BIOLOGICAL RESOURCES** -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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, and 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?	☐	☐	☐	☒

a) **Potentially Significant Impact**. The City of Indian Wells is almost fully developed, thus the natural biological resources in most areas have been lost. Most of the remaining undeveloped biological resources are confined to the Santa Rosa Mountains in the southern portion of the City. Most native vegetation found in the City is also located in the southern portions of the City in the Santa Rosa and San Jacinto Conversation Area of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

Undeveloped land throughout the City could contain vegetation such as patches of Sonoran desert creosote bush scrub, desert saltbush scrub, Sonoran mixed woody and succulent scrub, mesquite hummocks, and various types of stabilized desert sand fields. The presence of these plant communities could provide habitat for desert plant and wildlife. Future development under the General Plan Update may impact sensitive species habitats. The PDEIR will evaluate sensitive species, current regulatory requirements, and potential impacts to sensitive species and habitat.

b) **Potentially Significant Impact**. In the City, riparian habitats could exist between Cook Street and Washington Street inside the Coachella Valley Stormwater Channel. Narrow bands of desert riparian areas consisting of desert dry wash woodland, tamarisk scrub, Sonoran cottonwood-willow riparian forest, and coastal/valley freshwater marsh occur along the desert washes and drainages, adding additional diversity to the desert habitats of the remaining natural lots. The PDEIR will analyze whether the GPU would affect any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

c) **No Impact.** The City does not contain federally protected wetlands, marshes, or other natural drainage features. There is the Coachella Valley Stormwater Channel and Deep Canyon Stormwater Channel in the City. The Coachella Valley Stormwater Channel is managed by the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). Management of this wash includes implementing all the Conservation Objectives and Required Measures delineated in the CVMSHCP and implementing permit conditions that pertain to the Valley Floor Reserve Management Unit, guiding the management of the wash. As a result, implementation of the GPU would not result in the direct removal, filling, or other hydrological interruption to any of these resources. No impacts are expected, and no further analysis is needed.

d) **No Impact.** The City does not act as a wildlife movement corridor due to the current built environment as well as the presence of urban/suburban development encompassing much of the City. Any development occurring from the GPU shall comply with the CVMSHCP through the payment of mitigation fees required by new developments. Additionally, development in the City is required to follow Policy IIIA.4.2 set forth by the City. Policy IIIA.4.2 requires development proposals to identify significant biological resources and provide mitigation including the use of adequate buffering, selective preservation, the provision of replaceable habitats, the use of sensitive site planning techniques, and other appropriate measures. Both of these required measures would ensure that there would be no impact on the movement of any native resident or migratory species or with established native resident or migratory wildlife corridors or impede on the use of native wildlife nursery sites. No impacts are expected, and no further analysis is needed.

e) **No Impact.** The City lies within the boundary of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) which outlines policies for conservation habitats and natural communities and is implemented by the City of Indian Wells. There are no other unique local policies or ordinances protecting biological resources that would cause a conflict. Any development occurring from the GPU shall comply with the CVMSHCP through the payment of mitigation fees required by new developments within the City. No impacts are expected; therefore, no further analysis is required.

f) **No Impact.** As discussed above, the City of Indian Wells is a participant of the CVMSHCP. This plan outlines policies for conservation habitats and natural communities and is implemented by the City of Indian Wells. The southern portion of the City is included in the Santa Rosa and San Jacinto Mountains Conservation Area; however, no development is proposed in the Conservation Area. No impacts are expected, and no further analysis is needed.

5. CULTURAL RESOURCES -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as 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 formal cemeteries?	☐	☐	☒	☐

a) **Potentially Significant Impact.** The City of Indian Wells is almost fully developed, and most of the remaining undeveloped biological resources are confined to the Santa Rosa Mountains in the southern portion of the City. There are undeveloped parcels in the City that could contain unknown historical and archeological resources which have not yet been discovered. A cultural resources study will be conducted for the City to determine whether historical resources exist onsite. The PDEIR will discuss the findings of the cultural resources study and provide mitigation measures, if necessary

b) **Potentially Significant Impact.** The City consists of mostly Quaternary alluvium, lake, dune sand, and Pleistocene nonmarine deposits, with Mesozoic granitic rocks along the Santa Rosa Mountains, which encompass the southern portion of the City.

The project could occur in a highly sensitive area based on local historical data of the Coachella Valley. At elevations ranging roughly between 5 and 25 feet above mean sea level, the project area lies near the former shoreline of Holocene Lake Cahuilla, an ancient freshwater lake that repeatedly filled the Coachella Valley between 900 and the 1730s A.D. Over the centuries, the inundation and desiccation of Holocene Lake Cahuilla greatly influenced all aspects of local Native lifeways. Because of its location near the shoreline to this now-vanished freshwater lake, the area around the project area would have provided a highly favorable setting for Native American habitation prior to the 18th century. The PDEIR will discuss the findings of the cultural resources study and the possible impacts to archeological resources from the implementation of the GPU and provide mitigation measures if necessary.

c) **Less than Significant Impact**. As described above, implementation of the GPU could occur in a highly sensitive area, and ground disturbing activities could result in the identification of additional resources, including cremations. Pursuant to the California Health and Safety Code Section 7050.5, and the CEQA Guidelines Section 15064.5, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. If the coroner determines the remains to be Native American or has reason to believe that they are those of Native American, the coroner shall contact the Native American Heritage Commission within 24-hours. Compliance with the California Health and Safety Code shall ensure that proper actions shall be taken in the event of a discovery or recognition of any human remains during project construction activities. Compliance with State law provisions is mandatory and would ensure impacts to human remains are less than significant. The PDEIR will provide further discussion of the discovery of human remains onsite.

6. ENERGY – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐

a) **Potentially Significant Impact.** The City of Indian Wells is largely developed with residential use, commercial uses, resort facilities, and infrastructure. The uses within the City consume energy in the form of electricity, natural gas, and petroleum. Imperial Irrigation District (IID) and Southern California Edison (SCE) provides electricity to the City, while the Southern California Gas Company (SoCal Gas) provides natural gas. The GPU will result in the buildout of the City, which includes approximately 187 vacant acres. The buildout of the General Plan area will result in the increased consumption of energy resources. Therefore, the DEIR will analyze whether the GPU would result in the wasteful, inefficient, or unnecessary consumption of energy resources.

b) **Potentially Significant Impact**. State and local plans have been established to set goals and guidelines to enforce the implementation of energy efficient building materials and features. The General Plan Update will be analyzed in the PDEIR for compliance and consistency with state or local plans for renewable energy or energy efficiency to determine project impacts.

7. GEOLOGY AND SOILS -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐

a) i. **Potentially Significant Impact.** The City of Indian Wells, similar to most of Southern California, is susceptible to earthquakes due to the active faults that traverse the Coachella Valley. The potential for ground rupture due to fault movement is commonly related to the seismic activity of known fault zones. There are three major faults in Riverside County: the San Andreas, San Jacinto, and Elsinore faults. The Alquist-Priolo Earthquake Fault Zone encompasses the San Andreas fault. Under the Alquist-Priolo Earthquake Fault Zoning Act, the location of structures for human occupancy across the surface trace of an active fault is restricted. Although no known active or inactive faults traverse through the project site, due to the various faults in the region, seismic-related rupture at the project property will be analyzed in further detail in the PDEIR. An analysis of the project's location to the closest Alquist-Priolo Earthquake Fault Zone will also be included in the PDEIR. This analysis will consult state, regional and local resources and maps of existing faults in relation to the project.

ii. **Potentially Significant Impact.** Seismically induced ground shaking is anticipated throughout the entire Coachella Valley due to the multiple faults that traverse the region, which are capable of causing damage to the City. All three faults in the region, the San Andreas, San Jacinto, and Elsinore faults, have the potential to produce strong seismic shaking in the City. The strength of the ground shaking is accredited to the distance from the fault, where the intensity decreases the further it is from the causative fault. Due to the multiple active faults in the Coachella Valley area, it is likely that the site will experience ground

shaking during the life of the project. Impacts of seismically-induced ground shaking at the project site will be analyzed further in the PDEIR.

iii. **Potentially Significant Impact.** The Public Safety Element of the Indian Wells General Plan indicates that liquefaction involves the sudden loss of strength in a saturated, cohesionless soil (typically sand) which is the result of shock or strain, such as in an earthquake. The shock causes the soil to behave like a liquid. Liquefaction is most likely to occur where groundwater is less than 30 feet from the surface. A project-specific soils report will be completed at the project site to analyze geotechnical conditions at the project, including potential groundwater depth. Impacts of seismically-induced liquefaction at the project property will be analyzed in the PDEIR.

iv. **Potentially Significant Impact.** Secondary effects of seismic ground shaking, such as slope failures, rockfalls and landslides may occur in the City, especially throughout elevated areas. Landslides are not likely to occur within the region, since the areas of steep slopes, located in the southern part of the City, are primarily composed of strong bedrock. Nevertheless, rockfall hazards can occur in the mountains and foothills during a strong earthquake. Seismically-induced rockfalls and landslides are not anticipated to impact the implementation of the GPU since the areas of steep slopes in the southern part of the City are primarily composed of bedrock. Nevertheless, rockfall hazards can occur in the mountains and foothills during a strong earthquake. Therefore, seismically-induced rockfalls and landslides will be analyzed in the PDEIR.

b) **Potentially Significant Impact.** Erosion is influenced by several factors including climate, topography, soil types, rock types, and vegetation. Natural erosion processes are often accelerated through human activities such as agricultural or land development through grading and the reduction of surface area stabilization. Erosion is a main concern in the Coachella Valley, including the City of Indian wells, due to the negative affects it has on infrastructure and human health. Wind, water, and human activities can lead to soil erosion. The implementation of the GPU could develop both vacant and developed land. Development of these areas may be impacted by windborne, waterborne, and human generated erosion during project development. These impacts will be analyzed further in the PDEIR.

c) **Potentially Significant Impact.** Future development in accordance with the GPU may result in development on unstable soils and geologic units. The PDEIR will evaluate these potential impacts.

d) **Potentially Significant Impact.** Expansive soils, as defined by the Riverside County General Plan, have a significant amount of clay particles which can give up water (shrink) or take on water (swell). The change in volume exerts stress on buildings and other loads placed on these soils, making them potentially hazardous. These soils can also be widely dispersed, occurring in both hillside areas and low-lying alluvial basins. Expansive soils can cause structural damage, cracked driveways and sidewalks, heaving of roads and highway structures, and disruption of pipelines and other utilities. Expansive soils can occur near water sources. Expansive soils could be present within the City. Future development accommodated by the GPU may be proposed and/or located on expansive soils. The hazard of expansive soils is potentially significant and will be evaluated in the PDEIR. Expansive soils will be analyzed and discussed in greater detail in the PDEIR.

e) **No Impact.** The City is located within the Coachella Valley Water District's service area for sewer. Development occurring from the implementation of the GPU would connect to the existing infrastructure. No septic systems are proposed. Therefore, no impacts are anticipated, and no further analysis is necessary.

f) **Potentially Significant Impact.** Paleontological resources include the fossilized remains or traces of animals and plants from a previous geologic period. The West Coachella Valley has yielded a variety of fossils in the past but these resources are mainly found in the sedimentary formations typical of lower upland areas. The valley floors in the City are underlain by deep alluvial, fluvian, and aeolian deposits, mainly sand, silt, and gravel, which in some areas are hundreds of feet thick. These deposits have a low

potential for yielding fossils. However, older alluvium within the City could have the potential for fossil material content. Further analysis will be provided in the PDEIR.

8. **GREENHOUSE GAS EMISSIONS** -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐

a) **Potentially Significant Impact:** To address the long-term adverse impacts associated with global climate change, California's Global Warming Solutions Act of 2006 (AB 32) requires California Air Resource Board (CARB) to reduce statewide emissions of greenhouse gases to 1990 levels by 2020. In 2016, Governor Jerry Brown signed Senate Bill 32 (SB32) that requires California to reduce GHG emissions to 40 percent below 1990 levels by 2030. With the passage of the California Global Warming Solutions Act of 2006 (Assembly Bill 32) in California, environmental documents for projects pursuant to CEQA are required to analyze greenhouse gases and assess the potential significance and impacts of GHG emissions.

The GPU is anticipated to contribute to Greenhouse Gas Emissions from sources that include area, energy, mobile, waste, and water usage. The PDEIR will evaluate the proposed development to describe and calculate the sources and amounts of greenhouse gas emissions resulting from GPU implementation. The findings will be based on a Greenhouse Gas Assessment undertaken for the GPU.

b) **Potentially Significant Impact:** The PDEIR will evaluate the GPU's ability to comply with the established plans, policies, and regulations adopted for the purpose of reducing the emissions of greenhouse gases. As part of that assessment, the PDEIR will review how the GPU complies with the Climate Change goals, policies and programs established by the City. Where necessary, GPU operations may be able to incorporate mitigation measures from the California Air Pollution Control Officers Association (CAPCOA). The extent to which GHG emissions are reduced will be documented and disclosed in the CalEEMod results, which is the platform for quantifying GHG emissions.

The PDEIR will assess the proposed GPU's ability to comply with the State and local plans and policies adopted for the purpose of reducing GHG emissions by taking into account the applicable efficiency-based GHG reduction measures and conclusions of a Greenhouse Gas Assessment.

9. **HAZARDS AND HAZARDOUS MATERIALS** -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

a) **Potentially Significant Impact**. The Code of Federal Regulations (CFR Title 40, Part 261) defines hazardous materials based on ignitability, reactivity, corrosivity, and/or toxicity properties. The State of California defines hazardous materials as substances that are toxic, ignitable or flammable, reactive and/or corrosive, which have the capacity of causing harm or a health hazard during normal exposure or an accidental release. As a result, the use and management of hazardous or potentially hazardous substances is regulated under existing federal, state, and local laws. Hazardous wastes require special handling and disposal methods to reduce their potential to damage public health and the environment. Manufacturer's specifications dictate the proper use, handling, and disposal methods for the specific substances. In most cases, it is a violation of Federal or State law to improperly store, apply, transport, or dispose of hazardous materials and waste.

Implementation of the General Plan Update would result in the development of residential, commercial, and resort uses, which may use and store hazardous materials for their function. The transport of hazardous materials along highways and local roads creates potential risks for spills and leaks from nonstationary sources (i.e., trucks). The buildout of the GPU could result in the transport, use, or disposal of hazardous materials for existing and future developments and uses. Therefore, the PDEIR will analyze the potential impacts of the transport, use, and disposal of hazardous materials related to the GPU.

b) **Potentially Significant Impact**. As stated above, implementation of the GPU would result in the development of residential, commercial, and resort uses, which may use and store hazardous materials for their function. The transport of hazardous materials along highways and local roads creates potential risks for spills and leaks from nonstationary sources (i.e., trucks). Therefore, the PDEIR will analyze the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment as a result of the GPU.

c) **Potentially Significant Impact.** The City of Indian Wells is located within the Desert Sands Unified School District (DSUSD) area. One school is located within Indian Wells, and includes Gerald R. Ford Elementary School, at 44210 Warner Trail.

Due to the school's location within the City, the PDEIR will analyze the potential for the GPU to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste in proximity to the school.

d) **Potentially Significant Impact.** As previously discussed, the City of Indian Wells is largely developed, with approximately 116.3 acres of undeveloped area. Development of vacant parcels could occur on hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, pursuant to Government Code 65962.5 and its subsections, record searches throughout the City were performed within multiple database platforms. The resources consulted will include GeoTracker, EnviroStor, and the EPA Enforcement and Compliance History Online (ECHO). Findings within the database will be provided in the PDEIR and results of the record searches will determine whether the project area is included on a list of hazardous materials sites and will be analyzed in the EIR.

e) **No Impact.** The City of Indian Wells is located approximately 2 miles southwest of the closest airport, the Bermuda Dunes Airport. The City is not located within the Bermuda Dunes Land Use Compatibility Plan. Therefore, the PDEIR will not analyze the project's potential to result in a safety hazard or excessive noise for people residing or working in the City associated with an Airport Land Use Compatibility Plan. No impacts are expected.

f) **Potentially Significant Impact.** Although the City of Indian Wells is largely developed, buildout of the GPU would involve the construction and development of vacant areas in the City. The GPU could potentially result in changes to the circulation patterns or emergency access routes during future construction activities. Therefore, impacts to emergency response plans will be evaluated in the PDEIR.

g) **No Impact**. The City of Indian Wells is not prone to wildfires due to the desert environment, which does not support large brush. The City is located north of the Santa Rosa Mountains. Thus, development abuts wildland areas. However, the Santa Rosa Mountains and the desert environment does not cultivate dense vegetation to grow or provide fuel for wildfires.

CAL FIRE conducts fire hazard severity mapping, including mapping areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), define the application of various mitigation strategies and influence how buildings are constructed and how property is protected within State Responsibility Areas (SRAs) to reduce risk associated with wildland fires. In addition, CAL FIRE must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Area (LRA). According to the California Fire Hazard Severity Zone Viewer, there are no FHSZ zones located within the GPU Planning Area and no threat of wildland fire. Likewise, there are no VHFHSZ zones within the Planning Area.

Federal Responsibility Areas (FRAs) are lands administered or controlled by the Federal Government for which federal agencies have administrative and protection responsibility. There are five FRAs within the mountainous areas that serve as the backdrop for Indian Wells. However, the areas adjacent to the established FRAs are designated for open space uses. Development is not proposed in areas adjacent to the mountainous areas of the City. Therefore, buildout of the City per the General Plan Update is not expected to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. Additional discussion regarding wildfire impacts to the project are provided in the Wildfire Section of this Initial Study. Based on the findings above and in the Wildfire Section, the project will not be impacted by wildfires and no further analysis in the PDEIR is necessary.

10. **HYDROLOGY AND WATER QUALITY** -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☒	☐	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impeded 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 offsite;	☒	☐	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☒	☐	☐	☐
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?	☒	☐	☐	☐

a) **Potentially Significant Impact.** The design, construction, and operation of the GPU is required to comply with the applicable Clean Water Act (CWA), National Pollutant Discharge Elimination System (NPDES), state, and City of Indian Wells Public Works Engineering Standards that are designed to prevent violations or impacts to surface water quality standards and waste discharge requirements pertinent to surface or ground water quality.

During the period of construction, the future projects must comply with the State's most current NPDES Construction General Permit (CGP), which involves the preparation of a Notice of Intent (NOI) and a project-specific Storm Water Pollution Prevention Plan (SWPPP), designed to prevent potential adverse impacts to surface water quality, including erosion and siltation, during the period of construction. The required SWPPP must be prepared concurrently with final engineering design and must meet all NPDES plan review elements with plan review by the City of Indian Wells. The City's review and approval process ensures that all responsible parties and compliance plan elements are properly demonstrated. Proper SWPPP implementation during construction will be regulated and enforced as part of the local agency site inspection protocols.

Future projects will be required to submit and obtain approval for a Project-Specific Water Quality Management Plan (WQMP) in accordance with the current standards of the Whitewater River Region Water Quality Management Plan for Urban Runoff, the Whitewater River Watershed Municipal Separate Storm Sewer (MS4) Permit, and the City's engineering requirements. The WQMP is a compliance plan required to account for the stormwater facilities and management conditions to be followed by the site operator during the life of the project (post-construction). Plan approval involves recording an agreement of the WQMP against the property to ensure that the City is allowed access and enforcement on this matter.

The PDEIR will assess in further detail how the GPU will achieve compliance with Federal, State, and local regulations designed to prevent impacts to water quality standards and the beneficial uses assigned to local receiving waters, during construction and operation. The supported findings resulting from further assessment, along with any mitigation deemed necessary, will be provided in the PDEIR.

b) **Potentially Significant Impact.** The Coachella Valley Groundwater Basin is the primary groundwater source for Indian Wells, with Coachella Valley Water District (CVWD) being the domestic water purveyor serving the City. The Coachella Valley Groundwater Basin has an estimated storage capacity of 40 million acre-feet (AF) of water within the upper 1,000 feet and is divided into four subbbasins: Indio, Mission Creek, Desert Hot Springs, and San Gorgonio. The project site is specifically underlain by the Indio Subbasin, which is also known as the Whitewater River Subbasin.

Although the GPU is not expected to interfere with existing or planned recharge facilities, the PDEIR will further assess in greater detail how the scale of water consumption in relation to the regional groundwater resources, including the pertinent conservation and recharge strategies. The findings resulting from further study, along with any mitigation deemed necessary, will be provided in the PDEIR.

c i-iii) **Potentially Significant Impact.** The Planning Area lies in the Coachella Valley at the base of the Santa Rosa Mountains. The topography of the area is a result of regional landforms, fault movements, climate, and erosion. Most of the city lies within the gentle sloping, valley floor. There is some minimal topography within the valley from incised drainage, but most of the valley is relatively flat.

The U.S. Natural Resource Conservation Service (NRCS) delineates soil units and compiles soils data as part of the National Cooperative Soil Survey. Soil erosion data for the City of Indian Wells was obtained from the NRCS. As identified by the NRCS web soil survey, the erosion factor K within the Planning Area varies from 0.02 to 0.55, which is considered a low to high potential for erosion. Generally, erosion potential within the Planning Area increases to the south. Combined with low annual precipitation, the City soils are not deemed to be prone to existing erosion or siltation.

The PDEIR will analyze the GPU's potential to result in erosion or siltation throughout the City; increase the rate or amount of surface runoff in a manner that would result in flooding; or create runoff water which would exceed the capacity of existing or planned stormwater drainage systems. The further study and supported findings of this topic, as well as any mitigation deemed necessary, will be part of the PDEIR assessment.

c iv) **Potentially Significant Impact**. The Federal Emergency Management Agency (FEMA) has a database that maps flood potential across the United States. FEMA mapping provides important guidance for cities in planning for flooding events and regulating development within identified flood hazard areas. FEMA's National Flood Insurance Program (NFIP) is intended to encourage state and local governments to adopt responsible floodplain management programs and flood measures. As part of the program, the NFIP defines floodplain and floodway boundaries that are shown on Flood Insurance Rate Maps (FIRM). Special Flood Hazard Areas (SFHA) identified by FEMA are referred to as the base flood or 100-year flood hazard areas. A 100-year flood hazard area is defined as an area that will be inundated by a flood event having a 1-percent chance of being equaled or exceeded in any given year. Moderate flood hazard areas are areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. Areas of minimal flood hazard are areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood.

The 100-year flood zone in the City is generally restricted to the Whitewater River flood control channel and the Deep Canyon flood control channel. The only developments within the 100-year floodplain zones are golf courses in the flood control channels. There are residential areas located within the 500-year floodplain zones, generally south and east of the Deep Canyon flood control channel.

The PDEIR will provide further review and findings related to the GPU's potential to result in flooding.

d) **Potentially Significant Impact.** The existing and proposed storm drain system within the GPU area is expected to meet the local MS4 and City requirements by including the properly sized conveyance systems and retention facilities.

Flood Hazard: As previously stated, the 100-year flood zone is generally restricted to the Whitewater River flood control channel and the Deep Canyon flood control channel. The only developments within the 100-year floodplain zones are golf courses in the flood control channels. There are residential areas located within the 500-year floodplain zones, generally south and east of the Deep Canyon flood control channel.

Tsunami: The project is not located near any coastal areas and therefore is not prone to tsunami hazards.

Seiche Zone: The project site is not located in any mapped seiche zones.

Risk release of pollutants due to project inundation: The Planning Area is not located within a dam inundation area, and therefore no risks exist from dam failure.

The PDEIR will analyze this topic in further detail.

e) **Potentially Significant Impact.** Within the GPU, future projects are required to implement a project-specific Water Quality Management Plan (WQMP) to comply with the most current standards of the Whitewater River Region MS4 Permit and with the City's on-site retention standards. The final form of the WQMP will be consistent with final engineering documents to incorporate the grading, hydrology, and other improvement plans to demonstrate how the site design, source controls, and operation and maintenance program will achieve compliance. The aspect of stormwater management and water quality measures will be further studied in the PDEIR to result in supported findings.

11. **LAND USE AND PLANNING** - Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☒	☐	☐	☐

a) **No Impact**. Implementation of the GPU would involve development of vacant land and redevelopment in other areas within Indian Wells. New development under the GPU would not physically divide any established communities in the City of Indian Wells. The GPU will maintain the existing communities and neighborhoods within the City. Therefore, the PDEIR will not analyze the GPU's potential to physically divide an established community.

b) **Potentially Significant Impact**. The GPU proposes to revise various land uses throughout the City. The PDEIR will evaluate the GPU's potential to 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.

12. **MINERAL RESOURCES** -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

a) **No Impact.** The northeastern portion of the City is in zone MRZ-3. This zone is an area which contains mineral deposits, but their significance cannot be determined based on available data. The remaining areas of the City are within zone MRZ-1. This zone is an area where adequate information indicates that there are no significant mineral deposits present or where it is judged that there is little likelihood of their presence. No impacts are expected related to the loss of availability of known mineral resources; therefore, further analysis in the EIR is not required.

b) **No Impact.** Mineral resources that are known to exist in the Coachella Valley region primarily consist of sand and gravel (aggregate) typically deposited along and near local drainages. Aggregate material is deemed necessary to the local building industry as a component of asphalt, concrete, road base, stucco and plaster. Local or regional construction industries tend to be dependent on readily available aggregate deposits within reasonable distance to the market region. The City is not recognized as a mineral resource recovery site delineated in the County of Riverside General Plan, or the resource maps prepared pursuant to SMARA. No impacts are expected as a result of project implementation. No further study is required.

13. NOISE -- Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

a) **Potentially Significant Impact**. It is likely that buildout of the General Plan Update will lead to temporary or permanent increases in ambient noise levels in the City of Indian Wells. Permanent noise increases would occur from stationary sources (i.e., equipment such as HVAC) and non-stationary sources (i.e., vehicular traffic). A noise analysis will be conducted, and issues relating to short-term construction and long-term operational noise impacts related to buildout of the GPU will be further evaluated in the EIR.

b) **Potentially Significant Impact.** It is likely that development of the General Plan Update may lead to temporary increases of groundborne vibration during construction of the vacant areas within the City. Groundborne vibration during operation of the GPU would be a result of vehicular traffic along the private and public streets. A noise analysis will be conducted, and issues relating to the short-term construction and long-term operational vibration impacts related to buildout of the GPU will be further evaluated in the PDEIR.

c) **No Impact.** The closest airport to the project site is the Bermuda Dunes Airport, located approximately 2 miles northeast of the City of Indian Wells. The City is located outside of the 65, 60, and 55 CNEL noise contours associated with the airport facility. Furthermore, the City is not located within the Bermuda Dunes Airport Land Use Plan planning area. Therefore, the PDEIR will not analyze the airport's noise impact on the GPU.

14. **POPULATION AND HOUSING** – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

a) **Potentially Significant Impact.** The population of Indian Wells is 4,774 people (Department of Finance, 2023). The proposed General Plan Update would allow the construction of new housing, of various densities, as well as employment generating opportunities with commercial and resort developments throughout the City. The General Plan Update is proposed to generate housing and jobs, thus increasing growth in the area. Therefore, implementation of the GPU has the potential to induce substantial population growth both directly and indirectly. The PDEIR will analyze direct and indirect growth due to the development and operation of the GPU compared to buildout of the existing General Plan. The PDEIR will evaluate whether the project would result in substantial unplanned growth.

b) **No Impact.** The General Plan Update will result in buildout of the City, including the development of vacant lands throughout the City to residential, commercial, and open space uses. Changes to the developed areas of the City are not proposed as part of the GPU. The vacant lots do not currently provide housing for people. Therefore, buildout of the GPU would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. The PDEIR will not further analyze whether implementation of the GPU will result in the displacement of substantial numbers of existing people or housing.

15. **PUBLIC SERVICES** –	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☒	☐	☐	☐
Police protection?	☒	☐	☐	☐
Schools?	☒	☐	☐	☐
Parks?	☒	☐	☐	☐
Other public facilities?	☐	☐	☒	☐

a) **Fire**

Potentially Significant Impact. The City of Indian Wells contracts with Riverside County Fire Department/ Cal Fire (RCFD) for a full range of fire and emergency services 24 hours a day, 7-days a week.

The City entered into a cooperative agreement with the County of Riverside, through its Cooperative Fire Programs Fire Protection Reimbursement Agreement. This agreement ensures the City is provided with an array of full services from fire protection to hazardous materials discharge and medical emergencies. The fire department operates under a Regional Fire Protection Program, which allows all their fire stations to provide support as needed regardless of jurisdictional boundaries.

Cal-Fire/Riverside County Fire Department has one fire station located within the City of Indian Wells. Fire Station No. 55 is located within the Civic Center Complex at 44900 Eldorado Drive with a paramedic unit housing at the station that provides no-cost treatment and emergency transportation for City residents.

There are three additional fire stations in the cities surrounding Indian Wells (Station No. 71, 67 and 93). Station No. 71 is approximately 2.5 miles northwest of City limits, Station No. 67 is approximately 1.5 miles west of City limits in the southern portion of the City off Portola Avenue, and Station No. 93 is approximately 0.9 miles east of City limits from Washington Street and Miles Avenue. The fire station within the City, Station No. 55, is currently the first responder to the City, and Station No. 93 is the next closest Fire Station that would respond in the event Station No. 55 is out responding to an emergency call. Station No. 93 is equipped with a Paramedic Engine, Ambulance, and one ladder truck.

Implementation of the General Plan Update would result in the development of residential, commercial, and resort uses and may result in an incremental increase to the demand for fire services. The City exacts a development fee on all new development within the City to finance public facilities which goes towards the funding of fire facilities, and the City collects tax revenues to help fund fire services. The GPU's incremental increase in demand for fire services will be analyzed in the PDEIR.

Police

Potentially Significant Impact. Police services are provided by the Indian Wells Police Department, located at 44850 Eldorado Drive. According to a 2021 Matrix Study which analyzed the Indian Wells Police

Department, there were approximately 13 staff members in 2020. In 2020 based off daily patrol hours, there were 4.9 patrol officers serving the City.

The City exacts a fee from new developments to finance public facilities and collects tax revenues which go towards the funding of police services. The buildout of the GPU could result in an increase in demand for police services and will be evaluated in the PDEIR.

Schools

Potentially Significant Impact. The proposed project lies within the Desert Sands Unified School District (DSUSD). The only school in the City is Gerald R. Ford Elementary School located at 44210 Warner Trail. Implementation of the General Plan Update would result in the development of residential, commercial, and resort uses and could generate new residents and students.

Assembly Bill 2926 and Senate Bill 50 (SB 50) allow school districts to collect "development fees" for all new construction for residential/commercial and industrial use. According to the 2022 School Impact/Developer Fees, DSUSD developer fees are $4.79/sq.ft. for residential and $0.78/ sq.ft. for commercial. The District requires developer fees to assist with offsetting impacts of residents and employees generated by the project and the potential students that would be generated by residents. Monies collected are used for construction and reconstruction of school facilities. Development from the GPU will be required to contribute developer fees for school facilities. The PDEIR will calculate any changes to the number of project-generated students projected to attend schools in the Desert Sands Unified School District area and generally identify reported school deficiencies.

Parks

Potentially Significant Impact. The City has one park, The City of Indian Wells Park, located at the northeast corner of Highway 111 and Cook Street. The 6-acre park contains several walkways throughout the site, along with large grass areas, vegetation, and palm trees throughout. In addition to this park, there are 1,520 acres of land designated as Golf Course Recreation Overlay according to the Land Use Element. The Golf Course Recreation Overlay includes both private and public golf courses. The Golf Resort at Indian Wells is a 36-hole, publicly owned golf course. This golf course is located north of Highway 111, south of Fred Waring Drive, and East of Eldorado Drive. In addition, Indian Wells currently has six private golf clubs within the City.

According to the City website, there is a proposed park at the corner of Fairway Drive and Eldorado Drive though construction has not begun. The implementation of the GPU may create additional demand for public park facilities, due to an increase in population generated by the GPU. Development would be required to comply with the City's Development Impact Fees which include Park and Recreation fees to offset project impacts. The impact on parks from the implementation of the GPU will be analyzed in the PDEIR.

Other Public Facilities

Less than Significant Impact. The GPU could increase residential, commercial and resort uses within the City. Therefore, the operation of these uses may result in an increase in demand for government services or other public facilities. The EIR will analyze the project's impact to other public facilities in Indian Wells.

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

a-b) **Potentially Significant Impact**. The parks and recreation needs of the City are different than a typical community. Indian Wells houses several private and public golf courses that coincide with the lifestyles of City residents. The City includes one 6-acre park, The City of Indian Wells Park, located at the northeast corner of Highway 111 and Cook Street. The 6-acre park contains several walkways throughout the site, along with large grass areas, vegetation, and palm trees throughout. In addition to this park, there are 1,520 acres of land designated as Golf Course Recreation Overlay according to the Land Use Element. The Golf Course Recreation Overlay includes both private and public golf courses. The Golf Resort at Indian Wells is a 36-hole, publicly owned golf course. This golf course is located north of Highway 111, south of Fred Waring Drive, and East of Eldorado Drive. In addition, Indian Wells currently has six private golf clubs within the City.

Implementation of the GPU could result in an increased use in the existing public park, however, the GPU development would comply with the City's parkland in lieu fee (Quimby) and other development impact fees. Further study of the project's impact to existing recreational facilities will be provided in the PDEIR.

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

a) **Potentially Significant Impact.** The project would generate traffic during both construction and occupancy. The traffic generated by the implementation of the GPU would generate traffic that could affect the performance of the circulation system of the area. The City of Indian Wells has adopted policies and ordinances which address the performance of the circulation system. The County of Riverside has adopted a Congestion Management Program that includes performance standards for major transportation corridors in the County. A detailed traffic impact analysis (TIA) will be prepared for the City. The TIA and the PDEIR will discuss the analysis of program plan, ordinance or policy issues associated with the GPU, including impacts and any mitigation, if required.

b) **Potentially Significant Impact.** The implementation of the GPU would generate traffic during occupancy that could increase the Vehicle Miles Travelled (VMT) in the area. The State of California, the County of Riverside and the City of Indian Wells have adopted policies, ordinances and plans which address the reduction of VMT in the State and the Vicinity. A detailed TIA will be prepared for the proposed project. The TIA will evaluate the impacts of the proposed Project on area VMT. The PDEIR will discuss the analysis of this topic and incorporate the results of the TIA, including impacts and any mitigation, if required.

c), d) **Potentially Significant Impact.** The implementation of the GPU would generate traffic during occupancy that could increase design and circulation related hazards onsite and in the vicinity. The City of Indian Wells, County Fire and County Sheriff's Department have adopted policies, ordinances and plans which address the reduction of design hazards and impacts to hazard response. As stated previously, a detailed TIA will be prepared for the City. The TIA will evaluate the potential impacts of the GPU implementation on the surrounding area and on emergency services. The PDEIR will analyze this topic and will incorporate the results of the TIA, including impacts and any mitigation, if required.

18. TRIBAL CULTURAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project cause a substantial Adverse change in the significance of a Tribal cultural resource, defined in Public Resource Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size 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 Resource 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☒	☐	☐	☐

a i-ii**)** **Potentially Significant Impact**. California Government Code Section 65352.3 (adopted pursuant to the requirements of Senate Bill 18 [SB 18]) requires local governments to contact, refer plans to, and consult with California Native American tribal organizations prior to deciding to adopt or amend a general or specific plan. The Tribal organizations eligible to consult have traditional lands in a local government's jurisdiction, and are identified, upon request, by the Native American Heritage Commission (NAHC). Tribes have 90 days to respond to local government notice, as to whether they want to consult with local government. As noted in the California Office of Planning and Research's Tribal Consultation Guidelines (2005), "The intent of SB 18 is to provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places."

Assembly Bill 52 (AB 52) requires lead agencies to notify their local tribes about development projects. It also mandates lead agencies consult with tribes that are culturally affiliated with the geographic area of a proposed project or if the tribe has submitted a request to be notified. The tribe must respond to the lead agency within 30 days of receiving the notification if they wish to engage in consultation on the project, and the lead agency must begin the consultation within 30 days of receiving the request for consultation. Any information gained during the consultation process would be used to analyze impacts to Tribal Cultural Resources in the EIR.

Ground disturbance activities associated with the development allowed under the GPU could result in impacts to Tribal Cultural Resources. Therefore, it is recommended that the EIR evaluate this further.

19. **UTILITIES AND SERVICE SYSTEMS** – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, or 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?	☒	☐	☐	☐

a) **Potentially Significant Impact.** The GPU involves changes to the land use plan that will influence where growth and development would occur in the City. This has potential to increase water use, wastewater generation, stormwater drainage flows, electricity for power, natural gas, and telecommunication use. The PDEIR will evaluate these topics further.

b) **Potentially Significant Impact.** Groundwater is the primary source of domestic water supply in the Coachella Valley. Buildout under the GPU will include residential, commercial, and open space uses and could result in an increase in water demand that could exceed available and forecasted supplies. The potential impact on water supplies will be reviewed further in the PDEIR.

c) **Potentially Significant Impact.** The Buildout of the GPU could increase wastewater generation. The PDEIR will quantify and analyze the projected wastewater demand for the GPU buildout against the capacity of the Coachella Valley Water District's existing sewer infrastructure. The PDEIR will evaluate this topic further.

d) **Less than Significant Impact with Mitigation**. Burrtec is a private hauling company contracted with the City of Indian Wells to collect solid waste which includes trash, recycling, organics, and construction debris. The City of Indian Wells does not own or operate any landfill facilities and all waste is hauled to a Riverside County landfill. Buildout under the GPU could generate solid waste that may exceed the planned and existing capacity of landfills currently serving the City. Therefore, the PDEIR will analyze the capacity of the existing landfills and the potential solid waste generated by the project.

e) **Less than Significant Impact.** The project would be required to comply with all applicable solid waste statutes and guidelines. All development is required to comply with the mandatory commercial recycling requirements of Assembly Bill 341. The project will also comply with the recycling requirements of Cal Green and develop a waste management plan that will include diverting at least 50 percent of construction

material fill from landfills. No impacts are expected relative to applicable solid waste statues and regulations. However, this issue will be further analyzed in the PDEIR.

20. **WILDFIRE –** if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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 structure to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

a-d) **No Impact.** The City of Indian Wells is situated along the foothills of the Santa Rosa Mountains. Wildfire risk is related to a number of parameters, including fuel loading (vegetation), fire weather (winds, temperature, humidity levels, and fuel moisture contents), and topography (degree of slope). Steep slopes contribute to fire hazards by intensifying the effects of wind to make fire suppression difficult. Fuels such as grass are highly flammable because they have a high surface area to mass ratio and require less heat to reach the ignition point. Although the developed areas within Indian Wells lie adjacent to the slopes of the Santa Rosa Mountains, the combination of the desert environment and the lack of vegetation along the slopes are not conducive to generate and fuel wildfires.

CAL FIRE conducts fire hazard severity mapping, including mapping areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), define the application of various mitigation strategies and influence how buildings are constructed and how property is protected within State Responsibility Areas (SRAs) to reduce risk associated with wildland fires. In addition, CAL FIRE must recommend Very High Fire Hazard Severity Zones (VHFHSZ) identified within any Local Responsibility Area (LRA). According to the California Fire Hazard Severity Zone Viewer, there are no FHSZ zones located within the GPU Planning Area and no threat of wildland fire. Likewise, there are no VHFHSZ zones within the Planning Area.

Federal Responsibility Areas (FRAs) are lands administered or controlled by the Federal Government for which federal agencies have administrative and protection responsibility. There are five FRAs within the mountainous areas that serve as the backdrop for Indian Wells. However, the areas adjacent to the established FRAs are designated for open space uses. Development is not proposed in areas adjacent to the mountainous areas of the City. Therefore, buildout of the City per the GPU is not expected to expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. Moreover, the project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires because the site and surrounding areas do not have dense vegetation or steep slopes, conducive for the spread of wildfires.

Buildout of the City per the GPU will provide development of infrastructure (water, sewer, and storm drainage). Development within the City will be required to comply with building standards and guidelines to reduce potential impacts of fires, resulting in decreased fire risk. The GPU would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Highway 111, Fred Waring Drive, Washington Street, and Cook Street provide regional

access to the City. Emergency access is achieved throughout the City. The City of Indian Wells has its own fire station, at 44900 Eldorado Drive, and police station at 44850 Eldorado Drive. The General Plan Update would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan because it will provide emergency fire access to the various communities throughout the City and will not alter the City's existing street system. Emergency access would be compliant with the standards of the Fire Department to ensure proper vehicular access for emergency vehicles to the developed and undeveloped areas. As a result, the General Plan Update is not expected to require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

Due to the character of the urbanized areas of the City, fires would primarily be associated with structures, trash/debris, and vehicle fires. Structure fires, including homes, commercial buildings, and other facilities are of the greatest concern due to the potential for loss of life as well as property. Generally, the risk of injury and damage is greater for higher occupancy structures such as condominiums, apartment buildings, and hotels. In addition, higher density areas are of increased concern due to the larger number of people residing within a concentrated area and the potential for fires to spread from one structure to another. However, Indian Wells is community with a relatively low population density and generally good emergency access. As stated above, wildfires are not expected to occur within the City due to the lack of fuel surrounding the City. Therefore, the project would not 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 as a result of a wildfire. No impacts are anticipated.

Buildout of the GPU is not anticipated to be impacted by wildfires. No further study in the PDEIR is required.

21. **MANDATORY FINDINGS OF SIGNIFICANCE**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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 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?	☒	☐	☐	☐

a) **Potentially Significant Impact.** Future development pursuant to the GPU would involve the buildout of the City of Indian Wells. As stated above, the proposed development could adversely impact the habitat of fish or wildlife species, causes a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. Furthermore, historic sites have been recorded within the Indian Wells City limits and numerous others are listed as potential historic buildings. The City may have archaeological or paleontological resources that have not yet been discovered. Thus, biological and cultural resource impacts will be discussed further in the PDEIR.

The PDEIR will determine whether sensitive plant and wildlife species occur onsite, and the presence or absence of historical or prehistorical resources on the project site. The PDEIR will provide mitigation measures, if necessary, to reduce impacts to less than significant levels. The findings of these reports and the project's potential impact to biological and cultural resources will be analyzed in greater detail in the PDEIR.

b) **Potentially Significant Impact.** Implementation of the GPU and its land use changes could result in cumulative impacts to aesthetics, agricultural resources, air quality, biological resources, cultural resources, energy, geology and soils, GHG 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, or utilities and service systems. Cumulative impacts to these resources, for which potentially significant impacts are identified in this Initial Study, will be further analyzed in the PDEIR.

c) **Potentially Significant Impact.** As discussed in the Initial Study, the GPU and its associated land use changes could potentially have harmful effects on the environment, which could affect humans either directly or indirectly. Impacts would be potentially significant, and these issues will be discussed in the PDEIR.

RIVERSIDE LAFCO

July 9, 2024

Riverside County Cities
Attention: City Managers
Attention Community Development/Planning Directors

Subj: Compliance with Government Code Statutes Regarding Notifications to LAFCO for General Plan Amendments

This letter is to advise and/or remind all cities that are processing development or other related projects that require a General Plan Amendment that Government Code section 65352(a)(3) requires notification to LAFCOs for comment on these projects prior to taking action.

65352(a)(3) states- "Before a legislative body takes action to adopt or substantially amend a general plan, the planning agency shall refer the proposed action to all of the following entities:

(3) The local agency formation commission.

Most proposals for annexations requiring actions by the Riverside LAFCO, generally involve General Plan Amendments as part of the process. Recently, several projects have been submitted to LAFCO and/or have been discussed with LAFCO staff that are well past any reasonable notification timeframe with no notifications to LAFCO. It is important that all projects that will require LAFCO actions be discussed with LAFCO early on in the process. In particular, notification per the aforementioned statute being provided in a timely manner is critical so comments may be provided for potential LAFCO statutory or policy conflicts with the proposed project, and then addressed early on.

It is requested that Riverside LAFCO be added to the notification list of all General Plan Amendments being processed to ensure LAFCO can provide any appropriate comments that may be applicable. Notifications can be submitted by email to: info@lafco.org

Please do not hesitate to contact me at any time with any questions.

Regards,

Gary Thompson
Executive Officer
(951) 369-0631

NATIVE AMERICAN HERITAGE COMMISSION

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NAHC HEADQUARTERS
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(916) 373-3710
nahc@nahc.ca.gov

August 1, 2024

Jon Berg
City of Indian Wells
44950 El Dorado Drive
Indian Wells CA 92210

Re: 2024071208 Indian Wells General Plan Update Project, Riverside County

Dear Mr. Berg:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@NAHC.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

August 21, 2024 Sent via Email

Jon Berg, Community Development Director
City of Indian Wells
44-950 El Dorado Drive
Indian Wells, CA 92210

SUBJECT: NOTICE OF PREPARATION—PROGRAMMATIC DRAFT ENVIRONMENTAL IMPACT REPORT FOR INDIAN WELLS GENERAL PLAN UPDATE

Dear Mr. Berg,

Thank you for the opportunity to review and comment on the above-mentioned project. The City of La Quinta has no comments at this time. Please keep us on your distribution list for any future public notices pertaining to this project. You may email notices to Cheri Flores, Planning Manager, at clflores@laquintaca.org.

Sincerely,

Cheri Flores
Planning Manager
Design and Development Department

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

August 27, 2024
Sent via email

Jon Berg
Community Development Director
City of Indian Wells
44950 Eldorado Drive
Indian Wells, CA 92210
jberg@indianwells.com

Subject: Notice of Preparation of a Draft Environmental Impact Report
Indian Wells General Plan Update Project
State Clearinghouse No. 2024071208

Dear Jon Berg:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the City of Indian Wells for the Indian Wells General Plan Update (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

CDFW is also submitting comments as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

The City of Indian Wells (City) occupies an area of roughly 15 square miles in the Coachella Valley area of Riverside County, approximately 14 miles southeast of Palm Springs. Indian Wells is bounded by the City of Palm Desert to the north and west, by the City of La Quinta to the east, and by unincorporated areas of Riverside County to the north and south. The Project site is located within the boundaries of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

The Project proposes a comprehensive General Plan Update (GPU). The GPU addresses land use, mobility, open space, conservation, safety, noise, and economic development. The GPU will be organized into six elements: Land Use, Mobility, Resource Management, Public Safety, Economic Development, and Housing. The GPU includes an update to the City's Land Use Map. It proposes to change the current land use designation of two locations. The GPU proposes changes to the Whitewater River channel consistent with ongoing efforts to improve the channel. Specifically, approximately 6.82 acres of the Whitewater River channel will be removed from designation as part of the storm channel and added to the designation of developable acreage for resort commercial uses utilizing approved channel re-design. The improvements will include engineered fill material and new slope protection on the southern slope of the channel in the vicinity of Miles Avenue. Buildout of the proposed GPU would result in 5,455 single-family units and 816 multifamily units, for a total of 6,271 residential units (consistent with the current General Plan); 5,159,667 square feet of nonresidential space (27,563 more square feet than the current General Plan); and 6,310 jobs (93 more jobs than the current General Plan).

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the City of Indian Wells in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The comments and recommendations are also offered to enable the CDFW to adequately review and comment on the proposed Project with respect to the Project's consistency with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

CDFW recognizes that the general plan EIR need not be as detailed as CEQA documents prepared for specific projects that may follow (CEQA Guidelines § 15146). CDFW also recognizes that the level of detail should be reflective of the level contained in the plan or plan element being considered (Rio Vista Farm Bureau Center v. County of Solano (1992) 5 Cal.App.4th 351). However, please note that the City of Indian Wells cannot defer the analysis of significant effects of the general plan to later-tiered CEQA documents (Stanislaus Natural Heritage Project v. County of Stanislaus (1996) 48 Cal.App.4th 182).

CDFW recommends that the forthcoming DEIR address the following:

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special emphasis should be placed on environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the project, the DEIR should include a complete assessment of the flora and fauna within and adjacent to the Project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats.

The CDFW recommends that the DEIR specifically include:

1. An assessment of the various habitat types located within the project footprint, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following *The Manual of California Vegetation*, second edition (Sawyer et al. 2009[2]). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the project. CDFW's California Natural Diversity Database (CNDDB) in Sacramento should be contacted at (916) 322-2493 or CNDDB@wildlife.ca.gov or https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the proposed Project.

[2] Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. http://vegetation.cnps.org/

CDFW's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the project site.

3. A complete, *recent* inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern (CSSC) and California Fully Protected Species (Fish & G. Code, § 3511). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. Focused species-specific surveys or CVMSHCP surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of the proposed Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought.

   Burrowing Owl (*Athene cunicularia*)

   The Project site has the potential to provide suitable foraging and/or nesting habitat for burrowing owl. Take of individual burrowing owls and their nests is defined by Fish and Game Code section 86, and prohibited by sections 3503, 3503.5, and 3513. Take is defined in Fish and Game Code section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill."

   Permittees of the CVMSHCP must ensure that Covered Activities within their jurisdictions—both inside and outside Conservation Areas—do not result in the take of the burrowing owl individuals, nests, or eggs. Section 3.5.6 of CDFW's Natural Community Conservation Plan (NCCP) Permit #2835-2008-001-06 for the CVMSHCP indicates that "following all laws applicable to migratory birds (discussed below), the pairs or individuals will not be Taken, just the land around and including the burrows," and "the HCP/NCCP does not authorize Take of nests and eggs as prohibited by Fish and Game Code sections 3503 and 3503.5 and therefore avoidance measures will have to be undertaken for all projects which have breeding burrowing owls present." An activity that results in the take of burrowing owl individuals, nests, or eggs would be unlawful and would not be a Covered Activity under the CVMSHCP. The City has an obligation under the CVMSHCP to ensure the Project does not result in the take of burrowing owl individuals, nests, and eggs.

CDFW recommends that the City follow the recommendations and guidelines provided in the *Staff Report on Burrowing Owl Mitigation* (Department of Fish and Game, March 2012); available for download from CDFW's website: https://www.wildlife.ca.gov/conservation/survey-protocols. The Staff Report on Burrowing Owl Mitigation, specifies three steps for project impact evaluations:

a. A habitat assessment;
b. Surveys; and
c. An impact assessment

As stated in the Staff Report on Burrowing Owl Mitigation, the three progressive steps are effective in evaluating whether a project will result in impacts to burrowing owls, and the information gained from the steps will inform any subsequent avoidance, minimization, and mitigation measures.

4. A thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018[3])

5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]).

6. A full accounting of all open space and mitigation/conservation lands within and adjacent to the Project.

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The DEIR should provide a thorough discussion of the direct, indirect, and cumulative impacts expected to adversely affect biological resources as a result of the Project (including the plan's land use designations, policies and programs). To ensure that Project impacts to biological resources are fully analyzed, the following information should be included in the DEIR:

1. A discussion of potential impacts from lighting, noise, human activity (e.g., recreation), defensible space, and wildlife-human interactions created by zoning of development projects or other project activities adjacent to natural areas, exotic and/or invasive species, and drainage. The latter subject should address Project-related changes on drainage patterns and water quality within, upstream, and downstream of the Project site, including: volume, velocity, and frequency of existing

[3] CDFW, 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities, State of California, California Natural Resources Agency, Department of Fish and Wildlife: March 20, 2018 (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline)

and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site.

2. A discussion of potential indirect Project impacts on biological resources, including resources in areas adjacent to the project footprint, such as nearby public lands (e.g., National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Natural Community Conservation Plan, or other conserved lands).

3. An evaluation of impacts to adjacent open space lands from both the construction of the Project and any long-term operational and maintenance needs. The proposed Project has the potential to impact Santa Rosa and San Jacinto Mountains Conservation Area. CDFW encourages the City of Indian Wells to contact the Coachella Valley Conservation Commission to determine if any portion of the project will impact adjacent conserved lands, and to work collaboratively to avoid and minimize impacts.

4. A cumulative effects analysis developed as described under CEQA Guidelines section 15130. The DEIR should analyze the cumulative effects of the plan's land use designations, policies and programs on the environment. Please include all potential direct and indirect Project related impacts to riparian areas, wetlands, vernal pools, alluvial fan habitats, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and other sensitive habitats, open lands, open space, and adjacent natural habitats in the cumulative effects analysis. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Alternatives Analysis

CDFW recommends the DEIR describe and analyze a range of reasonable alternatives to the Project that are potentially feasible, would "feasibly attain most of the basic objectives of the Project," and would avoid or substantially lessen any of the Project's significant effects (CEQA Guidelines § 15126.6[a]). The alternatives analysis should also evaluate a "no project" alternative (CEQA Guidelines § 15126.6[e]). The no Project alternative should evaluate how the changing environment, such as climate change and drought, may affect the community if a new or revised general plan were not adopted.

Mitigation Measures for Project Impacts to Biological Resources

The DEIR should identify mitigation measures and alternatives that are appropriate and adequate to avoid or minimize potential impacts, to the extent feasible. The City of Indian Wells should assess all direct, indirect, and cumulative impacts that are expected to occur as a result of the implementation of the Project and its long-term operation and

maintenance. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Fully protected species, such as Peninsular bighorn sheep DPS (*Ovis canadensis nelsoni* pop. 2), may not be taken or possessed at any time and no licenses or permits may be issued for their take except as follows:

    - Take is for necessary scientific research,
    - Efforts to recover a fully protected, endangered, or threatened species,
    - Live capture and relocation of a bird species for the protection of livestock, or
    - They are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (Fish & G. Code, §§ 3511, 4700, 5050, & 5515).

    Specified types of infrastructure projects may be eligible for an incidental take permit for unavoidable impacts to fully protected species if certain conditions are met (see Fish & G. Code §2081.15). Project proponents should consult with CDFW early in the project planning process.

    Project activities described in the DEIR should generally be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. CDFW also recommends that the DEIR fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that City of Indian Wells include in the analysis how appropriate avoidance, minimization, and mitigation measures will reduce indirect impacts to fully protected species.

2. *Sensitive Plant Communities*: CDFW considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer et al. 2009). The DEIR should include measures to fully avoid and otherwise protect sensitive plant communities from project-related direct and indirect impacts. Sensitive plant communities with ranks S-1 or S-2 have the potential to or have been documented to occur within or adjacent to the project area, including, but not limited to: Big galleta shrub-steppe (*Pleuraphis rigida* Herbaceous Alliance), Alkali sacaton–scratchgrass–alkali cordgrass alkaline wet meadow (*Sporobolus airoides–Muhlenbergia asperifolia–Spartina gracilis* Herbaceous Alliance), elephant tree stands (*Bursera microphylla* Woodland Special Stands).

3. *California Species of Special Concern* (CSSC): CSSC status applies to animals generally not listed under the federal Endangered Species Act or the CESA, but which nonetheless are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. CSSCs should be considered during the environmental review process. CSSCs have the potential or have been documented to occur within or adjacent to the Project area, including, but not limited to: **Reptiles**: flat-tailed horned lizard (*Phrynosoma mcallii*); **Birds**: burrowing owl (*Athene cunicularia*), crissal thrasher (*Toxostoma crissale*), LeConte's thrasher (*Toxostoma lecontei*), summer tanager (*Piranga rubra*), vermilion flycatcher (*Pyrocephalus rubinus*), yellow breasted chat (*Icteria virens*), yellow warbler (*Dendroica petechia brewsteri*); **Mammals**: Palm Springs pocket mouse (*Perognathus longimembris bangsi*), Palm Springs round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*), western yellow bat (*Lasiurus xanthinus*).

4. *Mitigation*: CDFW considers adverse project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the DEIR should include mitigation measures for adverse project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, onsite habitat restoration and/or enhancement, and preservation should be evaluated and discussed in detail. Where habitat preservation is not available onsite, offsite land acquisition, management, and preservation should be evaluated and discussed in detail.

   The DEIR should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

   If sensitive species and/or their habitat may be impacted from the Project, CDFW recommends the inclusion of specific mitigation in the DEIR. CEQA Guidelines section 15126.4, subdivision (a)(1)(8) states that formulation of feasible mitigation measures should not be deferred until some future date. The Court of Appeal in *San Joaquin Raptor Rescue Center* v. *County* of *Merced* (2007) 149 Cal.App.4th 645 struck down mitigation measures which required formulating management plans developed in consultation with State and Federal wildlife agencies after Project approval. Courts have also repeatedly not supported conclusions that impacts are mitigable when essential studies, and therefore impact assessments, are incomplete *(Sundstrom* v. *County* of *Mendocino* (1988) 202 Cal. App. 3d. 296; *Gentry* v. *City* of *Murrieta (1995)* 36 Cal. App. 4th 1359; *Endangered Habitat League, Inc.* v. *County* of *Orange* (2005) 131 Cal. App. 4th 777).

CDFW recommends that the DEIR specify mitigation that is roughly proportional to the level of impacts, in accordance with the provisions of CEQA (CEQA Guidelines, §§ 15126.4(a)(4)(B), 15064, 15065, and 16355). The mitigation should provide long-term conservation value for the suite of species and habitat being impacted by the Project. Furthermore, in order for mitigation measures to be effective, they need to be specific, enforceable, and feasible actions that will improve environmental conditions.

5. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

   CDFW recommends that local onsite propagules from the Project area and nearby vicinity be collected and used for restoration purposes. Onsite seed collection should be initiated in advance of project impacts in order to accumulate sufficient propagule material for subsequent use in future years. Onsite vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various project components as appropriate.

   Restoration objectives should include protecting special habitat elements or re-creating them in areas affected by the Project; examples could include retention of woody material, logs, snags, rocks, and brush piles.

6. *Nesting Birds and Migratory Bird Treaty Act:* Please note that it is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: Fish and Game Code section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided

by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

CDFW recommends that the DEIR include the results of avian surveys, as well as specific avoidance and minimization measures to ensure that impacts to nesting birds do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: project phasing and timing (e.g., conducting work outside the peak nesting season), monitoring of project-related noise (where applicable), sound walls, and buffers, where appropriate. The DEIR should also include specific avoidance and minimization measures that will be implemented should a nest be located within the project site. If pre-construction surveys are proposed in the DEIR, the CDFW recommends that they be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted sooner. CDFW recommends that disturbance of occupied nests of migratory birds and raptors within the Project site and surrounding area be avoided any time birds are nesting on-site. CDFW therefore recommends the completion of nesting bird surveys *regardless of the time of year* to ensure compliance with all applicable laws pertaining to nesting and migratory birds.

7. *Moving out of Harm's Way:* To avoid direct mortality to any non-listed terrestrial wildlife, CDFW recommends that the lead agency condition the DEIR to require that a CDFW-approved qualified biologist be retained to be onsite prior to and during all ground- and habitat-disturbing activities to inspect the Project area prior to any Project activities. Any individuals found shall not be harassed and shall be allowed to leave the Project area unharmed. If needed, a qualified biologist may guide, handle, or capture an individual non-listed, non–fully protected wildlife species to move it to a nearby safe location within nearby refugium, or it shall be allowed to leave the Project site of its own volition. Capture methods may include hand, dip net, lizard lasso, snake tongs and snake hook. If the wildlife species is discovered or is caught in any pits, ditches, or other types of excavations, the qualified biologist shall release it into the most suitable habitat near the site of capture. Movement of wildlife out of harm's way should be limited to only those individuals that would otherwise by injured or killed, and individuals should be moved only as far a necessary to ensure their safety (i.e., CDFW does not recommend relocation to other areas). Only biologists with appropriate authorization by CDFW shall move CESA-listed species. Furthermore, it should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss.

8. *Translocation of Species*: CDFW generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or

endangered species as studies have shown that these efforts are experimental in nature and largely unsuccessful.

California Endangered Species Act

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to CESA. CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in "take" (California Fish and Game Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the project; unless this Project is proposed to be a covered activity under the CVMSHCP. It is the policy of CESA to conserve, protect, enhance, and restore State-listed CESA species and their habitats.

CDFW encourages early consultation, as significant modification to the proposed Project and avoidance, minimization, and mitigation measures may be necessary to obtain a CESA ITP. CDFW must comply with CEQA for issuance of a CESA ITP. CDFW therefore recommends that the DEIR addresses all Project impacts to listed species and specify a mitigation monitoring and reporting program that will meet the requirements of CESA.

Based on review of CNDDB and Biogeographic Information and Observation System (BIOS), and/or knowledge of the project site/vicinity/general area, CDFW is aware that the following CESA-listed species have the potential to occur onsite/have previously been reported onsite: **Plants**: Algodones Dunes sunflower (*Helianthus niveus* ssp. *tephrodes*); **Reptiles**: Coachella Valley fringe-toed lizard (*Uma inornata*), desert tortoise (*Gopherus agassizii*); **Fish**: desert pupfish (*Cyprinodon macularius*)*;* **Birds**: least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*); **Mammals**: Peninsular bighorn sheep DPS (*Ovis canadensis nelsoni* pop. 2*).*

Coachella Valley Multiple Species Habitat Conservation Plan

Within the Inland Deserts Region, CDFW issued Natural Community Conservation Plan Approval and Take Authorization for the CVMSHCP per Section 2800, *et seq*., of the California Fish and Game Code on September 9, 2008. The CVMSHCP establishes a multiple species conservation program to minimize and mitigate habitat loss and provides for the incidental take of covered species in association with activities covered under the permit.

Compliance with approved habitat plans, such as the CVMSHCP, is discussed in CEQA. Specifically, Section 15125(d) of the CEQA Guidelines requires that the CEQA document discuss any inconsistencies between a proposed Project and applicable general plans and regional plans, including habitat conservation plans and natural community conservation plans. An assessment of the impacts to the CVMSHCP as a

result of this Project is necessary to address CEQA requirements. To obtain additional information regarding the CVMSHCP please go to: http://www.cvmshcp.org/.

The proposed Project occurs within the CVMSHCP area and is subject to the provisions and policies of the CVMSHCP. In order to be considered a covered activity, Permittees should demonstrate that proposed actions are consistent with the CVMSHCP and its associated Implementing Agreement. The City of Indian Wells is the Lead Agency and is signatory to the Implementing Agreement of the CVMSHCP. The project is located within Santa Rosa and San Jacinto Mountains Conservation Area. The Conservation Objectives for Santa Rosa and San Jacinto Mountains Conservation Area are identified in Section 4.3.21 of the CVMSHCP. Because the proposed Project is located within a Conservation Area it is subject to the Joint Project Review (JPR) process through the Coachella Valley Conservation Commission (CVCC). The Project will need to demonstrate consistency with the Conservation Objectives (as identified in CVMSHP Section 4.3.21), and address Avoidance, Minimization, and Mitigation Measures (CVMSHCP Section 4.4), and Land Use Adjacency Guidelines (CVMSHCP Section 4.5).

Regardless of whether take of threatened and/or endangered species is obtained through the CVMSHCP or through a CESA ITP, the DEIR needs to address how the proposed Project will affect the conservation objectives of the CVMSHCP. Therefore, all surveys required by the CVMSHCP to determine consistency should be conducted and results included in the DEIR so that CDFW can adequately assess whether the Project will impact the CVMSHCP.

CDFW Lake and Streambed Alteration Program

Based on review of material submitted with the NOP and review of aerial photography, several waterways occur throughout the City of Indian Wells including the Whitewater River. Depending on how the Project is designed and constructed, it is likely that the Project applicant will need to notify CDFW per Fish and Game Code section 1602. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following: Substantially divert or obstruct the natural flow of any river, stream or lake; Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or Deposit debris, waste or other materials that could pass into any river, stream or lake. Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams, desert washes, and watercourses with a subsurface flow.

Upon receipt of a complete notification, CDFW determines if the proposed Project activities may substantially adversely affect existing fish and wildlife resources and whether a Lake and Streambed Alteration (LSA) Agreement is required. An LSA Agreement includes measures necessary to protect existing fish and wildlife resources. CDFW may suggest ways to modify your Project that would eliminate or reduce harmful impacts to fish and wildlife resources.

CDFW's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code 21065). To facilitate issuance of an LSA Agreement, if necessary, the DEIR should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended, since modification of the proposed Project may be required to avoid or reduce impacts to fish and wildlife resources. To submit a Lake or Streambed Alteration notification package, please go to https://wildlife.ca.gov/Conservation/Environmental-Review/EPIMS.

ADDITIONAL COMMENTS AND RECOMMENDATIONS

Landscaping

To ameliorate the water demands of this Project, CDFW recommends incorporation of water-wise concepts in any Project landscape design plans. In particular, CDFW recommends xeriscaping with locally native California species and installing water-efficient and targeted irrigation systems (such as drip irrigation). Native plants support butterflies, birds, reptiles, amphibians, small mammals, bees, and other pollinators that evolved with those plants, more information on native plants suitable for the Project location and nearby nurseries is available at CALSCAPE: https://calscape.org/. Local water agencies/districts and resource conservation districts in your area may be able to provide information on plant nurseries that carry locally native species, and some facilities display drought-tolerant locally native species demonstration gardens. Information on drought-tolerant landscaping and water-efficient irrigation systems is available on California's Save our Water website: https://saveourwater.com/. CDFW also recommends that the DEIR include recommendations regarding landscaping from Section 4.0 of the CVMSHCP "Table 4-112: Coachella Valley Native Plants Recommended for Landscaping" (pp. 4-180 to 4-182; https://cvmshcp.org/plan-documents/).

Construction Noise

Project-related construction has the potential to generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project. CDFW recommends that the DEIR include an analysis of impacts to wildlife from Project-related construction noise, and appropriate avoidance, minimization, and mitigation measures that will reduce impacts to less than significant.

Construction may result in substantial noise through road use, equipment, and other Project-related activities. This may adversely affect wildlife species in several ways as wildlife responses to noise can occur at exposure levels of only 55 to 60 dB[4].

[4] Barber, J. R., K. R. Crooks, and K. M. Fristrup. 2009. The costs of chronic noise exposure for terrestrial organisms. Trends in Ecology and Evolution 25:180-189.

Anthropogenic noise can disrupt the communication of many wildlife species including frogs, birds, and bats[5,6,7,8]. Noise can also affect predator-prey relationships as many nocturnal animals such as bats and owls primarily use auditory cures (i.e., hearing) to hunt. Additionally, many prey species increase their vigilance behavior when exposed to noise because they need to rely more on visual detection of predators when auditory cues may be masked by noise[9,10]. Noise has also been shown to reduce the density of nesting birds[11] and cause increased stress that results in decreased immune responses[12]. The City of Indian Wells should include measures in the DEIR to ensure the following: restricting the use of equipment to hours least likely to disrupt wildlife (e.g., not at night or in early morning); restricting the use of generators except for temporary use in emergencies; provide power to sites by solar PV (photovoltaic) systems, cogeneration systems (natural gas generator), small micro-hydroelectric systems, or small wind turbine systems; ensure the use of noise suppression devices such as mufflers or enclosure for generators; and sounds generated from any means must be below the 55-60 dB range within 50-feet from the source.

Artificial Nighttime Lighting

The Project will introduce new sources of artificial lighting. CDFW recommends that the DEIR include lighting design specifications for all artificial nighttime lighting that will be used by the Project, an analysis of the direct and indirect impacts of artificial nighttime lighting on biological resources, and appropriate avoidance, minimization, and mitigation measures that will reduce impacts to less than significant. The direct and indirect impacts of artificial nighttime lighting on biological resources including migratory birds that fly at night, bats, and other nocturnal and crepuscular wildlife should be analyzed, and appropriate avoidance and minimization measures should be included in the DEIR.

Artificial nighttime lighting often results in light pollution, which has the potential to significantly and adversely affect fish and wildlife. Artificial lighting alters ecological processes including, but not limited to, the temporal niches of species; the repair and

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[5] Sun, J. W. C., and P. M. Narins. 2005. Anthropogenic sounds differentially affect amphibian call rate. Biological Conservation 121:419–427.
[6] Patricelli, G., and J. J. L. Blickley. 2006. Avian communication in urban noise: causes and consequences of vocal adjustment. Auk 123:639–649.
[7] Gillam, E. H., and G. F. McCracken. 2007. Variability in the echolocation of *Tadarida brasiliensis*: effects of geography and local acoustic environment. Animal Behaviour 74:277–286.
[8] Slabbekoorn, H., and E. A. P. Ripmeester. 2008. Birdsong and anthropogenic noise: Implications and applications for conservation. Molecular Ecology 17:72–83.
[9] Rabin, L. A., R. G. Coss, and D. H. Owings. 2006. The effects of wind turbines on antipredator behavior in California ground squirrels (*Spermophilus beecheyi*). Biological Conservation 131:410–420.
[10] Quinn, J. L., M. J. Whittingham, S. J. Butler, W. Cresswell, J. L. Quinn, M. J. Whittingham, S. J. Butler, W. Cresswell, and W. Noise. 2017. Noise, predation risk compensation and vigilance in the chaffinch Fringilla coelebs. Journal of Avian Biology 37:601–608.
[11] Francis, C. D., C. P. Ortega, and A. Cruz. 2009. Noise pollution changes avian communities and species interactions. Current Biology 19:1415–1419.
[12] Kight, C. R., and J. P. Swaddle. 2011. How and why environmental noise impacts animals: An integrative, mechanistic review. Ecology Letters 14:1052–1061.

recovery of physiological function; the measurement of time through interference with the detection of circadian and lunar and seasonal cycles; the detection of resources and natural enemies; and navigation[13]. Many species use photoperiod cues for communication (e.g., bird song[14]), determining when to begin foraging[15], behavioral thermoregulation[16], and migration[17]. Phototaxis, a phenomenon that results in attraction and movement towards light, can disorient, entrap, and temporarily blind wildlife species that experience it[8]. The City of Indian Wells should include measures in the DEIR to ensure the following: eliminate all nonessential lighting throughout the Project area; avoid or limit the use of artificial light during the hours of dawn and dusk when many wildlife species are most active; lighting for Project activities is fully shielded, cast downward, reduced in intensity to the greatest extent, and does not result in spill over onto other properties or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/); the use of LED lighting with a correlated color temperature of 3,000 Kelvins or less; proper disposal of hazardous waste; and recycling of lighting that contains toxic compounds with a qualified recycler.

Sand-Dependent Covered Species

With regard to obligations of Local Permittees, Section 6.6.1 of the CVMSHCP indicates that "within and outside conservation areas, on parcels approved for development, the Permittees shall encourage the opportunity to salvage Covered sand-dependent species". The surface substrate on the Project site is composed mainly of wind-blown, fine-grained sand. This type of substrate has the potential to be occupied by several Covered Species under the CVMSHCP that are sand-dependent, including Palm Springs pocket mouse, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, and Coachella Valley milkvetch. An assessment of biological resources is recommended by CDFW to determine whether these or other send-dependent species are present on the Project site. The City of Indian Wells should include measures in the DEIR to prepare and submit to the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service, for review and approval, a plan to salvage sand-dependent CVMSHCP Covered Species within the Project area. The plan shall be prepared by a qualified biologist experienced in surveying for and handling sand-dependent Covered Species. The plan shall include, but not be limited to, the species-specific salvage methods and timing for each sand-dependent Covered Species identified within the Project site and the location(s) where each species will be translocated. Only qualified biologist(s) with

[13] Gatson, K. J., Bennie, J., Davies, T., Hopkins, J. 2013. The ecological impacts of nighttime light pollution: a mechanistic appraisal. Biological Reviews, 88.4: 912-927.
[14] Miller, M. W. 2006. Apparent effects of light pollution on singing behavior of American robins. The Condor 108:130–139.
[15] Stone, E. L., G. Jones, and S. Harris. 2009. Street lighting disturbs commuting bats. Current Biology 19:1123–1127.
[16] Beiswenger, R. E. 1977. Diet patterns of aggregative behavior in tadpoles of *Bufo americanus*, in relation to light and temperature. Ecology 58:98–108.
[17] Longcore, T., and C. Rich. 2004. Ecological light pollution - Review. Frontiers in Ecology and the Environment 2:191–198.

appropriate state and federal permits to handle special-status species shall carry out salvage activities.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). Information can be submitted online or via completion of the CNDDB field survey form at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.).

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP of a DEIR for the Indian Wells General Plan Update Project (SCH No. 2024071208) and recommends that the City of Indian Wells address CDFW's comments and concerns in the forthcoming DEIR. Questions regarding this letter or further coordination should be directed to Julia Charpek, Environmental Scientist, at Julia.Charpek@wildlife.ca.gov or 909.354.0937.

Sincerely,

DocuSigned by:
Kim Freeburn
84F92FFEEFD24C8...

Kim Freeburn
Environmental Program Manager

ec: Heather Brashear, Senior Environmental Scientist (Supervisor), CDFW
Heather.Brashear@wildlife.ca.gov

Office of Planning and Research, State Clearinghouse, Sacramento
state.clearinghouse@opr.ca.gov

Vincent James, U.S. Fish and Wildlife Service
vincent_james@fws.gov

Peter Satin, Coachella Valley Conservation Commission
psatin@cvag.org

DESERT SANDS UNIFIED SCHOOL DISTRICT
47-950 Dune Palms Road • La Quinta, California 92253 • (760) 777-4200 • FAX: (760) 771-8505
BOARD OF EDUCATION: Humberto Alvarez, Michael Duran, Tricia Pearce, Linda Porras, Dr. Kailee Watson
SUPERINTENDENT: Kelly May-Vollmar, Ed.D.

August 29, 2024

Sent Via Email ONLY
jberg@indianwells.com

Jon Berg
Community Development Director
City of Indian Wells
44-950 El Dorado Drive
Indian Wells, CA 92210

RE: General Plan Update Project EIR (Project)

Mr. Berg:

In response to the Public Notice of Preparation, this letter is submitted to the City of Indian Wells ("City") on behalf of the Desert Sands Unified School District ("District"), a California public school district, and its governing board, with regard to our review and assessment of the City's Initial Study for above referenced Project. As a California public school district serving children who reside and attend school within the City, and as an owner of property within the City, the proposed Project directly affects the District's operations and affects resources within the District's expertise. Accordingly, we submit these comments to the City to ensure that the serious impacts of current and future growth from now through 2045 on our District and the families we serve are heard and meaningfully addressed to guide future growth in our community.

In accordance with the California Environmental Quality Act (Pub. Res. Code, §21000, *et seq.*, hereinafter "CEQA") and its interpreting regulations (Cal. Code Regs., tit. 14, §15000, hereinafter "CEQA Guidelines"), the District looks forward to receiving the City's written responses to these comments at least 10 days before certifying a final environmental impact report ("EIR") for the Project. (CEQA Guidelines, §15088(b); Pub. Res. Code, §21092.5.)

Proposed Project

The Project is defined as a comprehensive General Plan Update. We appreciate that the new policies proposed for the Project emphasize maintaining the area's "tranquil and luxurious resort environment, promoting fiscal resiliency, and creating a sustainable and resident future for current and future residents." The Project does not push residential growth, yet desires to change the land use designations in two areas to address the Resort Commercial category. Moreover, we acknowledge that buildout of the Project maintains the number of residential units as with the current General Plan (i.e., 5,455 single family units and 816 multifamily units, for a total of 6,271 residential units), and enhances the nonresidential space to 5,159,667 square feet (27,563 more square feet than the current General Plan), yielding 6,310 jobs (93 more jobs than the current General Plan).

The District emphasizes that although the residential development projections in the Project remain the same, we note that the Project neither addresses the cumulative impacts of these various growth efforts in our community, nor make any adjustments to ensure the the health and safety of our students and staff and the integrity of their learning environment with the proposed Project. The planned nonresidential growth and corresponding increase in jobs will nonetheless impact the District and its facilities, as further detailed in this letter. The cumulative impact on our facilities of unmitigated growth – whether residential or nonresidential - is *considerable*, *significant*, and *adverse*. The City must recognize the impacts the Project will have on school capacity, conditions, and safety. Such adverse impacts require the City and project owners to work with the District to create measures that support the development, and refurbishment, of new school facilities as the region expands, and to address traffic safety concerns and the noted adverse environmental impacts. In order for the community to grow, we must grow together, and we look forward to our ongoing collaboration with these efforts.

District's Written Comments

Upon our review of the subject documents, thank you for considering the following comments:

1. Correction: School Impact/Developer Fees

   Identification of the District's SB 50 development fees is incorrect at Page 37 – Schools. (See snapshot below.)

> **Schools**
> **Potentially Significant Impact**. The proposed project lies within the Desert Sands Unified School District (DSUSD). The only school in the City is Gerald R. Ford Elementary School located at 44210 Warner Trail. Implementation of the General Plan Update would result in the development of residential, commercial, and resort uses and could generate new residents and students.
>
> Assembly Bill 2926 and Senate Bill 50 (SB 50) allow school districts to collect "development fees" for all new construction for residential/commercial and industrial use. According to the 2022 School Impact/Developer Fees, DSUSD developer fees are $4.79/sq.ft. for residential and $0.78/ sq.ft. for commercial. The District requires developer fees to assist with offsetting impacts of residents and employees generated by the project and the potential students that would be generated by residents. Monies collected are used for construction and reconstruction of school facilities. Development from the GPU will be required to contribute developer fees for school facilities. The PDEIR will calculate any changes to the number of project-generated students projected to attend schools in the Desert Sands Unified School District area and generally identify reported school deficiencies.

   On July 16, 2024, at its regularly scheduled meeting, the District's Board of Education adopted Resolution No. 03/2024-2025, which adopted the District's Fee Justification Report for New Residential and Commercial/Industrial Development, dated June 28, 2024 ("Fee Justification Report") and increased the amounts of statutory Level 1 school impact fees (or developer fees) for residential and commercial/industrial development within the District's boundaries, pursuant to Education Code section 17620 and Government Code section 65995. The new fee rates, pursuant to statute, became effective 60 days after adoption on September 14, 2024. This information was previously provided to the City as required by Education Code 17621. Please update the City's information to reflect the District's current fee rates as follows:

- Commercial/Industrial: **$0.84** per square foot of chargeable covered and enclosed space for commercial/industrial development, except **$0.29** per square foot for rental self-storage; and

- Residential: **$5.17** per square foot of assessable space for residential development.

2. Ongoing Impacts to School Facilities

The District has one school in the City of Indian Wells - Gerald R. Ford Elementary School, as acknowledged by the Initial Study. Upon review of the document the District understands the City currently includes 4,694 single family units and 349 multifamily units (for a total of 5,043 residential units); 1,546,833 square feet of nonresidential space (i.e., office, sports, commercial, etc.); and offers 1,509 jobs within the City. The Project indicates buildout of the proposed General Plan Update resulting in 5,455 single family units and 816 multifamily units (for a total of 6,271 residential units) – which is consistent with the current General Plan; 5,159,667 square feet of nonresidential space (27,563 more square feet than the current General Plan); and 6,310 jobs (93 more jobs than the current General Plan).

The Initial Study notes that "Implementation of the General Plan Update would result in the development of residential, commercial, and resort uses and could generate new residents and students." We further elaborate on this statement by emphasizing that (a) the increase of planned nonresidential space in the Project, specifically, and (b) without further modifications to the current General Plan with respect to the ongoing residential development, will most certainly result in significant direct and cumulative impacts to the District. In the District's adopted Fee Justification Report, impacts of commercial and industrial development to the District are quantified and outlined in accordance with the methodology required by Education Code section 17621 and as further detailed in the Report. Even with the current residential unit projections, the impacts of any additional commercial/industrial development result in the estimated District's facilities cost per square foot ranging from $0.58 (for self-storage projects) to $90.62 (for restaurants) per square foot of nonresidential development. These estimated cost impacts are based on the District's average school facilities cost from a residential dwelling unit of $28,880.95, and takes into account the employee rates for certain categories of nonresidential development, and the potential interdistrict transfers to address employees living outside District boundaries where their students attend District schools near their place of employment. Notably relevant for the City, the District's estimated total cost for elementary school facilities and its ancillary facilities necessary to accommodate students generated from new residential development is $443,805,320.

The takeaway for the City is that even while maintaining the residential development as-is in the proposed Project, any nonresidential development will result in **unmitigated** school facilities impacts to the District ranging from $0.29 per square foot for self-storage

development to $45.30 per square foot for restaurants. These calculations and findings are detailed in the District's current Fee Justification Report. This means that even with payment of statutory school impact fees from project developers, the school facilities costs impacts are so significant that the District will still suffer fiscal impacts due to a funding shortfall.

3. Funding Shortfall for DSUSD School Facilities

   As emphasized above, payment of school impact fees authorized by statutes will not provide sufficient funding to address the impacts to the District's school facilities necessitated by the Project. Statutory parameters for calculations of school impact fees do not account for ancillary facilities such as interim housing during construction or additional central administration and support facilities.

   In the section above, we addressed the unmitigated school facilities impacts from the increased commercial/industrial development planned for the Project. These impacts range from $0.29 per square foot for self-storage development to $45.30 per square foot for restaurants. For your further consideration, we add that there will continue to be impacts to the District from those residential development projects even if the unit counts remain the same in the proposed Project. As presented in the Fee Justification Report, the school facilities impact amount per square foot of residential space equals $10.34. If a developer pays the current residential fee rate of $5.17 for a residential project, the District has a shortfall of $5.17 per square foot of every residential project constructed within its boundaries, including the City. This highlights that a residential developer is paying only 50% of the District's facilities cost impact from residential development – and that is significant.

4. School Fees Are Not Full and Complete Mitigation of the Project Environmental Impacts Related to School Facilities

   The Initial Study notes that "Development from the GPU will be required to contribute developer fees for school facilities. The PDEIR will calculate any changes to the number of project-generated students projected to attend schools in the Desert Sands Unified School District area and generally identify reported school deficiencies." First, we are unsure as to what "school deficiencies" the City may report since the District frequently reviews school facilities conditions, annually audits its fee collection and expenditures, and bi-annually reviews and updates its justification study for collection of fees. Nonetheless, we continue to emphasize that the payment of School Fees is not full and complete mitigation of the environmental impacts of the Project. For purposes of the California Environmental Quality Act ("CEQA"), the payment of School Fees does not relieve a lead agency of the legal obligation to consider and mitigate where feasible, the indirect environmental impacts resulting from foreseeable School Facilities. (*See Chawanakee Unified School District v. County of Madera, et al.* (2011) 196 Cal.App.4th 1016 ("*Chawanakee*").) In *Chawanakee*, the Court of Appeal rejected the notion that payment of School Fees satisfies all obligations to consider and mitigate school related impacts in an environmental impact report ("EIR"). The *Chawanakee* court held that the statutory framework governing School Fees excludes from EIR consideration and mitigation only certain considerations regarding a school district's ability to accommodate enrollment, such as adverse physical changes to school grounds, school buildings, and any related school consideration. Therefore, indirect impacts such as traffic, even when related to

school transportation, and reasonably foreseeable indirect impacts from the construction of school facilities such as dust and noise pollution, must be considered in the Project's EIR or Draft EIR.

Because general plans govern the type and location of new development, CEQA and its interpreting regulations require cities and counties to study potential environmental impacts as part of the adoption or update process. (Pub. Res. Code, § 21000, *et seq.*; *see also* CEQA Guidelines, §15378.) When a new general plan or revision is being considered, the EIR must evaluate the proposed plans or revision's effects on both the existing physical environment and the environment envisioned by any adopted plan. (*See Environmental Planning and Information Council v. Co. of El Dorado* (1982) 131 Cal.App.3d 354; CEQA Guidelines §15125(e).) Under CEQA and its Guidelines, an EIR must set forth all significant effects on the environment of the proposed project, as well as mitigation measures proposed to minimize significant effects on the environment, and alternatives to the proposed project. An EIR must "present information in such a manner that the foreseeable impacts of pursing the project can actually be understood and weighed." (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Ranch Cordova* (2007) 40 Cal.4th 412, 449-450.) In order to address the significant impacts resulting from the Project, the Project EIR or Draft EIR should include a plan for, as well as an analysis of, potential new school facilities, or improvements, necessitated by the Project, and the indirect environmental impacts of those school facilities. Thus, the statement that the PDEIR will calculate changes to the number of project-generated students projected in DSUSD area and generally identify reported school deficiencies does not mitigate the impact from the General Plan, nor does it meet the CEQA Guidelines.

5. Request for Reservation of Site

The District would like to request, pursuant to Government Code sections 65995 and 65998, that the City consider a future site be reserved within the Project to ensure that a school site is available, if necessary, to accommodate the growth in the City and to address the impacts to the District's school in the City.

6. Reminder on Certificate of Compliance

As the City is aware, there is a school impact fee that is currently collected on all new development at the time building permits are issued. Prior to issuing a permit, please ensure all developers contact the District and make an appointment to pay the required school fees. A formal certificate of compliance will be provided to the developer upon receipt of payment. This process is authorized and mandated by Education Code section 17620.

7. Other CEQA Notifications

Pursuant to Public Resources Code sections 21080.4, 21083.9, 21092, 21108, and/or 21152, as well as Government Code sections 65090 and/or 65091, please provide me

with a copy of any future notices issued for the proposed Project. In accordance with CEQA Guidelines, section 15204(d), please be advised that I, Patrick Cisneros, am the contact person for the District who is available for consultation on the District's behalf.

These comments, as well as the suggested revisions are set forth to strengthen the ability of the District to provide high quality K-12 education for the community. Addressing these cumulative impacts now, may help to avoid potential violations of CEQA, and produce the most desirable long-term outcome.

Sincerely,



PATRICK CISNEROS
Director, Facilities Services

\\files.ad.desertsands.us\Facilities\SHARE FILES 3-12\3 DEVELOPER FEES\COMMENT LETTERS & DEVEL UPDATES\Comment Ltrs & Dev Updates - Indian Wells\Indian IWells-DJUSD Comments 2024- Indian Wells General Plan Update - FINAL.docx

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August 28, 2024

Jon Berg, Community Development Director
City of Indian Wells, Community Development Department
44-950 El Dorado Drive
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Phone: (760) 776-0229
E-mail: jberg@indianwells.com

Subject: SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report for the General Plan Update [SCAG NO. IGR11102]

Dear Jon Berg:

Thank you for submitting the Notice of Preparation of a Draft Environmental Impact Report for the General Plan Update ("proposed project") to the Southern California Association of Governments (SCAG) for review. SCAG is responsible for providing informational resources to regionally significant plans, projects, and programs per the California Environmental Quality Act (CEQA) to facilitate the consistency of these projects with SCAG's adopted regional plans, to be determined by the lead agencies.[1]

Pursuant to Senate Bill (SB) 375, SCAG is the designated Regional Transportation Planning Agency under state law and is responsible for preparation of the Regional Transportation Plan (RTP), including the Sustainable Communities Strategy (SCS). SCAG's feedback is intended to assist local jurisdictions and project proponents to implement projects that have the potential to contribute to attainment of and alignment with adopted Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) goals and policies. Finally, SCAG is the authorized regional agency for Intergovernmental Review (IGR) of programs proposed for Federal financial assistance and direct Federal development activities, pursuant to Presidential Executive Order 12372.

SCAG staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the General Plan Update in Riverside County. The proposed project includes a revision to the General Plan to include new policies, and address land use, mobility, open space, conservation, safety, noise, and economic development on 9,333 acres.

When available, please email environmental documentation to IGR@scag.ca.gov providing, at a minimum, the full public comment period for review.

If you have any questions regarding the attached comments, please contact the IGR Program, attn.: Ryan Bañuelos, Associate Regional Planner, at (213) 630-1532 or IGR@scag.ca.gov. Thank you.

Sincerely,

Frank Wen, Ph.D.
Manager, Planning Strategy Department

[1] Local jurisdictions and other lead agencies shall have the sole discretion to determine a local project's or plan's consistency and/or alignment with Connect SoCal 2024 for the purpose of determining consistency for CEQA purposes.

COMMENTS ON THE NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE GENERAL PLAN UPDATE [SCAG NO. IGR11102]

CONNECT SOCAL 2024

Connect SoCal 2024 (Plan) is a long-range visioning plan for the six-county SCAG region, reflecting a continuation of the shift towards more efficient resource management including transportation infrastructure resources, land resources and environmental resources. The Plan highlights the existing land use and transportation conditions throughout the SCAG region and forecasts the region's evolving transportation needs between 2024 and 2050. The Plan identifies and prioritizes expenditures of the anticipated funding for transportation projects of all transportation modes: highways, streets and roads, transit, rail, bicycle, and pedestrian, as well as aviation ground access.

The Plan was developed to achieve greenhouse gas (GHG) per capita emission reduction targets, consistent with Senate Bill (SB) 375 and other regional goals. In accordance with federal fiscal constraint requirements, Connect SoCal 2024 is a financially constrained Plan in terms of transportation revenues and expenditures. Connect SoCal 2024 would reduce traffic congestion, improve air quality, and improve the region's long-term economic viability through more than $751 billion in transportation investments and a more sustainable regional development pattern. To view Connect SoCal 2024 and the accompanying technical reports, please visit the Connect SoCal 2024 webpage.

Connect SoCal 2024 Vision and Goals

The SCAG Regional Council fully adopted the Plan on April 4, 2024. Connect SoCal 2024 represents the vision for the region and reflects the planned transportation investments, policies, and strategies that integrate with the Forecasted Regional Development Pattern to achieve the Plan's goals. The Vision and Goals for Connect SoCal 2024 are rooted in the direction set forth by Connect SoCal 2020, reflecting both SCAG's statutory requirements, the emerging trends, and persistent challenges facing the region. Reflecting input from engagement with stakeholders and members of the public, SCAG's vision for Southern California in the year 2050 is "*A healthy, prosperous, accessible and connected region for a more resilient and equitable future."* The following goals and subgoals helps the SCAG region to achieve this vision.

Mobility: ***Build and maintain an integrated multimodal transportation network***

- Support investments that are well-maintained and operated, coordinated, resilient and result in improved safety, improved air quality and minimized greenhouse gas emissions
- Ensure that reliable, accessible, affordable and appealing travel options are readily available, while striving to enhance equity in the offerings in high-need communities
- Support planning for people of all ages, abilities and backgrounds

Communities: ***Develop, connect and sustain communities that are livable and thriving***

- Create human-centered communities in urban, suburban and rural settings to increase mobility options and reduce travel distances
- Produce and preserve diverse housing types in an effort to improve affordability, accessibility and opportunities for all households

Environment: ***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 stresses and disruptions, such as climate change
- 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
- Conserve the region's resources

Economy: ***Support a sustainable, efficient and productive regional economic environment that provides opportunities for all residents***

- Improve access to jobs and educational resources
- 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

For ease of review, SCAG staff encourages the use of a side-by-side comparison of SCAG goals with discussions of the consistency, non-consistency, or non-applicability of the goals and supportive analysis in a table format. Suggested format is as follows:

SCAG CONNECT SOCAL 2024 GOALS AND SUBGOALS		
	Goal/Subgoal	Analysis
Mobility Goal:	*Build and maintain an integrated multimodal transportation network*	*Consistent: Statement as to why; Not-Consistent: Statement as to why; or Not Applicable: Statement as to why; DEIR page number reference*
Mobility Subgoal:	*Support investments that are well-maintained and operated, coordinated, resilient and result in improved safety, improved air quality and minimized greenhouse gas emissions*	*Consistent: Statement as to why; Not-Consistent: Statement as to why; or Not Applicable: Statement as to why; DEIR page number reference*
etc.		etc.

Connect SoCal 2024 Key Elements

Unique to this plan cycle, SCAG developed a set of Regional Planning Policies and Implementation Strategies to guide decision-making in the region toward integrated land use and transportation planning and other goals in Connect SoCal 2024. Eighty-eight Regional Planning Policies provide guidance for integrating land use and transportation planning to realize the vision of Connect SoCal 2024. The Implementation Strategies help the region to achieve this vision for the future and are priorities for SCAG efforts in fulfilling or going beyond the Regional Planning Policies. The Regional Planning Policies and Implementation Strategies were developed to achieve California's greenhouse gas emission reduction goals as set forth in SB 375 and federal Clean Air Act Section 176(c) requirements for transportation conformity while meeting the broader regional objectives, such as improved equity and resilience in addition to preservation of natural lands, improvement of public health, increased roadway safety, support for the region's vital goods movement industries and more efficient use of resources. The Plan also includes a detailed project list; strategic investments to bridge local plans with overarching regional performance targets and goals; a growth forecast and regional development pattern based on population, household and employment growth projections by 2050; and a transportation network including a list of transportation projects and investments.

Connect SoCal 2024 presents a summary of that work in five chapters of the Main Plan with additional details on Plan elements and analysis in the Plan's accompanying 15 Technical Reports. Connect SoCal 2024 builds upon the progress from previous RTP/SCS cycles, reflecting both SCAG's statutory requirements, the emerging trends, and persistent challenges facing the region. These policies offer a resource by which County Transportation Commissions (CTCs) or local jurisdictions within the SCAG region, when seeking resources from state or federal programs, can refer to specific policies to demonstrate alignment with the RTP/SCS.

Regional Growth Forecast and Forecasted Regional Development Pattern

As part of developing a Sustainable Communities Strategy per SB 375, SCAG must include a "forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies …" enables SCAG to reach its per capita GHG emission reduction target of 19 percent below 2005 levels by 2035. SCAG staff prepared a Forecasted Regional Development Pattern for Connect SoCal 2024 through 2050, the horizon year of the Plan. The regional growth forecast determines the projected increase in population, households, and jobs based on local general plans and known development entitlement agreements, including available data from 6th cycle housing element updates. The Connect SoCal 2024 Demographic and Growth Forecast Technical Report includes detailed discussions on socioeconomic data, including additional detail on the growth forecast, growth vision, and Sustainable Communities Strategy (SCS) consistency in Section of the Technical Report. The Connect SoCal 2024 Land Use and Communities Technical Report includes the most recent planning assumptions and estimates of population and housing.

SCAG's work helps facilitate implementation, but SCAG does not directly implement or construct projects or have land use authority. Achieving a sustained regional outcome depends upon informed and intentional local action. To access jurisdictional level growth estimates and forecasts for years 2035 and 2050, please refer to the Final Connect SoCal 2024 growth forecast data. The growth forecasts for the region and the applicable jurisdiction is below.

	Adopted SCAG Region Growth Forecasts				Adopted City of Indian Wells Growth Forecasts		
	Year 2019	**Year 2030**	**Year 2035**	**Year 2050**	**Year 2019**	**Year 2035**	**Year 2050**
Population	18,827,000	19,476,000	19,946,000	20,909,000	4,700	4,900	5,200
Households	6,193,000	7,006,000	7,311,000	7,814,000	2,600	3,100	3,400
Employment	8,976,000	9,609,000	9,885,000	10,276,000	5,200	6,200	6,700

Consistency with Connect SoCal 2024

SCAG provides informational resources to facilitate the lead agency's consistency determination of the proposed project with Connect SoCal 2024. For the purpose of determining consistency with CEQA, local jurisdictions shall have the sole discretion to determine a local project's or plan's consistency and/or alignment with Connect SoCal 2024[2].

CEQA MITIGATION MEASURES

The SCAG Regional Council certified the Final Program Environmental Impact Report for Connect SoCal 2024 (2024 PEIR) and adopted the Mitigation Monitoring and Reporting Program (MMRP), Findings of Fact, and a Statement of Overriding Considerations on April 4, 2024. The mitigation approach used in the 2024 PEIR recognizes the limits of SCAG's authority; distinguishes between SCAG commitments and project-level responsibilities and authorities; optimizes flexibility for project implementation; and facilitates CEQA streamlining (e.g., SB 375) and tiering where appropriate on a project-by project basis determined by each lead agency. Consistent with the approach, the 2024 PEIR identifies regional-level mitigation measures to be implemented by SCAG over the lifetime of the Plan as well as project-level mitigation measures that lead agencies can and should consider, as applicable and feasible, in subsequent project-specific design, CEQA review, and decision-making processes. Given that SCAG is not an implementing agency and has no decision-making authority over projects or any land use authority, it is ultimately up to each lead agency's own discretion to determine the appropriateness of mitigation measures, including exploring opportunities of voluntary regional advance mitigation programs, based on project-specific circumstances such as individual site conditions, project specific details, and community values. Therefore, SCAG staff recommends that the proposed project's CEQA lead agency review the 2024 PEIR for guidance, as appropriate.

[2] SCAG. April 2024. Connect SoCal 2024 Demographic and Growth Forecast Technical Report. Accessible at: https://scag.ca.gov/sites/main/files/file-attachments/23-2987-tr-demographics-growth-forecast-final-040424.pdf

From: Abraham Becerra <Abecerra@tmdci-nsn.gov>
Sent: Thursday, August 29, 2024 4:34 PM
To: Jon Berg <jberg@indianwells.com>
Cc: Cultural Committee <Cultural-Committee@tmtanf.org>; Alesia Reed <areed@tmdci-nsn.gov>; Richie_Lopez <renegades55r@gmail.com>; elkaseis1@gmail.com
Subject: Re: General Plan Update

CAUTION: This email originated outside our organization. Be cautious with any links or attachments.

Good afternoon I am the current Cultural Resources Coordinator for Torres Martinez Desert Cahuilla Indians and I am responding on the tribes behalf for the "Indian Wells General Plan Update Programmatic Draft Environmental Impact Report". Attached

Any development in the city could impact cultural resources important to our tribe as multiple culturally significant areas are located within the boundaries of the city of Indian Wells, including the site from which the name "Indian Wells" is derived. For a vague reference inside the boundaries of Indian wells we also have ancient village sites, mountains with great importance to our creation story, and a large percentage of the city is located directly on top of our ancient Lake Cahuilla Shoreline.

Our concerns for Cultural Resources inside the City of Indian Wells must be documented and addressed during all construction projects, we can discuss this in more depth if preferred at our next Cultural Committee meeting which I would like to invite you to attend. Our next meetings will be September 19th or the 26th both on a Thursday. Available time slots would most likely be after 1pm, this meeting also has zoom capabilities. I look forward to your response, thank you.

Respectfully,

Abraham Becerra
Cultural Resources Coordinator
Torres Martinez Desert Cahuilla Indians
(760)397-0300 Ext. 15485
Office Hrs. 7am-5pm Mon-Thursday

August 29, 2024

Jon Berg
Community Development Director
City of Indian Wells
44-950 El Dorado Drive
Indian Wells, CA 92210

SUBJECT: NOP of Draft PEIR for the Indian Wells General Plan Update

Dear Mr. Berg:

On July 31, 2024, the Imperial Irrigation District received from the City of Rancho Mirage Development Services Department, the Notice of Preparation of Draft Programmatic Environmental Impact Report for the Indian Wells General Plan Update. The City is preparing a comprehensive update to its General Plan, which was adopted and updated at various times between 1988 and 2010. The General Plan comprehensively covers the entire City boundary (southeast of the City of Palm Desert; west of the City of La Quinta; north of the Santa Rosa and San Jacinto Mountains National Monument, in Riverside County, California), and will build off the current General Plan, provide a framework for land use decisions, and direct future growth within the City of Indian Wells through the year 2045.

IID has reviewed the NOP of Draft PEIR and has the following comments:

1. Based on the preliminary information provided to the IID, to accommodate the power load to service future growth within the city of Indian Wells will require the addition and installation of one (1) new 28/50 MVA 92/13.2 kV substation transformer bank at the existing IID North La Quinta Substation in addition to transmission and distribution poles, a switchgear at the existing substation, backbone line extensions and distribution getaways. The required substation transformer bank addition is currently anticipated to be constructed under either a cost-share agreement and/or pursuant to one or more reimbursement agreements with one or more joint powers authorities, with a high-level cost estimate of $18 Million, based on 2024 IID rates (subject to change without notice, including for adjustments in costs of materials, supply or labor). As a result a project is not likely solely responsible for the entire cost, but the plan of service for a project is contingent upon the implementation of the substation transformer bank and related upgrades, and a project will be required to contribute a pro rata share of the cost of the substation transformer bank and upgrades, and said contribution shall be paid pursuant to one or more cost-share agreements and/or a reimbursement agreements with one or more joint powers authorities, or such other financial arrangement reasonably acceptable to IID. To the extent that the substation bank addition is not constructed by way of the foregoing mechanisms, a project may be required to facilitate construction of the substation bank addition.

2. The extension and/or reconfiguration of two (2) 92 kV transmission lines with an in and out configuration is also needed to serve the upgraded substation from IID's existing 92 kV transmission system in the development vicinity.

3. The existing substation site wil need to be evaluated and a larger than the standard 315' by 315' site may be required by IID. Final site suitability and dimensions will be determined once evaluation is completed. If a new substation site is indicated, additional requirements will include but are not limited to, grading, fencing, permits, zoning change, environmental compliance documentation, landscaping (if required by the City), and all rights of way and easements for the substation, and access rights for both ingress and egress, as well as for transmission and distribution power line facilities, all of which are required to be provided by project proponent(s) to IID before starting the substation implementation. Substation site dimensions do not take in consideration catch basins or any other storm water improvements. All setbacks, rights-of-way, sidewalks, berms, public utility easements, catch basins, etc. are considered off-site improvements, and it is the project proponent(s) responsibility to include the substation's storm water plans and mitigation as part of a project's overall plan.

4. Furthermore, two (2) distribution feeder (conduit and cable) wil be required to be extended from the IID North La Quinta Substation to the future growth area with a high level cost of $3.5 Million (subject to change without notice, including for adjustments in costs of materials, supply or labor). This cost is in addition to the cost share for the substation transformer bank addition. In addition, project proponents will be required to install the necessary double conduit/vault systems following the Permanent Plan of Service as well as distribution getaways conduit systems for the required distribution backbone line extensions (overhead and/or underground), reconfigurations of existing circuits and distribution line extensions deemed necessary to provide service for theit projects.

5. IID will not begin any engineering studies to provide electrical service to a project until the project proponent submits a customer project application (available for download at http://www.iid.com/home/showdocument?id=12923 and detailed loading information, panel sizes, project schedule and estimated in-service date. The project proponent shall bear all costs associated with additional facilities deemed necessary to provide electrical service to the project, including but not limited to distribution feeder/backbone extensions, distribution overhead and/or underground line extensions, as well as any other related upgrades and applicable permits, zoning changes, landscaping (if required by the City) and rights-of-way and easements.

6. It is important to note that a transmission-level power flow analysis (the cost of which is to be borne by the project proponent) will be required to properly assess the impacts caused by a project once a customer project application and loading calculations are received. This detail information will allow IID to perform an accurate assessment and provide a full report of any potential impacts and mitigation measures. The conditions of service could change as a result of additional studies. The cost of this transmission-level power flow analysis is $40,000 and can be produced in approximately twelve (12) to fourteen (14) weeks following payment of the study cost together with submittal of a completed customer service application (CSP) for aproject.

7. Be advised that pursuant to IID process, the standard time frame for the implementation of a new substation transformer (engineering, equipment procurement and construction) requires an average of 36 months. As a result, a project proponent should adjust a project's in-service dates accordingly.

8. Based upon the above, project proponents must provide the following documentation to IID: 1) Evidence of issuance of all local authorizations required to initiate construction, 2) Application for the installation of underground infrastructure system and payment of accompanying fees and 3) Application for service and payment of accompanying fees. These conditions are valid up to **August 29, 2025**. Absent receipt of such evidence and documentation by the referenced date, a new study will be required including a revised Plan of Service.

9. Underground infrastructure that includes trenching, conduits, pull boxes, switch boxes and pads shall be installed at the project developer's expense following IID approved plans and within the public utility easement or a dedicated easement, if applicable. Physical field installation of underground infrastructures should be verified and approved by an IID inspector prior to cable installation as per IID Developer's Guide available at https://www.iid.com/home/showdocument?id=14229.

10. Line extensions to serve a project will be made in accordance with IID Regulations:

    No. 2 (http://www.iid.com/home/showdocument?id=2540),
    No. 13 (http://www.iid.com/home/showdocument?id=2553),
    No. 15 (http://www.iid.com/home/showdocument?id=2555)

11. For additional information regarding electrical service for a project, applicants should be advised to contact the IID Energy - La Quinta Division Customer Operations, 81-600 Avenue 58 La Quinta, CA 92253, at (760) 398-5841 and speak with the project development planner assigned to the area.

12. It is important to note that IID's policy is to extend its electrical facilities only to those projects that have obtained the approval of a city or county planning commission and such other governmental authority or decision-making body having jurisdiction over said developments.

13. Project proponents will be required to provide rights of ways and easements for any proposed power line extensions and/or any other infrastructure needed to serve the project as well as the necessary access to allow for continued operation and maintenance of any IID facilities located on adjoining properties.

14. Projects will be required to provide and bear all costs associated with acquisition of rights of way, easements, and infrastructure relocations deemed necessary to accommodate street or road improvements imposed by the municipality.

15. Public utility easements over all private public roads and additional ten (10) feet in width on both side of the private and public roads shall be dedicated to IID for the construction, operation, and maintenance of its electrical infrastructure.

16. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer, storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions for its completion are available at https://www.iid.com/about-iid/department-directory/real-estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

17. Any new, relocated, modified or reconstructed IID facilities required for and by a project (which can include but is not limited to electrical utility substations, electrical transmission and/or distribution lines, ancillary facilities associated with the conveyance of energy service; the acquisition and dedication of real property, rights of way and/or easements for the siting and construction of electrical utility substations, electrical transmission and/or distribution lines and ancillary facilities associated with the conveyance of energy service, etc.) need to be included as part of the project's California Environmental Quality Act (CEQA) and/or National Environmental Policy Act (NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully mitigated. **Any mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent**.

18. Dividing a project into two or more pieces and evaluating each piece in a separate environmental document (Piecemealing or Segmenting), rather than evaluating the whole of the project in one environmental document, is explicitly forbidden by CEQA, because dividing a project into a number of pieces would allow a Lead Agency to minimize the apparent environmental impacts of a project by evaluating individual pieces separately, each of which may have a less-than-significant impact on the environment, but which together may result in a significant impact. Segmenting a project may also hinder developing comprehensive mitigation strategies. In general, if an activity or facility is necessary for the operation of a project, or necessary to achieve the project objectives, or a reasonably foreseeable consequence of approving the project, then it should be considered an integral project component that should be analyzed within the environmental analysis. The project description should include all project components, including those that will have to be approved by responsible agencies. The State CEQA Guidelines define a project under CEQA as "the whole of the action" that may result either directly or indirectly in physical changes to the environment. This broad definition is intended to provide the maximum protection of the environment. CEQA case law has established general principles on project segmentation for different project types. For a project requiring construction of offsite infrastructure, the offsite infrastructure must be included in the project description. *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App. 4th 713.

19. When a project goes through the CEQA compliance process, it is important to bear in mind that to address the project impacts to the electrical utility (i.e., the IID electrical grid),

considered under the environmental factor "Utilities and Services" of the Environmental Checklist/Intial Study, to determine if the project would require or result in the relocation or construction of new or expanded electric power facilities, the construction or relocation of which could cause significant environmental effects; a circuit study/distribution impact study, facility study, and/or system impact study must be performed.

20. Applicant should be advised that landscaping can be dangerous if items are planted too close to IID's electrical equipment. In the event of an outage, or equipment failure, it is vital that IID personnel have immediate and safe access to its equipment to make the needed repairs. For public safety, and that of the electrical workers, it is important to adhere to standards that limit landscaping around electrical facilities. IID landscaping guidelines are available at https://www.iid.com/energy/vegetation-management.

Should you have any questions, please do not hesitate to contact me at (760) 482-3609 or at dvargas@iid.com. Thank you for the opportunity to comment on this matter.

Respectfully,

Donald Vargas
Compliance Administrator II

Jamie Asbury – General Manager
Mike Pacheco – Manager, Water Dept.
Matthew H Smelser – Manager, Energy Dept.
Paul Rodriguez – Deputy Mgr. Energy Dept.
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CalEEMod Detailed Report
De Novo Planning Group

Indian Wells General Plan Update Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Indian Wells General Plan Update
Construction Start Date	5/1/2025
Operational Year	2045
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	0.80
Location	Indian Wells, CA, USA
County	Riverside-Salton Sea
City	Indian Wells
Air District	South Coast AQMD
Air Basin	Salton Sea
TAZ	5648
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

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
Health Club	200	1000sqft	28.4	200,000	0.00	0.00	—	—

Health Club	80.0	1000sqft	9.35	80,000	0.00	0.00	—	—
Health Club	50.0	1000sqft	6.82	50,000	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	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.	4.04	3.40	31.7	31.8	0.06	1.37	19.9	21.3	1.26	10.2	11.4	—	6,896	6,896	0.28	0.32	10.8	6,923
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	55.9	55.8	29.8	29.4	0.06	1.23	9.47	10.7	1.14	3.72	4.85	—	6,852	6,852	0.28	0.32	0.31	6,877
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.87	7.87	12.5	16.0	0.03	0.52	3.80	4.32	0.47	1.65	2.12	—	4,223	4,223	0.11	0.22	3.34	4,296
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.44	1.44	2.28	2.92	< 0.005	0.09	0.69	0.79	0.09	0.30	0.39	—	699	699	0.02	0.04	0.55	711

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.04	3.40	31.7	31.8	0.06	1.37	19.9	21.3	1.26	10.2	11.4	—	6,896	6,896	0.28	0.10	1.62	6,923
2026	2.06	1.76	12.2	26.0	0.04	0.40	2.27	2.68	0.37	0.55	0.93	—	6,093	6,093	0.20	0.32	10.8	6,203
2027	1.98	1.69	11.6	25.1	0.04	0.36	2.27	2.64	0.33	0.55	0.89	—	6,015	6,015	0.14	0.30	9.89	6,119
2028	1.90	1.61	11.0	24.3	0.04	0.32	2.27	2.60	0.30	0.55	0.85	—	5,939	5,939	0.14	0.30	8.99	6,041
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.89	3.28	29.8	29.4	0.06	1.23	9.47	10.7	1.14	3.72	4.85	—	6,852	6,852	0.28	0.32	0.31	6,877
2026	1.95	1.65	12.4	20.7	0.04	0.40	2.27	2.68	0.37	0.55	0.93	—	5,795	5,795	0.15	0.32	0.28	5,894
2027	1.88	1.58	11.8	20.2	0.04	0.36	2.27	2.64	0.33	0.55	0.89	—	5,724	5,724	0.14	0.30	0.26	5,818
2028	55.9	55.8	11.2	19.7	0.04	0.32	2.27	2.60	0.30	0.55	0.85	—	5,654	5,654	0.14	0.30	0.23	5,748
2029	55.9	55.8	0.90	2.24	< 0.005	0.01	0.36	0.38	0.01	0.08	0.10	—	458	458	0.01	0.01	0.02	462
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.64	1.38	12.5	12.7	0.02	0.52	3.80	4.32	0.47	1.65	2.12	—	2,709	2,709	0.11	0.05	0.47	2,726
2026	1.41	1.20	8.81	16.0	0.03	0.29	1.62	1.91	0.27	0.39	0.66	—	4,223	4,223	0.10	0.22	3.34	4,296
2027	1.36	1.15	8.37	15.6	0.03	0.26	1.62	1.88	0.24	0.39	0.63	—	4,170	4,170	0.10	0.22	3.05	4,240
2028	1.76	1.62	7.15	13.3	0.02	0.22	1.29	1.51	0.20	0.31	0.51	—	3,444	3,444	0.09	0.17	2.19	3,499
2029	7.87	7.87	0.13	0.36	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	67.6	67.6	< 0.005	< 0.005	0.06	68.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.30	0.25	2.28	2.32	< 0.005	0.09	0.69	0.79	0.09	0.30	0.39	—	449	449	0.02	0.01	0.08	451
2026	0.26	0.22	1.61	2.92	< 0.005	0.05	0.30	0.35	0.05	0.07	0.12	—	699	699	0.02	0.04	0.55	711
2027	0.25	0.21	1.53	2.84	< 0.005	0.05	0.30	0.34	0.04	0.07	0.12	—	690	690	0.02	0.04	0.51	702
2028	0.32	0.30	1.31	2.43	< 0.005	0.04	0.24	0.27	0.04	0.06	0.09	—	570	570	0.01	0.03	0.36	579
2029	1.44	1.44	0.02	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.01	11.3

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	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.	36.4	34.1	28.5	274	0.76	0.69	73.1	73.8	0.67	18.5	19.2	1,051	81,921	82,972	108	3.33	20.5	86,677
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	30.9	28.9	30.5	180	0.68	0.67	73.1	73.8	0.65	18.5	19.2	1,051	73,603	74,654	108	3.41	2.07	78,366
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	31.1	29.0	27.4	195	0.65	0.65	67.3	67.9	0.63	17.1	17.7	1,051	71,342	72,394	108	3.09	9.11	76,013
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.67	5.30	5.01	35.6	0.12	0.12	12.3	12.4	0.11	3.11	3.23	174	11,812	11,986	17.8	0.51	1.51	12,585

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	25.5	23.7	24.6	256	0.73	0.38	73.1	73.5	0.36	18.5	18.9	—	74,997	74,997	1.86	3.19	18.9	76,014
Area	10.5	10.3	0.12	14.4	< 0.005	0.03	—	0.03	0.02	—	0.02	—	59.0	59.0	< 0.005	< 0.005	—	59.2
Energy	0.42	0.21	3.81	3.20	0.02	0.29	—	0.29	0.29	—	0.29	—	6,799	6,799	0.69	0.04	—	6,829
Water	—	—	—	—	—	—	—	—	—	—	—	37.4	66.1	103	3.84	0.09	—	227
Waste	—	—	—	—	—	—	—	—	—	—	—	1,014	0.00	1,014	101	0.00	—	3,547
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Total	36.4	34.1	28.5	274	0.76	0.69	73.1	73.8	0.67	18.5	19.2	1,051	81,921	82,972	108	3.33	20.5	86,677

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	22.6	20.8	26.7	177	0.65	0.38	73.1	73.5	0.36	18.5	18.9	—	66,738	66,738	1.94	3.27	0.49	67,762
Area	7.90	7.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.42	0.21	3.81	3.20	0.02	0.29	—	0.29	0.29	—	0.29	—	6,799	6,799	0.69	0.04	—	6,829
Water	—	—	—	—	—	—	—	—	—	—	—	37.4	66.1	103	3.84	0.09	—	227
Waste	—	—	—	—	—	—	—	—	—	—	—	1,014	0.00	1,014	101	0.00	—	3,547
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Total	30.9	28.9	30.5	180	0.68	0.67	73.1	73.8	0.65	18.5	19.2	1,051	73,603	74,654	108	3.41	2.07	78,366
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	21.5	19.8	23.6	185	0.63	0.35	67.3	67.6	0.33	17.1	17.4	—	64,449	64,449	1.73	2.95	7.52	65,380
Area	9.16	9.06	0.06	7.08	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.1	29.1	< 0.005	< 0.005	—	29.2
Energy	0.42	0.21	3.81	3.20	0.02	0.29	—	0.29	0.29	—	0.29	—	6,799	6,799	0.69	0.04	—	6,829
Water	—	—	—	—	—	—	—	—	—	—	—	37.4	66.1	103	3.84	0.09	—	227
Waste	—	—	—	—	—	—	—	—	—	—	—	1,014	0.00	1,014	101	0.00	—	3,547
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Total	31.1	29.0	27.4	195	0.65	0.65	67.3	67.9	0.63	17.1	17.7	1,051	71,342	72,394	108	3.09	9.11	76,013
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.92	3.61	4.30	33.8	0.12	0.06	12.3	12.3	0.06	3.11	3.18	—	10,670	10,670	0.29	0.49	1.25	10,824
Area	1.67	1.65	0.01	1.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.82	4.82	< 0.005	< 0.005	—	4.84
Energy	0.08	0.04	0.69	0.58	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,126	1,126	0.11	0.01	—	1,131
Water	—	—	—	—	—	—	—	—	—	—	—	6.19	10.9	17.1	0.64	0.02	—	37.6
Waste	—	—	—	—	—	—	—	—	—	—	—	168	0.00	168	16.8	0.00	—	587
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
Total	5.67	5.30	5.01	35.6	0.12	0.12	12.3	12.4	0.11	3.11	3.23	174	11,812	11,986	17.8	0.51	1.51	12,585

3. Construction Emissions Details

3.1. Demolition (2025) - 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	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.51	0.51	—	0.08	0.08	—	—	—	—	—	—	—
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	0.39	0.33	3.04	2.73	< 0.005	0.13	—	0.13	0.12	—	0.12	—	469	469	0.02	< 0.005	—	471
Demolition	—	—	—	—	—	—	0.07	0.07	—	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.55	0.50	< 0.005	0.02	—	0.02	0.02	—	0.02	—	77.7	77.7	< 0.005	< 0.005	—	77.9
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 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	0.09	0.08	0.08	1.43	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	223	223	0.01	0.01	0.77	226
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	0.44	0.10	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	392	392	< 0.005	0.06	0.85	412
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.8	27.8	< 0.005	< 0.005	0.05	28.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	53.7	53.7	< 0.005	0.01	0.05	56.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.60	4.60	< 0.005	< 0.005	0.01	4.66
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	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.90	8.90	< 0.005	< 0.005	0.01	9.33

3.3. Site Preparation (2025) - 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	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.60	2.48	< 0.005	0.11	—	0.11	0.10	—	0.10	—	435	435	0.02	< 0.005	—	437
Dust From Material Movement	—	—	—	—	—	—	1.62	1.62	—	0.83	0.83	—	—	—	—	—	—	—
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	0.06	0.05	0.47	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	72.1	72.1	< 0.005	< 0.005	—	72.3
Dust From Material Movement	—	—	—	—	—	—	0.29	0.29	—	0.15	0.15	—	—	—	—	—	—	—
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	0.09	1.67	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	260	260	0.01	0.01	0.90	264
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.4	19.4	< 0.005	< 0.005	0.03	19.7
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	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.22	3.22	< 0.005	< 0.005	0.01	3.26
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

3.5. Grading (2025) - 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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622

Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
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	0.78	0.66	6.10	5.82	0.01	0.25	—	0.25	0.23	—	0.23	—	1,356	1,356	0.06	0.01	—	1,361
Dust From Material Movement	—	—	—	—	—	—	1.89	1.89	—	0.75	0.75	—	—	—	—	—	—	—
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	0.14	0.12	1.11	1.06	< 0.005	0.05	—	0.05	0.04	—	0.04	—	224	224	0.01	< 0.005	—	225

Dust From Material Movement	—	—	—	—	—	—	0.35	0.35	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.11	0.10	1.91	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	297	297	0.01	0.01	1.03	301
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	0.09	0.08	0.11	1.08	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	0.01	0.01	0.03	256
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	0.05	0.05	0.00	0.01	0.01	—	55.5	55.5	< 0.005	< 0.005	0.09	56.2
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	—	9.19	9.19	< 0.005	< 0.005	0.02	9.31
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

3.7. Building Construction (2025) - Unmitigated

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

Location	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	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.51	0.64	< 0.005	0.02	—	0.02	0.02	—	0.02	—	117	117	< 0.005	< 0.005	—	118
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	0.01	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	19.4	19.4	< 0.005	< 0.005	—	19.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.62	0.55	0.78	7.51	0.00	0.00	1.81	1.81	0.00	0.42	0.42	—	1,751	1,751	0.08	0.07	0.18	1,774
Vendor	0.08	0.06	1.94	0.82	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,713	1,713	0.02	0.23	0.12	1,782
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	0.03	0.03	0.04	0.46	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	91.6	91.6	< 0.005	< 0.005	0.15	92.8
Vendor	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	83.8	83.8	< 0.005	0.01	0.10	87.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.2	15.2	< 0.005	< 0.005	0.02	15.4
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	0.02	14.4
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

3.9. Building Construction (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	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
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	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
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	0.91	0.77	7.04	9.26	0.02	0.27	—	0.27	0.25	—	0.25	—	1,712	1,712	0.07	0.01	—	1,718
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	1.28	1.69	< 0.005	0.05	—	0.05	0.05	—	0.05	—	283	283	0.01	< 0.005	—	284
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	0.70	0.63	0.66	12.3	0.00	0.00	1.81	1.81	0.00	0.42	0.42	—	2,015	2,015	0.08	0.07	6.44	2,044
Vendor	0.09	0.06	1.73	0.75	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,681	1,681	0.02	0.23	4.40	1,754
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	0.59	0.52	0.72	6.96	0.00	0.00	1.81	1.81	0.00	0.42	0.42	—	1,715	1,715	0.03	0.07	0.17	1,737
Vendor	0.08	0.06	1.86	0.78	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,682	1,682	0.02	0.23	0.11	1,751
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	0.44	0.39	0.47	6.21	0.00	0.00	1.29	1.29	0.00	0.30	0.30	—	1,310	1,310	0.02	0.05	1.99	1,326
Vendor	0.06	0.04	1.30	0.54	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,201	1,201	0.01	0.16	1.35	1,252
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	0.08	0.07	0.09	1.13	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	217	217	< 0.005	0.01	0.33	220
Vendor	0.01	0.01	0.24	0.10	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	199	199	< 0.005	0.03	0.22	207
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

3.11. Building Construction (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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
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	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
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	0.88	0.74	6.71	9.24	0.02	0.24	—	0.24	0.22	—	0.22	—	1,712	1,712	0.07	0.01	—	1,718
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	0.16	0.13	1.22	1.69	< 0.005	0.04	—	0.04	0.04	—	0.04	—	283	283	0.01	< 0.005	—	284
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	0.66	0.60	0.60	11.4	0.00	0.00	1.81	1.81	0.00	0.42	0.42	—	1,975	1,975	0.02	0.07	5.82	2,001
Vendor	0.09	0.06	1.65	0.72	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,643	1,643	0.02	0.22	4.07	1,713
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	0.56	0.50	0.66	6.48	0.00	0.00	1.81	1.81	0.00	0.42	0.42	—	1,682	1,682	0.02	0.07	0.15	1,702
Vendor	0.08	0.06	1.77	0.74	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,645	1,645	0.02	0.22	0.11	1,710
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	0.42	0.37	0.42	5.80	0.00	0.00	1.29	1.29	0.00	0.30	0.30	—	1,284	1,284	0.02	0.05	1.80	1,300
Vendor	0.06	0.04	1.23	0.51	0.01	0.02	0.33	0.35	0.02	0.09	0.11	—	1,174	1,174	0.01	0.16	1.25	1,222
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	0.08	0.07	0.08	1.06	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	213	213	< 0.005	0.01	0.30	215
Vendor	0.01	0.01	0.23	0.09	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	194	194	< 0.005	0.03	0.21	202
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

3.13. Building Construction (2028) - 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	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.18	0.99	8.92	12.9	0.02	0.30	—	0.30	0.28	—	0.28	—	2,397	2,397	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.55	4.93	7.14	0.01	0.17	—	0.17	0.15	—	0.15	—	1,323	1,323	0.05	0.01	—	1,328
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	0.12	0.10	0.90	1.30	< 0.005	0.03	—	0.03	0.03	—	0.03	—	219	219	0.01	< 0.005	—	220
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	0.64	0.57	0.54	10.7	0.00	0.00	1.81	1.81	0.00	0.42	0.42	—	1,938	1,938	0.02	0.07	5.24	1,963
Vendor	0.07	0.05	1.58	0.68	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,604	1,604	0.02	0.22	3.76	1,673
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	0.49	0.48	0.60	6.01	0.00	0.00	1.81	1.81	0.00	0.42	0.42	—	1,651	1,651	0.02	0.07	0.14	1,671
Vendor	0.07	0.04	1.70	0.71	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,606	1,606	0.02	0.22	0.10	1,671
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	0.28	0.28	0.30	4.17	0.00	0.00	1.00	1.00	0.00	0.23	0.23	—	973	973	0.01	0.04	1.25	986
Vendor	0.04	0.03	0.91	0.38	0.01	0.01	0.26	0.27	0.01	0.07	0.08	—	886	886	0.01	0.12	0.90	923
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	0.05	0.05	0.05	0.76	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	161	161	< 0.005	0.01	0.21	163
Vendor	0.01	< 0.005	0.17	0.07	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	147	147	< 0.005	0.02	0.15	153
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

3.15. Paving (2028) - 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	0.82	0.69	6.63	9.91	0.01	0.26	—	0.26	0.24	—	0.24	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.12	0.10	1.00	1.49	< 0.005	0.04	—	0.04	0.04	—	0.04	—	228	228	0.01	< 0.005	—	228
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.18	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.7	37.7	< 0.005	< 0.005	—	37.8
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.05	0.05	0.06	0.65	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	179	179	< 0.005	0.01	0.01	181
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	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.8	28.8	< 0.005	< 0.005	0.04	29.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	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	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.76	4.76	< 0.005	< 0.005	0.01	4.82
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

3.17. Architectural Coating (2028) - 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	0.13	0.11	0.81	1.12	< 0.005	0.02	—	0.02	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	55.6	55.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.57	1.57	< 0.005	< 0.005	—	1.57
Architectural Coatings	0.65	0.65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.26	0.26	< 0.005	< 0.005	—	0.26
Architectural Coatings	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.10	0.10	0.12	1.20	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	330	330	< 0.005	0.01	0.03	334
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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.14	4.14	< 0.005	< 0.005	0.01	4.19
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	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.69	0.69	< 0.005	< 0.005	< 0.005	0.69
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

3.19. Architectural Coating (2029) - 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	0.12	0.10	0.79	1.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	134	134	0.01	< 0.005	—	134

Architectural Coating	55.6	55.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.02	0.01	0.11	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.9
Architectural Coatings	7.84	7.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.11	3.11	< 0.005	< 0.005	—	3.13
Architectural Coatings	1.43	1.43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.11	1.13	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	324	324	< 0.005	0.01	0.02	328
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	0.01	0.01	0.01	0.20	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.8	48.8	< 0.005	< 0.005	0.06	49.4
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	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.08	8.08	< 0.005	< 0.005	0.01	8.19
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

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	25.5	23.7	24.6	256	0.73	0.38	73.1	73.5	0.36	18.5	18.9	—	74,997	74,997	1.86	3.19	18.9	76,014
Total	25.5	23.7	24.6	256	0.73	0.38	73.1	73.5	0.36	18.5	18.9	—	74,997	74,997	1.86	3.19	18.9	76,014
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	22.6	20.8	26.7	177	0.65	0.38	73.1	73.5	0.36	18.5	18.9	—	66,738	66,738	1.94	3.27	0.49	67,762
Total	22.6	20.8	26.7	177	0.65	0.38	73.1	73.5	0.36	18.5	18.9	—	66,738	66,738	1.94	3.27	0.49	67,762

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	3.92	3.61	4.30	33.8	0.12	0.06	12.3	12.3	0.06	3.11	3.18	—	10,670	10,670	0.29	0.49	1.25	10,824
Total	3.92	3.61	4.30	33.8	0.12	0.06	12.3	12.3	0.06	3.11	3.18	—	10,670	10,670	0.29	0.49	1.25	10,824

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	2,256	2,256	0.29	0.03	—	2,274
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,256	2,256	0.29	0.03	—	2,274
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	2,256	2,256	0.29	0.03	—	2,274
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,256	2,256	0.29	0.03	—	2,274
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	374	374	0.05	0.01	—	376
Total	—	—	—	—	—	—	—	—	—	—	—	—	374	374	0.05	0.01	—	376

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	0.42	0.21	3.81	3.20	0.02	0.29	—	0.29	0.29	—	0.29	—	4,542	4,542	0.40	0.01	—	4,555
Total	0.42	0.21	3.81	3.20	0.02	0.29	—	0.29	0.29	—	0.29	—	4,542	4,542	0.40	0.01	—	4,555
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	0.42	0.21	3.81	3.20	0.02	0.29	—	0.29	0.29	—	0.29	—	4,542	4,542	0.40	0.01	—	4,555
Total	0.42	0.21	3.81	3.20	0.02	0.29	—	0.29	0.29	—	0.29	—	4,542	4,542	0.40	0.01	—	4,555
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	0.08	0.04	0.69	0.58	< 0.005	0.05	—	0.05	0.05	—	0.05	—	752	752	0.07	< 0.005	—	754
Total	0.08	0.04	0.69	0.58	< 0.005	0.05	—	0.05	0.05	—	0.05	—	752	752	0.07	< 0.005	—	754

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	7.06	7.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.84	0.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	2.56	2.36	0.12	14.4	< 0.005	0.03	—	0.03	0.02	—	0.02	—	59.0	59.0	< 0.005	< 0.005	—	59.2
Total	10.5	10.3	0.12	14.4	< 0.005	0.03	—	0.03	0.02	—	0.02	—	59.0	59.0	< 0.005	< 0.005	—	59.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	7.06	7.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.84	0.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	7.90	7.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.29	1.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.15	0.15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.23	0.21	0.01	1.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.82	4.82	< 0.005	< 0.005	—	4.84
Total	1.67	1.65	0.01	1.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.82	4.82	< 0.005	< 0.005	—	4.84

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	37.4	66.1	103	3.84	0.09	—	227
Total	—	—	—	—	—	—	—	—	—	—	—	37.4	66.1	103	3.84	0.09	—	227
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	37.4	66.1	103	3.84	0.09	—	227
Total	—	—	—	—	—	—	—	—	—	—	—	37.4	66.1	103	3.84	0.09	—	227
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	6.19	10.9	17.1	0.64	0.02	—	37.6
Total	—	—	—	—	—	—	—	—	—	—	—	6.19	10.9	17.1	0.64	0.02	—	37.6

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	1,014	0.00	1,014	101	0.00	—	3,547
Total	—	—	—	—	—	—	—	—	—	—	—	1,014	0.00	1,014	101	0.00	—	3,547
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Health Club	—	—	—	—	—	—	—	—	—	—	—	1,014	0.00	1,014	101	0.00	—	3,547
Total	—	—	—	—	—	—	—	—	—	—	—	1,014	0.00	1,014	101	0.00	—	3,547
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	168	0.00	168	16.8	0.00	—	587
Total	—	—	—	—	—	—	—	—	—	—	—	168	0.00	168	16.8	0.00	—	587

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.58	1.58
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Health Club	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.26	0.26

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	5/1/2025	7/10/2025	5.00	50.0	—
Site Preparation	Site Preparation	7/11/2025	8/22/2025	5.00	30.0	—
Grading	Grading	8/23/2025	12/6/2025	5.00	75.0	—
Building Construction	Building Construction	12/7/2025	10/8/2028	5.00	740	—
Paving	Paving	10/9/2028	12/25/2028	5.00	55.0	—
Architectural Coating	Architectural Coating	12/26/2028	3/13/2029	5.00	55.0	—

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
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45

Building Construction	Tractors/Loaders/Back	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	5.76	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	139	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	54.1	10.2	HHDT,MHDT

Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	27.7	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	495,000	165,000	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	25,000	—

Site Preparation	0.00	0.00	45.0	0.00	—
Grading	0.00	0.00	225	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Health Club	0.00	0%
Health Club	0.00	0%
Health Club	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005
2027	0.00	346	0.03	< 0.005
2028	0.00	346	0.03	< 0.005
2029	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Health Club	6,586	4,174	5,346	2,213,464	62,566	39,652	50,786	21,027,610
Health Club	2,634	1,670	2,138	885,386	25,026	15,861	20,315	8,411,044

Health Club	1,647	1,044	1,336	553,366	15,642	9,913	12,697	5,256,903

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	495,000	165,000	—

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Health Club	1,913,814	261	0.0330	0.0040	8,590,065
Health Club	765,526	261	0.0330	0.0040	3,436,026
Health Club	478,454	261	0.0330	0.0040	2,147,516

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Health Club	11,828,629	0.00
Health Club	4,731,452	0.00
Health Club	2,957,157	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Health Club	1,140	—
Health Club	456	—
Health Club	285	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Health Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Health Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Health Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Health Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Health Club	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

Health Club	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	25.1	annual days of extreme heat
Extreme Precipitation	0.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.21	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	91.1
AQ-PM	7.58
AQ-DPM	28.6
Drinking Water	45.4
Lead Risk Housing	2.24
Pesticides	49.4
Toxic Releases	1.81
Traffic	68.7
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	2.88
Cardio-vascular	2.62
Low Birth Weights	54.6
Socioeconomic Factor Indicators	—

Education	31.7
Housing	12.0
Linguistic	3.74
Poverty	24.4
Unemployment	—

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	61.52957783
Employed	79.36609778
Median HI	71.08943924
Education	—
Bachelor's or higher	79.22494546
High school enrollment	100
Preschool enrollment	95.7141024
Transportation	—
Auto Access	46.70858463
Active commuting	43.11561658
Social	—
2-parent households	61.41408957
Voting	82.04799179
Neighborhood	—
Alcohol availability	93.51982548
Park access	18.79892211
Retail density	23.90606955
Supermarket access	22.46888233

Tree canopy	36.03233671
Housing	—
Homeownership	89.96535352
Housing habitability	98.83228538
Low-inc homeowner severe housing cost burden	71.74387271
Low-inc renter severe housing cost burden	99.08892596
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	81.00859746
Arthritis	0.0
Asthma ER Admissions	96.0
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	56.7
Cognitively Disabled	7.9
Physically Disabled	12.7
Heart Attack ER Admissions	86.8
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
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	92.8
Elderly	0.8
English Speaking	82.5
Foreign-born	40.8
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	54.1
Traffic Density	32.2
Traffic Access	23.0
Other Indices	—
Hardship	18.4
Other Decision Support	—
2016 Voting	82.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	5.00
Healthy Places Index Score for Project Location (b)	80.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

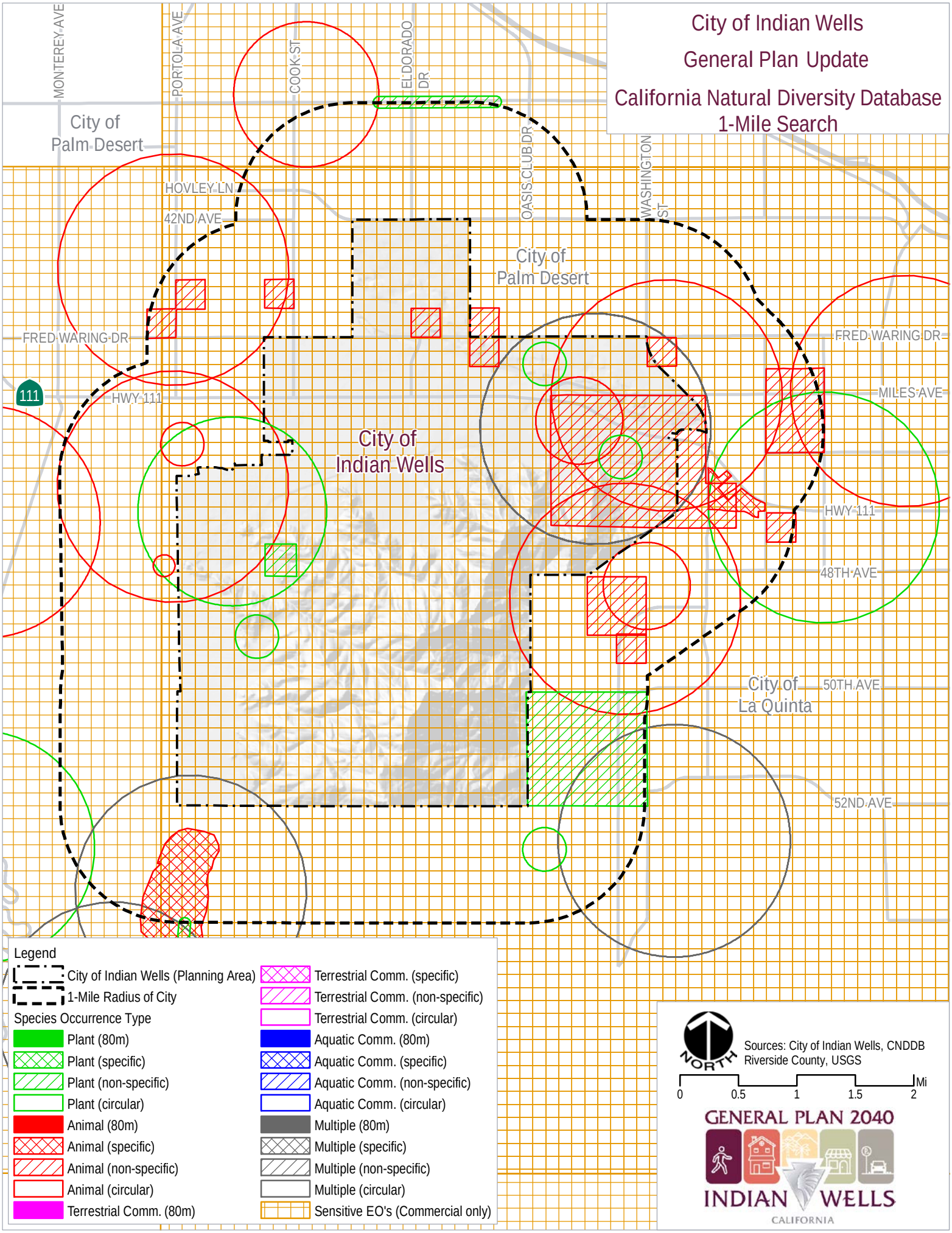
No Health & Equity Custom Measures created.

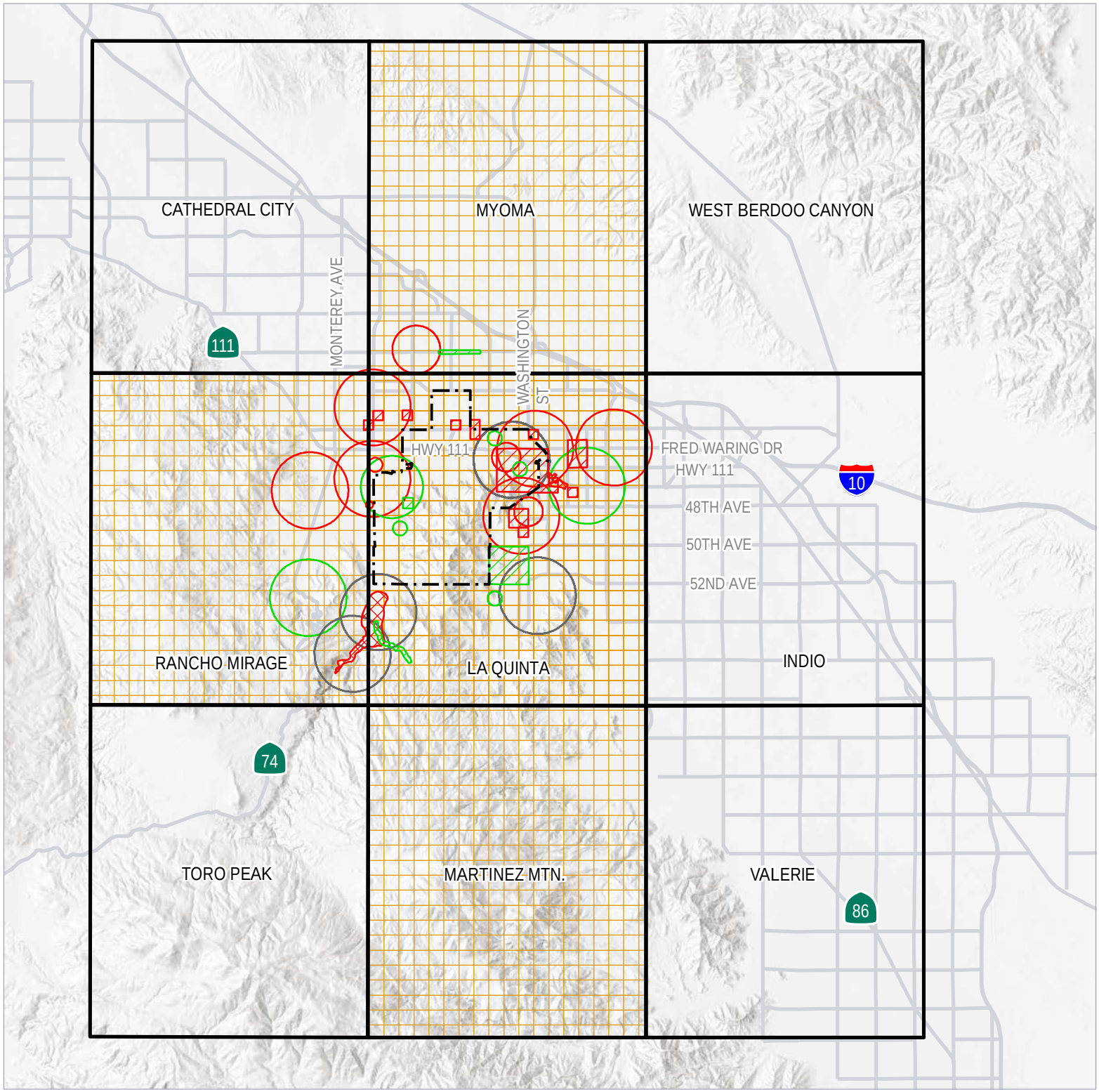
8. User Changes to Default Data

Screen	Justification
Land Use	Land uses selected on a best fit basis. Building square footage estimated based on total lot sizes.

Appendix C

California Natural Diversity Database


City of Indian Wells
General Plan Update
California Natural Diversity Database
1-Mile Search
MONTEREY AVE
PORTOLA AVE
COOK ST
ELDORADO DR
OASIS CLUB DR
WASHINGTON ST
City of Palm Desert
HOVLEY LN
42ND AVE
FRED WARING DR
HWY 111
111
MILES AVE
City of Indian Wells
48TH AVE
City of La Quinta
50TH AVE
52ND AVE
Legend
City of Indian Wells (Planning Area)
1-Mile Radius of City
Species Occurrence Type
Plant (80m)
Plant (specific)
Plant (non-specific)
Plant (circular)
Animal (80m)
Animal (specific)
Animal (non-specific)
Animal (circular)
Terrestrial Comm. (80m)
Terrestrial Comm. (specific)
Terrestrial Comm. (non-specific)
Terrestrial Comm. (circular)
Aquatic Comm. (80m)
Aquatic Comm. (specific)
Aquatic Comm. (non-specific)
Aquatic Comm. (circular)
Multiple (80m)
Multiple (specific)
Multiple (non-specific)
Multiple (circular)
Sensitive EO's (Commercial only)
NORTH
Sources: City of Indian Wells, CNDDB
Riverside County, USGS
0
0.5
1
1.5
2
Mi
GENERAL PLAN 2040
INDIAN WELLS
CALIFORNIA



City of Indian Wells General Plan Update California Natural Diversity Database 9-Quad Search

Legend

- City of Indian Wells (Planning Area)
- USGS 7.5-Min Quadrangles

Species Occurrence Type

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

NORTH

Sources: City of Indian Wells, CNDDB Riverside County, USGS

0 1.75 3.5 5.25 7 Mi

GENERAL PLAN 2040

INDIAN WELLS

CALIFORNIA

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Appendix D

Cultural and Paleontological Resource Study
Duke Cultural Resources Management, LLC

Cultural and Paleontological Resource Study for the General Plan Update City of Indian Wells, Riverside County

Prepared for:

City of Indian Wells
Community Development Department
44-950 Eldorado Drive
Indian Wells, CA 92210

De Novo Planning Group
180 East Main St. #108
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Prepared by:

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DUKE CRM Project Number: C-0330

January 16, 2021

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CONFIDENTIAL APPENDIX

Appendix E: City of Indian Wells Cultural Resources Map

ABBREVIATIONS

AB 52	Assembly Bill 52
BLM	Bureau of Land Management
BP	Before Present
CEQA	California Environmental Quality Act
CHBC	California Historical Building Code
CHL	California Historical Landmarks
City	City of Indian Wells
CRHR	California Register of Historical Resources
EIC	Eastern Information Center
GLO	Government Land Office
IWGPU	Indian Wells General Plan Update
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
Points	California Points of Historical Interest
Project	City of Indian Wells & Sphere of Influence
RPA	Register of Professional Archaeologists
SB 18	Senate Bill 18
TCR	Tribal Cultural Resource

MANAGEMENT SUMMARY

DUKE Cultural Resources Management, LLC (DUKE CRM) is under contract to De Novo Planning Group, to conduct a cultural and paleontological resources assessment for the City of Indian Wells General Plan Update (IWGPU or Project). The Project includes the City of Indian Wells (City) in total comprising approximately 9,240 acres.

The purpose of this report is to inventory the previously recorded cultural and paleontological resources in the City to assess the potential for impacts to these resources during implementation of the IWGPU. This effort was completed in compliance with the California Environmental Quality Act (CEQA) and the City of Indian Wells Title 22 Chapter 16 Cultural Resource Preservation ordinance. This report also updates the status of recorded paleontological, archaeological, and historic resources located within the City.

DUKE CRM requested a cultural resources records search from the Eastern Information Center (EIC). Records from the EIC indicate that there are 72 confidential cultural resources mapped within the City. The resources include 38 prehistoric archaeological sites, 18 prehistoric isolates, three (3) multicomponent sites, seven (7) historic archaeological sites, one (1) historic isolate, and five (5) historic built environment resources. Of the five (5) historic built environment resources listed within the Built Environment Resource Directory, three (3) were determined potentially eligible for inclusion on the National Register of Historic Places. A city-wide reconnaissance resource survey was conducted. A combination of digital, windshield, and reconnaissance survey methods were employed. No cultural resources were recorded, though additional cultural resources are likely to exist.

DUKE CRM requested paleontological records searches for the Project from the Western Science Center and fossil localities within a three-mile radius were investigated on the online University of California Museum of Paleontology and San Diego Natural History Museum online collections, Paleobiology Database, FAUNMAP, and other available published resources. No fossil localities were identified within the City limits. Fossil localities have been recorded in deposits similar in age to those underlying the Project area in the Coachella Valley outside the City limits.

DUKE CRM recommends continued compliance with the cultural and paleontological resource management goals in CEQA and the existing 1996 General Plan. A substantial recent change to CEQA is the addition of a separate resource category, Tribal Cultural Resources (TCR). DUKE CRM recommends the inclusion of Native Americans and the consideration of TCRs in all CEQA projects and in any update to the City's Cultural Resource Preservation ordinance.

INTRODUCTION

DUKE Cultural Resources Management, LLC (DUKE C R M) is under contract to De Novo Planning Group to conduct a cultural and paleontological resources assessment for the City of Indian Wells General Plan Update Project (IWGPU or Project). The General Plan area consists of the City of Indian Wells (City) comprising approximately 9,336 acres. The purpose of this report is to inventory recorded paleontological, cultural, and historical resources in order to assess the potential for impacts to them during the implementation of the IWGPU and to assist the City in managing these resources in the City's long-term growth and development. This effort was completed in compliance with the California Environmental Quality Act (CEQA) that requires General Plans to be updated within a specific timeframe. However, California Government Code Section 65361 authorizes the Director of OPR to grant general plan extensions to cities and counties.

Project Location

The City of Indian Wells is located in the Coachella Valley, approximately 17 miles east of the City of Palm Springs, and 30 miles west from the present-day shoreline of the Salton Sea (Appendix A, Map 1). Regional access is provided by the Interstate 10, State Route (SR) 74 and SR-111. The City is primarily located in Township 5 south, Range 6 east in sections 14, 15, 21- 35. Additional portions of the City are located in Township 5 south, Range 7 east in sections 19 and 30 and Township 6 south, Range 6 east in sections 2-4, as depicted on the USGS *La Quinta, Calif.* 7.5 minute-quadrangle (Appendix A, Map 2). The central east-west artery of the City is SR-111. Generally, the area of the IWGPU is nestled between the cities of Palm Desert to the north and west, La Quinta to the east, and unincorporated Riverside County Land to the south and west. The developed areas of the City are predominantly the northern and western areas with much of the City undeveloped rugged desert mountains (Appendix A, Map 3).

Project Description

The Project brings the City of Indian Wells General Plan (City of Indian Wells 1996) and subsequent updates up to date with the goals and polices for the cultural, historic resources and paleontological within its jurisdiction and to assist the City with their long-term growth and development. The 1996 General Plan committed to maintain a balance of preservation and development (City of Indian Wells 1996). The City has made a concerted effort to conserve and protect the area's resources for future generations because of the potential effect of development on the environment, including cultural and paleontological resources.

The policies developed in 1996 and further developed through subsequent updates to the General Plan are recommended to be revised to reflect the changes to CEQA. To preserve the cultural and historical heritage of the City, identification of existing resources and anticipated locations of unidentified resources is critical. The Paleontological sensitivity of the City may be an unrecognized resource. Cultural, Tribal Cultural Resources (TCRs), historical, and paleontological are defined below.

Regulatory Setting

Paleontological Resources

The term paleontological resource refers to any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth (Society for Vertebrate Paleontology [SVP] 2019).

Cultural Resources

Cultural resources are tangible remains of past human activity. These may include buildings, structures, prehistoric and historic archaeological sites, historic or prehistoric objects, rock art, earthworks, canals, and landscapes. These nonrenewable resources may yield unique information about past societies and environments and provide answers for modern day social and conservation problems. A cultural resource is not necessarily a historical resource (i.e., significant, or eligible for the California Register of Historical Resources [CRHR]). Eligibility for the CRHR is addressed below.

Historical Resources
A historical resource is defined as any resource that is either listed in or determined eligible for the CRHR, included in a local register of historical resources or identified as significant in an historical resources survey (CEQA, PRC § 21084.1), and can be any of the above-listed types of cultural resources.

Tribal Cultural Resources
TCRs are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the CRHR or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant (CEQA, PRC § 21074).

State Regulations

California Environmental Quality Act of 1970, as amended
The California Environmental Quality Act of 1970 is legislation that requires a Lead Agency to evaluate if a proposed project would have a significant adverse effect on the environment, including historical resources (defined above). CEQA Guidelines pertaining to historical resources (Section 15064.5(b)(1)) state that "A substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired".

California Register of Historic Resources
The CRHR is the state-maintained list of cultural resources found to be historically significant. The CRHR is maintained by the California Department of Parks and Recreation. Much like the National Register of Historic Places (NRHP), the CRHR has four major criteria, at least one of which a cultural resource must meet to be eligible for inclusion on the list:

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

A historical resource that is considered eligible for the CRHR should also retain sufficient integrity of to convey the significance of the historic resource. These include aspects of location, design, setting, materials, workmanship, feeling and association, though not all aspects of integrity need be present. To determine which of these factors are most important depends on the property being evaluated and which particular CRHR criterion or criteria under which the resource is considered eligible for listing. The period of significance is the period of time in which significant events or themes occurred. Alterations and impacts may affect the period of significance and overall integrity of the resource and its eligibility for the CRHR.

Furthermore, CEQA requires the lead agency consider whether or not a project will significantly affect unique archaeological resources that may be ineligible for listing in the CRHR and to avoid these unique archaeological resources when possible or mitigate any effects to less than significant levels (PRC § 21083.2). As stated in CEQA, a unique archaeological resource means an archaeological artifact, object, or site that clearly demonstrates with a high probability that it meets, without merely adding to the current body of knowledge, any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC § 21083.2(a); CEQA Guidelines section 15064.5(c)(4).) However, if a non-unique archaeological resource qualifies as a TCR (PRC § 21074(c); 21083.2(h)), further consideration of significant impacts is required.

In addition, whenever human remains are uncovered, the county coroner must be called to assess the remains (Section 15064.5[e] of the CEQA Guidelines). If the county coroner determines that the remains are those of a Native American, the Native American Heritage Commission (NAHC) must be contacted within 24 hours, and the provisions for treating or disposing of the remains and any associated grave goods as described in Section 15064.5 of the CEQA Guidelines must be followed.

California Historical Landmarks

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have been determined to have statewide historical significance. These resources are evaluated according to four criteria:

1. The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
2. Associated with an individual or group having a profound influence on the history of California.
3. A prototype of, or an outstanding example of, a period, style, architectural movement or construction; or is one of the more notable works, or the best surviving work in a region, of a pioneer architect, designer, or master builder.

CHLs must also be approved for designation by the County Board of Supervisors or the City/Town Council in which the resource is located; must be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks. The effect of designation on a property or resource is:

- Limited protection against alteration or demolition. Environmental review may be required under CEQA if a property is threatened by a project. The relevant local planning agency should be contacted for more information.
- If the municipality or local government participates in the Mills Act Program, then a historic property owner may enter into a contract with the local assessor for property tax reduction.
- Local building inspector must grant code alternative provided under the California Historical Building Code (CHBC, State of California 2019). Registration will be recorded on the property deed.
- Automatic listing in CRHR.
- Bronze plaque at site (underwritten by local sponsor) ordered through the California Office of Historic Preservation (OHP); highway directional sign available through local Department of Transportation district office.

A designated CHL needs to have the written consent of the property owner, and the local government is given 60 days for comment on any application for designation prior to the State Historical Resources Commission considers the nomination.

California Points of Historic Interest

California Points of Historical Interest (Points) are sites, buildings, features, or events that are of local (City or County) significance and have anthropological, cultural, military, political, architectural, economic, scientific, or technical, religious, experimental, or other value. Points designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR.

No resource may be designated as both a CHL and a Point. If a Point is subsequently granted status as a CHL, the Point designation will be retired. To be eligible for designation as a Point, a resource must meet at least one of the following criteria:

1. The first, last, only, or most significant of its type within the local geographic region (City or County).
2. Associated with an individual or group having a profound influence on the history of the local area.

3. A prototype of, or an outstanding example of, a period, style, architectural movement, or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer or master builder.

The effect of designation on a property or resource is:

- Limited protection against alteration or demolition. Environmental review may be required under CEQA if a property is threatened by a project. The relevant local planning agency should be contacted for more information.
- If the municipality or local government participates in the Mills Act Program, then a historic property owner may enter into a contract with the local assessor for property tax reduction.
- Local building inspector must grant code alternative provided under State Historic Building Code. Registration will be recorded on the property deed.

A designated Point needs to have the written consent of the property owner, and the local government is given 60 days for comment on any application for designation prior to the State Historical Resources Commission considers the nomination.

California Historical Building Code

The CHBC is defined by Sections 18950 to 18961 of Division 13, Part 2.7 of the Health and Safety Code. The CHBC provides guidelines and regulations for the preservation and contemporary use of historic structures and buildings that are considered "qualified historical buildings or structures." The CHBC specifically provides alternative building regulations and guidelines for permitting repairs, alterations, and additions necessary for preservation, rehabilitation, relocation, related construction, change of use, or continued use.

Section 8-201 of the CHBC (State of California 2019) defines a "qualified historical building or structure" as "any structure or property, collection of structures, and their associated sites deemed of importance to the history, architecture, or culture of an area by an appropriate local or state governmental jurisdiction. This includes structures on existing or future national, state, or local historical registers or official inventories, such as the NRHP, CRHR, State Historical Landmarks, State Points of Historical Interest, and city or county registers or inventories of historical or architecturally significant sites, places, historic districts, or landmarks.

Mills Act

The City of Indian Wells authorized the creation of a Mills Act Program in 2015 (22.16.100 Preservation incentive(s)) for the preservation of historically significant properties. The Mills Act of 1972 is an economic incentive program by the State of California to encourage private property owners to restore and preserve qualified historic buildings. Local governments (Counties and Municipalities) can choose to implement and administer contracts with property owners to provide tax abatement, establish their own criteria for qualified historic buildings, and determine how many contracts they will allow in their jurisdiction. California State Codes relating to the Mills Act include the California Government Code, Article 12, Sections 50280 – 50290 and the California Revenue and Taxation Code, Article 1.9, Sections 439 – 439.4.

The Mills Act is a formal agreement executed between the City of Indian Wells and the property owner for a revolving, automatic ten-year term. Owners of qualified historic properties may apply for the program if they pledge to rehabilitate and maintain the historical and architectural character of their properties for the perpetual ten-year term of the contract. A qualified historic property in the City is a property listed on the NRHP, the CRHR, or the California Historical Landmarks (CHL).

Contracts are renewed each year so that the term of the contract can extend for ten years automatically. Under this contract, property owners agree to restore, maintain, and protect the property in accordance with specific historic preservation standards and other conditions identified in the contract. Inspections by City officials every five years ensure proper upkeep of the property to the standards included in the contract. Either the property owner or the City may elect not to renew for any reason. The effect of non-renewal is to

terminate the contract at the end of the current ten-year term. The owner may also petition the City to initiate an immediate cancellation. If cancelled, a penalty is imposed. The City may also cancel the contract, but only in the case of breach of the contract conditions. The contract is transferred to new owners if the property is sold and is binding to all successive owners.

Participation in the Mills Act is a benefit to qualified property owners, especially for recent buyers of historic properties but also for current owners of historic buildings who have made major improvements to their properties. An income approach to value rather than by the standard market approach determines the appraised value. The income approach, divided by a capitalization rate, determines the assessed value of the property. In general, the income potential for an owner-occupied residential property is calculated by examining comparable rents for similar properties in the area, while the income amount on a commercial property is based on actual rent received. Because rental values vary from area to area, actual property savings may vary. In addition, as counties are required to assess all property annually, Mills Act properties may realize slight increases in property taxes each year.

Senate Bill 18

Senate Bill 18 (SB 18) states that prior to the amendment or adoption of any general plan or specific plan or the designation of open space land proposed on or after March 1, 2005, the local or county government shall conduct consultation with California Native American tribes for the purpose of preserving or mitigating impacts to Cultural Places. A Cultural Place is defined as:

- Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine (PRC § 5097.9), or;
- Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the CRHR pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, or any archaeological or historic site (PRC § 5067.995).

The intent of SB 18 is to establish "meaningful consultation" between tribal governments and local governments (government-to-government) at the earliest possible point in the planning process so that Cultural Places can be identified and preserved and to determine the necessary levels of confidentiality regarding Cultural Place locations and uses. SB 18 is not part of CEQA.

Assembly Bill 52

Assembly 52 (AB 52) required an update to Appendix G (Initial Study Checklist) of the CEQA Guidelines to include questions related to impacts to TCRs. The law went into effect on July 1, 2015 with the changes to Appendix G approved on September 27, 2016. The Lead Agency would now also be charged with engaging with tribal governments at the earliest possible point in the planning process so that TCRs can be identified and preserved and to determine the necessary levels of confidentiality regarding TCR locations and uses.

Municipal Regulations: City of Indian Wells General Plan (1996)

The City of Indian Wells General Plan (1996) and subsequent updates attempted to establish an outline for the 20 -year development of the planning area of the City. The General Plan intended to direct the City toward maintaining and improving a socially cohesive, economically viable, and physically attractive community through policy statements. As stated, the goal was to "ensure the citizens' health, safety, and welfare are maintained at exceptional levels into the next century".

The 1996 City of Indian Wells General Plan addresses cultural resources in Chapter III, Section A, Conservation and Open Space and this section was updated in March 2009. The addition of a Conservation and Open Space element is mandated under state government code section 65302(d). The overall purpose of the Chapter III is to conserve and protect the area's resources increasing public concern for environmental quality, such as clean water and air, and the prevention and control of pollution, in light of growth and urbanization. The Conservation and Open Space element:

- "assures the protection of the pristine mountainous areas that serve as a backdrop for the community. The Conservation and Open Space Element promotes the expansion of golf course use, the preservation of a landscaped open space corridor along Highway 111, and the preservation and enjoyment of the surrounding mountain areas. (City of Indian Wells 1996: IA-9)"

Paleontological Resource Goals

The General Plan (City of Indian Wells 1996) recognized that paleontological resources are the non-renewable remains or traces of prehistoric plant and animal life separate from those left by ancient people. The General Plan also recognized that paleontological resources are protected under the CEQA and that project(s) may have a significant impact on the environment if it disrupts or adversely affects a paleontological resource.

The General Plan (1996: IIIA-8 – IIA-9) found that fossils are mainly found in the sedimentary formations of the western Coachella Valley, but that in the City boundaries alluvial, fluvial, and aeolian deposits have a low potential for yielding fossils. A low sensitivity for paleontological resources within the City was based upon a negative record search conducted at the University of California, Riverside. A separate records search at the San Bernardino County Museum found that no paleontological studies or resources had been conducted within the City. What likely was a subsequent study, paleontological resources were found at an archaeological site (CA-RIV-5876) and in areas near this archaeological site. Overall, it was assessed that the northeastern portion of the City, below an elevation of 200 feet, has an undetermined potential for containing paleontological resources and that studies should be undertaken to determine the possibility of resources in these elevations. No additional recommendations, plans, or policies were implemented.

Cultural Resource Goals

The General Plan (City of Indian Wells 1996)) stated that in Goal IIIA3 for Cultural resources the goal was to preserve significant historic, cultural, and paleontological resources. To institute this goal, the following policies to implement the goal:

- IIIA3.1 Review all public and private development projects in areas of high potential for archaeological/ paleontological resources and require strict adherence to CEQA guidelines for environmental documentation and mitigation measures.
- IIIA3.2 Require sites proposed for future development to be evaluated for archaeological and paleontological resources either through a literature search or survey by a certified archaeologist or paleontologist in accordance with CEQA.

In terms of culture and history, the City of Indian Wells General Plan (1996) had various findings. Primary among these were recognition of the Cahuilla people whose language group is within the Cupan subgroup of the Takic language family (Shipley 1978). The traditional territory of the Cahuilla included the shoreline and area inundated by Lake Cahuilla, a large prehistoric lake that was a focus of their settlement as it provided a substantial portion of the resources necessary to live in the dry, hot environment of the Colorado Desert.

On May 16, 1992, the City adopted an Archaeological Resource Policy for the City of Indian Wells. This document includes policy requirements identified in the CEQA Guidelines and establishes a process for the early identification and preservation of cultural resources within the City. No additional goals or policies have been adopted for historic resources.

SETTING

The setting of the Project area composed of environmental, cultural, and historic backgrounds contextualize the findings of the current study. The Project covers 9,336 acres that overlap a limited number of geological, geomorphological, topographic components. Other various factors of the natural setting include water accessibility, climate, and broad patterns of soil development. The prehistoric, ethnographic, and historical settings form the backdrop to human occupation of the Project area. Each of the contextual elements to this study are considered below.

Geomorphological Setting

California is divided into 11 geomorphic provinces, each naturally defined by unique geologic and geomorphic characteristics (Norris and Webb 1976). The Project area is located on the border between the western edge of the Peninsular Ranges geomorphic province and the northwestern tip of the Colorado Desert geomorphic province. The Peninsular Ranges province is distinguished by northwest trending mountain ranges and valleys following faults related to the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and extend north to the San Bernardino – Riverside County line (Norris and Webb 1976), west into the submarine continental shelf, and south to beyond the US-Mexico border and the California state line. The Colorado Desert province is a depressed block between active branches of the San Andreas Fault with the southern extension of the Mojave Desert on the east (California Geological Survey 2006).

Locally, the City of Indian Wells is located within the northern end of the Salton Trough, an inland extension of a Pacific spreading ridge that was responsible for the formation of the San Andreas Fault Zone (SAFZ) (Atwater 1970, Fuis and Mooney 1990). The spreading activity in the trough, combined with the seismic activity associated with the SAFZ, has resulted in the gradual accumulation of sediment in the trough, to a depth of up to 12 km (Fuis and Mooney 1990). The geologic units underlying the City record a combination of basement emplacement in the Mesozoic Era (252 to 66 million years ago [Ma]) and alluvial and fluvial deposition in the Pleistocene (2.5 Ma to 11,700 years ago) and Holocene (11,700 years ago to today) Epochs. Information regarding the specific geologic units and their paleontological sensitivity are discussed in detail in the results section of this report.

Environmental

The Project is broadly located within the Sonoran Basin and Range region and is composed of discontinuous mountain ranges separated by wide alluvial plains. The area has been marginally cleared by agriculture only accounting for 3.2 percent of the region and is dominated by grassland/shrubland communities which cover 92.9 percent. More than 2,500 botanical species, including both annual and perennial trees and shrubs, as well as succulents and cacti are found here (Turner et al. 1995; Calzia and Wilson 2012). Plant species include white bursage (*Ambrosia dumosa*), ocotillo (*Fouquieria splendens*), teddy bear cholla (*Cylindropuntia bigelovii*), range ratany (*Krameria erecta*), barrel cactus (*Opuntia basilaris*), brittlebush (*Encelia farinosa*), staghorn cholla (*Cylindropuntia acanthocarpa*), beavertail cactus (*Opuntia basilaris*), yucca, jojoba (*Simmondsia chinensis*), Mormon tea (*Ephedra nevadensis*), and few junipers. Additionally, forbs such as fiddleneck (*Amsinckia intermedia)*, popcorn flower (*Plagiobothrys tenellus*), desertbells (*Phacelia campanularia*), and desert mariposa lily (*Calochortus kennedyi*) bloom annually during spring (Griffith et al. 2016).

Specifically, the Project is located within the Western Sonoran Mountains and Upper Coachella Valley and Hills ecoregions. Ecoregions denote general similarity in ecosystems and environmental resources. The terrain of (the western Sonoran Mountains) is dissected by dry washes that can flash flood during the infrequent rainfall events. The mountains in this western region receive less summer precipitation than the ranges in Central Sonoran/Colorado Desert Mountains and Arizona Upland/Eastern Sonoran Mountains ecoregions to the east. The Upper Coachella Valley and Hills ecoregion has agricultural lands and the Salton Sea to the south; however, most of the area is surrounded by mountains. Additionally, alluvial deposits cover most of this ecoregion, mantled by sand deposits in some areas. Soil temperatures are hyperthermic and soil moisture regimes are aridic. Elevations range from sea level in the southeast to about 1,800 feet in the Mecca Hills (Griffith et al. 2016).

Cultural

Prehistory

Of the many chronological sequences proposed for southern California, Sutton's synthesis specific to the Colorado Desert provides the most updated chronology in the region. The sequence is derived from earlier sequences by Rogers (1966) and Schaffer (1994) as well as discussions by Love and Dahdul (2002). Currently, there is no evidence of occupation before the Paleoindian period as all sites claiming to date beyond 14,000 BP have been disproven with updated testing methodologies (Schaeffer 1994). The dates listed below are in years before present (BP):

I. Paleoindian (~10,500 – 9,500 BP)
II. San Dieguito (~9,500 – 8,500 BP)
III. Early Archaic (~8,500 – 5,800 BP)
IV. Middle Archaic (~5,000 – 3,500 BP)
V. Late Archaic (~3,000 – 1,300 BP)
VI. Patayan I (~1,250 – 1,150 BP)
VII. Patayan II (~1,000 – 900 BP)
VIII. Peninsular I (~900 – 800 BP)
IX. Peninsular II (~750 – 300 BP)
X. Peninsular III (~200 – 168 BP)

Within the Colorado Desert, the Paleoindian period is characterized as the earliest archaeological sequence (Chartkoff and Chartkoff 1984, Schaeffer 1994). However, there are no known Paleoindian sites in the Coachella Valley, specifically within the City of Indian Wells, and this chronological framework is applied from data collected in adjacent desert and coastal areas of California.

The same is true of the San Dieguito period in the Coachella Valley. Wallace noted similarities between the "Lake Mojave Period" to the north and the "San Dieguito Tradition" and implied that they represent regional variants of an early hunting tradition that prevailed over a wide geographical area (Wallace 1978). Artifacts such as fluted points, crescents, Lake Mojave and Silver Lake points, and leaf shaped projectile points associated with ancient terraces and playas are sparsely found during this time in the southern California deserts (Wallace 1962; von Till Warren et al. 1981; Chandler et al. 2003; Tennyson and Apple 2009). In the Colorado Desert, investigations on the Salton Sea Test Base produced two crescent-shaped artifacts like those in the Lake Mojave Complex which were associated with Late Pleistocene habitation (Apple et al. 1997; Cleland 1998; Wahoff 1999). Additionally, an absence of ground stone and milling stone from this period has been viewed as an indicator of a lack of plant protein in the diet (Schaeffer 1994; Brock and Smith 2004). However, substantial data associated with San Dieguito period are relatively rare in the Colorado Desert (Schaefer and Laylander 2007).

The Early Archaic Period (~8,500 to 5,800 BP) is highly underrepresented in the Colorado Desert compared to southwestern California and Arizona (Schaefer 1994). Very few archaeological remains have been found during this time when the Colorado Desert appeared to have low population densities (Love and Dahdul 2002). Groups living in the desert during this period are characterized as hunter-gatherers who practiced wide-range procurement strategies and produced distinct stemmed or notched point types such as the Pinto Basin projectile point which is often found associated with heavy-keeled scrapers near ephemeral lakes and springs (Brock and Smith 2004; Chandler et al. 2003). The six Pinto projectile points documented during site evaluations conducted at the Salton Sea Test Base are the few artifacts found during the Early Archaic period (Apple et al. 1997).

Very little is known of the Middle Archaic Period (5,000 – 3,500 BP) in the Colorado Desert as well (Love and Dahdul 2002). It is proposed that population growth occurred in the region, but it is based on the transitional Middle Archaic in Arizona, where population density appears to have increased along with mixed forager-collector strategies (Schaefer 1994). Shackley (1986) concluded from obsidian studies and artifact morphology that territorial ranges of social groups were being defined at this time, possibly because of population increase and competition for resources (Wills 1988). Due to a variability of projectile point types, it is possible that groups were competing for resources (Love and Dahdul 2002).

The Late Archaic Period (3,000 – 1,300 BP) coincides with the production of smaller points and the occurrence of late Pinto and Gypsum cultural patterns (Schaefer 1994). The Indian Hill rock-shelter in Anza Borrego Desert State Park contained burials that date to the Late Archaic, and the Yuha burial near Truckhaven, initially dated to a pre-Paleoindian period, have since been confirmed to date to the Archaic period (Schafer 19994; Apple et al. 1997). The small amount of human remains recovered during this time indicate a low population density of hunter gatherer groups who shared strategies and projectile point styles (Schaefer 1994).

The Late Prehistoric Period (1,300 BP - Contact) in the Colorado Desert has been generally represented by the Patayan sequence with the emergence of brown and buff ceramics and agriculture in the region (Waters 1983; Schaefer 1994; Schaefer and Laylander 2007). When Lake Cahuilla began to fill after about 1,070 BP, Sutton suggests groups from the Colorado River area moved west and brought Patayan II pottery and Desert Side-notched points into northern Coachella Valley (Sutton 2011). Additionally, San Luis Rey groups coming from coastal and interior southern California introduced Cottonwood points which created a blend of Patayan II and Palomar traits to form the Peninsular I cultural assemblage (Sutton 2011).

Sites CA-RIV-3005 and CA-RIV-5876 within the Project area represent this period with the predominance of Salton Buff Ware and small amounts of Tizon Brown Ware, Salton Brown, and Colorado/Tumco Buff. An earlier test excavation performed by Alexandrowicz et al. (1998) on CA-RIV-5876 found that the site represented a Late Prehistoric and/or Ethnographic occupation. In addition, radiocarbon dating of a shell fragment from a deteriorated pendant found at CA-RIV-3005 placed prehistoric occupation at 1,000 BP. (Brown 2000).

Peninsular I phase (~900 – 800 BP) settlement systems consisted of generally permanent lakeshore villages that exploited lacustrine resources and created special use sites in various ecozones to exploit terrestrial resources. Wilke's excavation at Myoma Dunes (CA-RIV-1766) contained both Desert Side-notched and Cottonwood Triangular points, LCB pottery, shell beads from both the Pacific and Gulf of California coasts, and considerable evidence of the use of lacustrine resources from shell and coprolites (Wilke 1978). Additionally, site CA-RIV-1530, located within the Project area and three miles from the last high shoreline of Lake Cahuilla consisted of a cremation, a complete Cottonwood Triangular point, chipped stone, fire-affected clay, fire-affected rocks, fish bones, and mammal bones (Dahdul et al. 2003).

Peninsular II phase (ca. 750 – 300 BP) is defined by the appearance of Tizon Brown pottery, a new funerary complex, stone fish traps that were built as lake levels began to fluctuate and begin to decline, and an adoption of a new settlement system (Sutton 2011). Many of these traits can be seen at the CA-RIV-1179 site along the Lake Cahuilla high stand shoreline near La Quinta. The CA-RIV-1179 site contained stone and ceramic straight pipes, no ceramic figurines, a roughly even mixture of Tizon Brown and Salton Buff (Patayan II) pottery, cremations in "containers", very little obsidian (largely from unidentified sources), *Olivella dama* beads, and both lacustrine and terrestrial fauna (Sutton and Wilke 1988; Sutton 2011).

The start of the Peninsular III phase (200 – 160 BP) begins with the disappearance of Lake Cahuilla around 300 BP which causes an abrupt change in settlement and subsistence systems, material culture, mortuary practices, and rock art (Sutton 2011). Paddle-shaped type ceramic figurines found at Tahquitz Canyon mark the beginning of a style specific to the ethnographic Cahuilla and Luiseno known as the "Northern Tradition" (Schaefer 1994). Principal settlements began to relocate away from the former lakeshore to near springs along the fringes of the northern Peninsular Ranges or wells on the desert floor (Sutton 2011). Additionally, special use sites were in upland and desert ecozones and no longer on the lakeshore, a similar system implemented by the ethnographic Cahuilla (Bean 1972, 1978). The Tahquitz Canyon site began as a small Peninsular II upland special purpose site, but when Lake Cahuilla disappeared, the principal settlement population moved from the shorelines and established a Peninsular III settlement that evolved into an ethnohistoric Cahuilla village (Sutton 2011).

Ethnography

The Project is located within the boundaries of the Cahuilla ancestral territory. The Cahuilla Indians are commonly divided by anthropologists into three groups: the Pass Cahuilla of the San Gorgonio Pass-Palm Springs area, the Mountain Cahuilla of the San Jacinto and Santa Rosa Mountains and the Cahuilla Valley, and the Desert Cahuilla of the eastern Coachella Valley. Generally, their territory included the southeast side of the San Bernardino Mountains in the north to the northern Chocolate Mountains and Borrego Springs in the south, and from the Colorado Desert in the east to the northeastern slopes of Palomar Mountain in the west.

The Cahuilla spoke a dialect of the Cupan group of the Takic language family. Shoshonean speakers (a subgroup of the greater Uto-Aztecan family languages) migrated sometime between 3,000 BP – 1500 BP

from the Great Basin region of Nevada, Utah, and eastern California into southern California. This family of languages included what was to become the late-prehistoric Takic language of Cahuilla, the principal linguistic group of the Coachella Valley (Shipley 1978, Love and Dahdul 2002).

Each clan of Cahuilla lived in villages that were independent, politically autonomous from other villages. Numerous lineages were part of a clan, each of which had their own communal area owned within the larger clan area (Bean and Mason 1962). Additionally, both lineages and individuals in those lineages had ownership rights to various food collecting, mineral collecting, hunting, fishing, and sacred area locations. The Cahuilla often lived in canyons or near drainages on alluvial fans and were arranged so that each lineage or community was placed in an area near significant water and food resources. Important sources of food were acorns, pinyon nuts, mesquite, legumes, agave, wild fruits and berries, tubers, cactus bulbs, roots and greens, deer, antelope, big horn sheep, rabbits, and wood rats (Bean 1978).

Typically, Cahuilla women gathered, and men hunted, although work tasks often overlapped in a highly developed, seasonal mobility system. They adapted to the arid conditions of the desert floor, the lacustral cycles of Holocene Lake Cahuilla, and the environments of the nearby mountains. The lake provided an abundance of freshwater resources, particularly during its high stands. However, when it desiccated, the Cahuilla relied upon terrestrial resources and trade for subsistence. The Cahuilla were also part of the Northern Sonoran Desert Amity Enmity System shared with the Serrano to the north and the Gabrielino to the northwest (Bean and Smith 1978). This large-scale alliance helped the tribes in various socioeconomic activities such as trade, marriage, shared rituals, and war (Bean and Vane 1978).

History

In California, the historic era is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present). The first Europeans in California were the Spanish. In 1542 Juan Rodriguez Cabrillo entered what would become known as San Diego Harbor (Rolle 2003) where he met a group of Kumeyaay Indians while on shore. Over the next few hundred years there were several maritime excursions along the California coast, but it would be more than 225 years until the Spanish established a permanent settlement. To protect its interests, Spain sent four excursions into California, two by land and two by sea. The entire expedition was led by Captain Gaspar de Portolá, military commander of California (Rolle 2003). Portolá came through the Los Angeles basin area in 1769 while travelling from San Diego to Monterey. To fulfill some of the religious goals of the expedition Father Junípero Serra was sent to California to establish a system of Catholic Missions. It was not until two years later, on September 8, 1771 that Mission San Gabriel Arcángel was established by Fathers Pedro Cambon and Angel Somera (Hoover et al. 1990). Ten years later, on September 4, 1781, Los Angeles was founded. Early settlers farmed and they built a system of zanjas, or irrigation ditches, to transport water from the Los Angeles River to plots of land. With Mexican Independence in 1821, Los Angeles and California experienced great economic independence and growth (Rolle 2003).

Very little is presently known about the history of the Coachella Valley prior to 1820. However, in 1821, a party of Cocomaricopa Indians arrived at the San Gabriel Mission, announcing they had traveled from the Colorado River in only six days using the Cocomaricopa trail (von Till Warren et al. 1981:85). In 1825, Jose Maria Romero along with Jose Maria Estudillo, and Romualdo Pacheco departed from present day Los Angeles and headed east through the San Gorgonio Pass across the Coachella Valley to Blythe in search of the Cocomaricopa Trail leading to Yuma (Johnston 1987). Shortly after the expedition, another route to the south was discovered going from Yuma to San Diego which became known as the "Southern Route". The "Southern Route" was later used extensively by immigrants and prospectors during the California Gold Rush of the late 1840s and early 1850s. The route became so popular that the Butterfield Overland Mail Company began operating a semi-weekly stage service in 1858. However, by 1862, the discovery of gold near the town of Blythe produced a demand for a direct route eastward from California to Arizona. In that same year, William David Bradshaw met that demand and reached the Colorado river northeast of Blythe with the help of a hand drawn map from Cahuilla Chief, Cabazon (Johnston 1987, Ross 1992). The trail was then called the Bradshaw trail and served as the means of communication and main thoroughfare between southern California and Texas until the completion of the Southern Pacific Railroad in 1883 (Johnston 1987).

The surveying and mapping the Colorado Desert began in 1852, when Henry Washington and a small party of surveyors ascended the San Bernardino Mountains and established the San Bernardino Baseline and Meridian. Between 1854 to 1857, Washington extended this line though uncharted territory to the Colorado River (von Till Warren et al. 1981:94). Also, in the 1850s, the U.S. Government sent Indian Commissioners into southern California deserts. Although not authorized to make any commitments to the Native Americans, the Commissioners illegally set aside large tracts of land for reservations (von Till Warren et al. 1981:94). Most of these areas never fully developed into reservations, although the Torres Martinez and Agua Caliente (Palm Springs) reservations were eventually set aside from the larger reserves delineated by these Indian Commissioners.

By the late nineteenth and early twentieth century, non-Indian settlements began to emerge in many areas of what is now Riverside County, encouraged by two federal acts. The Homestead Act of 1862 established a three-fold homestead acquisition process for U.S. citizens or foreign immigrants intending citizenship: filing an application, improving the land measuring 160 acres, and filing for deed of title. Secondly the Desert Land Act of 1877 encouraged and promoted the economic development of the arid and semiarid public lands of the western United States as married couples could apply for a desert-land entry to reclaim, irrigate, and cultivate 640 acres of land. Within the context of these acts, settlement in present day City of Indian Wells began as a drinking stop by many who made their journey through the Bradshaw trail and those who came later via the Southern Pacific Railroad in the 1880s. By 1890, the U.S. Department of Agriculture imported the first date palms across the Coachella Valley and by 1910, dates became the main agricultural crop and symbol of the desert valleys (Shield Date Gardens 1957).

Early prominent settlers such as Melvin Harmon and William Hayhurst along with others homesteaded in what is today the City of Indian Wells and opened the first market and post office by 1915. Until the passage of the Taylor Grazing Act of 1934, however, no control was exercised over the California desert lands. Because of the extreme aridity of the California deserts and subsequent lack of grazing land, this Act had virtually no practical impact on the region until the Bureau of Land Management (BLM) assumed control of range lands in 1946. Since that time, the BLM also has been engaged in evaluating lands for various "uses," and classifying them for different types of management (von Till Warren et al. 1981:95).

The paucity of water in many areas of the Colorado Desert discouraged farming, and subsequently agricultural development flourished only when water was imported in significant quantities. However, because of the relatively high-water table in the Coachella Valley, the agricultural industry began to develop prior to the importation of water by means of drilling artesian wells. The use of these wells for grape, date and fig cultivation led to dropping groundwater levels despite plans to export Coachella Valley groundwater to Imperial Valley. These factors led local farmers to create the Coachella Valley County Water District in 1918. Following passage of the Boulder Canyon Project Act of 1928, the All-American Canal and Coachella Valley Extension were developed to harness the waters of the Colorado River for the development of agriculture in Imperial and Coachella Valleys. Branching off from the All-American Canal, the Old Coachella Canal extends 199 km (123.5 mi) north to the northern Coachella Valley, bringing the first imported irrigation water to the valley in 1949 (Norland 1978).

Fueled by the abundance of water from the various federal water canal, by the mid twentieth century a considerable growth in recreational development and a boom of country club living and resort hotels began to appear. The City of Indian Wells was incorporated in July of 1967 (City of Indian Wells 2020). The first mayor of the City of Indian Wells, E.M. "Pete" Peterson established the first property owner's association and solidified the City of Indian Wells as a unique desert destination.

METHODS

The focus and purpose of this report are to support the IWGPU and, therefore are broad and programmatic in scope. Baseline paleontological, archaeological, and historical data was compiled from record searches at various research facilities and online. Multiple survey methods, including desktop and reconnaissance, were

employed over the large area of the City. The reconnaissance field survey was limited due to the lack of access to archaeological and historic resources on private property.

Paleontological Resources Records Search

The geology of the area has been mapped by Lancaster et al. (2012) at a scale of 1:100,000. A paleontological records search was requested from the Western Science Center in Hemet. Fossil localities within 3 miles of the Project were investigated by DUKE CRM using the online University of California Museum of Paleontology and San Diego Natural History Museum collections, Paleobiology Database, FAUNMAP, and other published resources (Miller 1971; Jefferson 1991a, b). Additional background research was conducted in the Journal of Vertebrate Paleontology.

Cultural Resources Records Search

On June 29, 2020, Edgar Alvarez of DUKE C R M requested a records search at the Eastern Information (EIC). The EIC provided the records search results on November 16, 2020. The EIC was only able to respond with partial information as not all records are digital and therefore accessible during the ongoing campus closure due to the novel coronavirus. The EIC is part of the California Historical Resources Information System and included a records search of all recorded historic and prehistoric archaeological sites within the City including the California OHP's Historic Resources Inventory directory, as well as a review of known cultural resource survey and excavation reports. The California State Historic Property Data File was examined, which includes the NRHP, CRHR, CHL, and California Points of Historical Interest. The Built Environment Resource Directory was also consulted.

Research

Throughout the course of the Project, research was conducted in an effort to assess cultural sensitivity and focus field efforts. This included both published and unpublished materials. The following online resources were reviewed:

- Historic aerial photos and maps
    - http://mil.library.ucsb.edu/ap_indexes/FrameFinder/,
    - http://www.davidrumsey.com/rumsey_collection.kmz,
    - www.historicaerials.com,
    - https://oac.cdlib.org/
    - https://www.loc.gov/collections/sanborn-maps
    - and https://livingatlas.arcgis.com/topoexplorer/index.html
- National Register of Historic Places (http://www.gelib.com/historic-places-inventory.htm)
- Soil mapping data (https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/)

Field Surveys

On December 22, 2020, a reconnaissance-level archaeological, historic, and paleontological resource field survey was performed within the City. Survey efforts attempted to relocate previously recorded resources that were easily accessed and within the City. Access to these potential resources was through public roads. The resources' status was determined by the presence/absence of appearance of a potential historic built environment resource, and/or basic level of development.

Personnel

DUKE CRM Archaeologist Nicholas F. Hearth., M.A. RPA, is the senior author of this report (Appendix B. Resumes). Mr. Edgar Alvarez, B.A. conducted the reconnaissance survey of archaeological and paleontological resources and is the co-author of this report. Paleontologist Benjamin Scherzer, M.S. conducted all paleontological research and prepared the geology, natural setting, and all paleontology sections of this report. Brian Glenn, M.A. RPA, provide review and quality control of the report. Curt Duke, M.A., President and Principal Archaeologist for DUKE CRM oversaw all efforts and contributed to this report.

Mr. Duke meets the professional qualifications of the Secretary of the Interior for prehistoric and historical archaeology; he is also a Registered Professional Archaeologist (RPA) who has worked in all phases of archaeology (archival research, field survey, testing and data recovery excavation, laboratory analysis, construction monitoring) since 1994. Mr. Duke holds a Master of Arts degree in Anthropology with an emphasis in archaeology from California State University, Fullerton and a Bachelor of Arts degree in Anthropology from the University of California, Santa Cruz. Mr. Duke has worked throughout southern and Northern California and parts of Arizona and Nevada.

Mr. Hearth has worked as an archaeologist in cultural resource management since 2002. He meets the Secretary of Interior's Professional Qualifications Standards for Prehistoric Archaeology. He received his B.A. in Anthropology in 2003 from the University of Massachusetts, Amherst, and his M.A. in Anthropology in 2006 from the University of California, Riverside. Mr. Hearth has worked in California, New Mexico, and multiple states both in the Midwest and New England. Mr. Hearth is well-versed applying Section 106 of the NHPA, NEPA, and CEQA on a variety of projects across many market sectors. His project responsibilities primarily include overseeing archaeological, historical, and paleontological studies, directing all phases of archaeological and historical field and laboratory work, conducting ensuring that the quality of analysis and reporting meets or exceeds appropriate local, state, and federal standards.

Mr. Glenn is the Principal Investigator/Archaeologist assigned to the Project for DUKE CRM. Mr. Glenn meets the professional qualifications of the Secretary of the Interior for prehistoric and historical archaeology; he is also a RPA who has worked in all phases of archaeology (archival research, field survey, testing and data recovery excavation, laboratory analysis, construction monitoring)

Mr. Scherzer holds a Master of Science in Earth Sciences from Montana State University, Bozeman. He has more than 10 years of experience in paleontological research, field surveys, fossil salvage, laboratory identification, report preparation, and curatorial experience. Mr. Scherzer is a member of the Society for Vertebrate Paleontology, Geological Society of America, Society for Sedimentary Geology, and the Paleontological Society.

Edgar Alvarez holds a B.A. with a minor in Geographic Information Systems from California State University, Northridge. He was Lead Archaeological Surveyor for DUKE CRM on the Project. Mr. Alvarez has five years of experience in California archaeology.

RESULTS

Paleontological Resources Records Search

The City of Indian Wells is underlain by ten geologic units (Appendix C). Individual units, and their paleontological sensitivity, are described below (Appendix A, Map 4).

Old alluvial valley deposits (Qoa) (middle to late Pleistocene)

Old alluvial valley deposits are composed of slightly to moderately consolidated silt to boulder deposits issued from confined valleys or canyons in the southeastern corner of the Project (Lancaster, et al., 2012).

Old alluvial fan deposits (Qof) (middle to late Pleistocene)

Old alluvial fan deposits are composed of slightly to moderately consolidated clay to gravel deposited along stream valleys and floodplains of large rivers associated with the Chino Canyon Fan. These deposits are found in the foothills of the highlands in the southwestern portion of the Project (Lancaster et al. 2012).

The climate of Southern California during the Pleistocene was cooler and moister than the modern Mediterranean climate (Lamb 1989). In contrast to the harsh, cold conditions in high latitudes near the ice sheets, Southern California experienced a relatively milder climate during this time (Calder 1983). During this time, the area was inhabited by the familiar Pleistocene or "Ice Age" fauna, such as mammoth, mastodons, horses, camelids, and ground sloths (Stock 2001). Towards the end of the Pleistocene, the Colorado River delta would have started to form a "dam" between the Salton Trough and the Gulf of California, initiating the

first iterations of the Lake Cahuilla when the river meandered west and infilled the trough (Waters 1980, 1983).

Young eolian and dune deposits (Qye) (late Pleistocene to Holocene)
Young eolian and dune deposits are composed of unconsolidated to slightly consolidated wind-blown sands and are found in the northeastern portion of the Project (Lancaster et al. 2012).

Young alluvial valley deposits (Qya) (late Pleistocene to Holocene)
Young alluvial valley deposits are composed of unconsolidated to slightly consolidated, clay to gravel along stream valleys and alluvial flats of larger rivers. These deposits are found in the northwest corner of the Project, and in an isolated location within the San Jacinto Mountains to the south (Lancaster et al. 2012).

Young alluvial fan deposits (Qyf) (late Pleistocene to Holocene)
Young alluvial fan deposits are composed of unconsolidated to slightly consolidated, silt to boulders issued from confined valleys or canyons (Lancaster et al. 2012). In the Project area, these are commonly isolated deposits within the Chino Canyon Fan.

Eolian and dune deposits (Qe) (late Holocene)
Eolian and dune deposits are composed of unconsolidated, well-sorted wind-blown sand, occasional forming dunes or sheet sands. These deposits are found in one location in the northeast portion of the Project (Lancaster et al. 2012).

Alluvial wash deposits (Qw) (late Holocene)
Alluvial wash deposits are composed of unconsolidated silt, sand, and gravel deposited in recent active streams and rivers, and cover a significant portion of the western and northern areas of the Project (Lancaster et al. 2012).

Alluvial fan deposits (Qf) (late Holocene)
Alluvial fan deposits are composed of unconsolidated silt to boulders deposited as a fan-shaped cone at the end of a canyon or valley. These deposits are found in the southwestern corner of the Project (Lancaster et al. 2012).

Undifferentiated surficial deposits (Qsu) (late Holocene)
These deposits include various lithologies (colluvium, slope wash, talus deposits, etc.) resulting from recent sedimentary processes. These deposits are found in isolated locations in the San Jacinto Mountains in the southern portion of the Project (Lancaster et al. 2012).

Continued uplift and slip continued along the SJFZ in the Holocene Epoch has resulted in erosion and sedimentation in the valley floor of the Salton Trough, combined with contributions from the southeast-flowing Whitewater River. As a result, the sediment underlying the lower-lying areas of the Project are dominated by the various late Pleistocene to Holocene units described above. Units from the late Holocene (*Qe*, *Qw*, *Qf*) are too young to have accumulated or preserved significant amounts of biologic material and are assigned a low sensitivity at the surface. The upper deposits of units from the late Pleistocene to Holocene (*Qye*, *Qya*, *Qyf*) are similarly too young to contain fossils, but transition with depth to older, higher-sensitivity deposits. As a result, these units are assigned a high sensitivity at depth. The depth of this transition varies across the Project area. The high sensitivity of the older, deeper deposits is particularly important due to the proximity to prehistoric Lake Cahuilla (Waters 1980, 1983), whose lacustrine deposits have produced the nearest fossil locality (Appendix C).

The San Jacinto Mountains in the southeastern portion of the City are predominantly composed of granitic and other intrusive rocks of all ages (*gr*). Due to the igneous nature of these rocks, they have no potential to contain paleontological resources, and are assigned no paleontological sensitivity (Appendix A, Map 5).

No fossil localities are documented within the Project, but the Imagine Coachella Project, approximately three miles to the east, produced remains of multiple snails, clams, algae, and ostracods associated with prehistoric Lake Cahuilla (Appendix A, Map 5)

Due fossil material being previously discovered in deposits from the Pleistocene Epoch in vicinity of the Project, old alluvial valley deposits (*Qoa*) and old alluvial fan deposits (*Qof*) are assigned a high paleontological sensitivity at the surface, and young eolian and dune deposits (*Qye*), young alluvial valley deposits (*Qya*), young alluvial fan deposits (*Qyf*) are assigned a high paleontological sensitivity at depth (Table 1. Paleontological Potential; Appendix A, Map 5; Appendix C. Paleontological Records Search).

Table 1. Geologic Units and their Paleontological Potential

Age	Geologic Unit	Fossils Present[1]	Paleontological Sensitivity
Holocene	Eolian and dune deposits (*Qe*), Alluvial wash deposits (*Qw*), Alluvial fan deposits (*Qf*), Undifferentiated surficial deposits (*Qsu*)	Snails, clams, algae, and ostracods	Low sensitivity
Holocene, Pleistocene	Young eolian and dune deposits (*Qye*), Young alluvial valley deposits (*Qya*), Young alluvial fan deposits (*Qyf*)		High sensitivity at depth
Pleistocene	Old alluvial valley deposits (*Qoa*), Old alluvial fan deposits (*Qof*)	None	High sensitivity at the surface
Mesozoic and older	Granitic and other intrusive rocks of all ages (*gr*)	None	No sensitivity

[1] Appendix C

Cultural Resources Records Search

Cultural Resources

Results of the records search from the EIC indicate that 72 cultural resources are recorded within the City. The resources include 38 prehistoric archaeological sites, 18 prehistoric isolates, three (3) multicomponent sites, seven (7) historic archaeological sites, one (1) historic isolate, and five (5) historic built environment resources. Of the five (5) historic built environment resources listed within the Built Environment Resource Directory, three (3) were potentially eligible for inclusion on the NHRP but are no longer extant. No resources are listed on the NHRP within the City (Table 2).

Most prehistoric archaeological sites and isolates are located along the foothills and toes of the slopes of the Eisenhower Mountains and along the Whitewater River Channel. Of these, most sites and isolates (65.0%, n=47) are or include ceramic artifacts (OHP 1995: AP03 and AP16 Ceramic Isolate). Additionally, flaked-stone artifacts and bedrock milling features (OHP 1995: AP02, AP04) are the next most frequent type of prehistoric resource or component of resources with 25.0% (n=18) and 22.0% (n=16), respectively, in the City. The next most frequent type of prehistoric resource or component of resources is habitation debris and trails/linear earthworks (OHP 1995: AP15 and AP14) at 14.0% (n=10) and 11% (n=8), respectively. The various other types of resources are all approximately 10% or less.

A total of seven (7) historic archaeological sites, one (1) historic isolate, and five (5) historic built environment resources are within the City. The two (2) most abundant types of historic site or site component are refuse deposits (n=2, 15.4%) and standing structures (n=2, 15.4%). The two (2) most abundant historic built environment resources are single-family properties (n=3, 23.1%) and farms or ranches (n=2, 15.4%). According to EIC records, three (3) of the five (5) historic built environment resources within the Project, P33-007517, P33-007522 and P33-007523 are listed as potentially eligible for inclusion on the NRHP. These resources are discussed below.

P33-007517 is the Cavanagh adobe, a single-family farm recorded by Carpenter (1982a). It is described as a two-story adobe situated in a date garden. This house is rectangular in plan with the massive fireplace a prominent feature of the exterior design. The entrance porch and a portion of the first-floor roof (once used for & sleeping deck in summer) were later enclosed to make additional rooms. The shed roof of hand-made tile distinguishes this Mediterranean/Spanish Revival structure of adobe brick made on the premises. Sturdy lintels of 8" timbers support the small, well-proportioned windows in 18" thick walls. The Cavanagh adobe is significant because it is one of the oldest buildings in the Coachella Valley's Cove area built between 1922 to 1928. The 20 acre-land on which the Cavanagh adobe sits was purchased from Caleb Cook, Coachella Valley's date industry pioneer, who encouraged the Cavanagh brothers to become successful date ranchers themselves. The building is extant, in excellent condition and is eligible under NRHP criteria A and C.

P33-007522 is assigned to the Ripple's Date Garden recorded by Carpenter (1982b). It is described as a one-story commercial building is of Spanish Revival design. A long porch supported by huge posts with a tiled canopy is the outstanding feature of this roadside shop on State Route 111. A portion of the main building, once used as a residence, has a gable roof. The Ripple's Date Garden was built in 1933 and significant because it represented the importance of the date industry to Coachella Valley's growth. The building is no longer extant as it was destroyed with the development of luxury residential properties.

P33-007523 records a mansion historically known as Billikie Ranch as recorded by Bowie & Carpenter (1982). The resource is an imposing two-story structure in Mediterranean/Spanish Revival style, this stucco mansion has a gabled entrance with massive wrought iron gates with intricate leaf design. The roof, a combination of hip and shed, is of tile made in the La Quinta area. A separate garage is connected with the main house by an 8-foot wall which extends around the building and unifies the compound. Billikie Ranch was a significant cultural resource because it was owned by J.E. "Doc" and Ruth A. Gurley, a prominent pioneering family in the Coachella Valley. It was also the most admired home in the area because of the complete unity of the site with the buildings. The prominent hill is simply landscaped with an expansive grass lawn, shrubs, and a few trees. Additionally, Billikie, a prominent builder in the region, constructed the Gurley's mansion in 1931. The building is no longer extant as it was destroyed with the development of luxury residential properties.

Cultural Resource Studies

Based on the research from the EIC, 97 cultural resources studies have been completed in the Project area. Cultural resource studies date from 1970 to the present. Most of these projects relate to upgrading development of existing utilities and surveys for new housing and resort developments. Of the 97 cultural resources studies in the Project, 24 were large Phase I surveys (100+ acres), 23 medium Phase I surveys (10 – 100 acres), 18 small Phase I surveys (0 – 10 acres), 16 literature searches, seven (7) Phase II excavations, four (4) monitoring reports, four (4) linear studies, and one (1) Phase III data recovery program. Important areas of research within the Project area are within reports from the Deep Canyon and Hidden Valley locations and along the Whitewater River Channel within the City (e.g., Jertberg 1992, Brown 2000, Hogan et al. 2004). Most projects were a mix of small to large survey projects for housing and resort developments. Below is a summary of the larger, more important reports within the City. Additionally, the bibliography from the EIC for cultural resource studies within the City is in Appendix D.

Table 2. Cultural Resources within the City of Indian Wells

Site Number (Primary/Trinomial)	Site Type	Description	NRHP Eligible	Date Recorded	Recorded By
P33-000064/CA-RIV-64	Multicomponent	Village, campsite, habitation	Yes	1954	C.E. Smith
P33-000167/CA-RIV-167	Prehistoric	Village, campsite, habitation	Unknown	1954	C.E. Smith
P33-000168/ CA-RIV-168	Prehistoric	Rock walls	Unknown	1954	C.E. Smith
P33-000437/CA-RIV-437	Prehistoric	Bedrock milling feature, ceramics, lithics	Yes	1968	Janice Galt
P33-000438/CA-RIV-438	Prehistoric	Lithics, ceramics, rock shelter	Yes	1968	Janice and Tony Galt
P33-000565/CA-RIV-565	Prehistoric	Ceramic scatter	No	1972	T.F. King
P33-000566/CA-RIV-566	Prehistoric	Bedrock milling feature, lithics, ceramics	Yes	1972	George T. Jefferson
P33-000567/CA-RIV-567	Prehistoric	Ceramic scatter	Unknown	1972	George Jefferson
P33-000568/CA-RIV-568	Prehistoric	Ceramic scatter, rock shelter	Unknown	1972	M. Graffam, R. Dean, T. King
P33-001315/CA-RIV-1315	Prehistoric	Bedrock milling feature, ceramics, lithics	Unknown	1978	J. Swenson
P33-001327/CA-RIV-1327	Multicomponent	Bedrock milling feature, foundation	No	1978	D. McCarthy
P33-001455/CA-RIV-1455	Prehistoric	Habitation, ceramic scatter	Unknown	1978	J. Swenson
P33-001530/CA-RIV-1530	Prehistoric	Habitation, hearths, lithics, ceramics	Yes	1978	J. Baldwin
P33-001754/CA-RIV-1754	Prehistoric	Ceramic scatter	Unknown	1979	W.H. Breece
P33-002059/CA-RIV-2059	Prehistoric	Cairns, trails/ linear earthworks	Unknown	1978	De Munk
P33-002246/CA-RIV-2246	Historic	Foundation, privies, roads, structures	Unknown	1978	D. McCarthy
P33-002934/CA-RIV-2934	Prehistoric	Bedrock milling feature, lithic scatter	Unknown	1984	D.F. McCarthy
P33-002935/CA-RIV-2935	Prehistoric	Habitation, Bedrock milling feature	Unknown	1984	Toenjes
P33-003005/CA-RIV-3005	Prehistoric	Habitation, lithics, ceramics	Yes*	1985	M.Q. Sutton
P33-003007/CA-RIV-3007	Prehistoric	Burials, habitation, ceramic scatter	Unknown	1985	M.Q. Sutton
P33-003008/CA-RIV-3008	Prehistoric	Ceramic scatter	No	1985	M.Q. Sutton
P33-003886/CA-RIV-3886	Historic	Standing structures	Unknown	1986	D. Van Horn
P33-004039/CA-RIV-4039	Historic	Wells/cisterns	No	1990	Broeker & Duffield
P33-004107/CA-RIV-4107	Prehistoric	Burials	Unknown	1991	Archaeological Associates
P33-004108/CA-RIV-4108	Prehistoric	Ceramic scatter	Unknown	1991	Archaeological Associates

Site Number (Primary/Trinomial)	Site Type	Description	NRHP Eligible	Date Recorded	Recorded By
P33-004361/CA-RIV-4361	Prehistoric	Lithic scatter, trails/ linear earthworks	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, K. Slater
P33-004491/CA-RIV-4491	Prehistoric	Ceramic scatter	Unknown	1955	Archaeological Survey Association
P33-004967/CA-RIV-4967	Prehistoric	Trails/linear earthworks	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, K. Slater
P33-004968/CA-RIV-4968	Prehistoric	Trails/linear earthworks	No	1991	P. Jerberg, J. Rosenthal, R. Cecil, K. Slater
P33-004969/CA-RIV-4969	Prehistoric	Trails/linear earthworks	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, K. Slater
P33-005547/CA-RIV-5495	Prehistoric	Habitation, rock shelter, hearths, bedrock milling features, lithics, ceramics	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, and K. Slater
P33-005568/CA-RIV-5500	Prehistoric	Cairns, trails/ linear earthworks	No	1991	P. Jertberg, J. Rosenthal, K. Slater, R. Cecil
P33-005569/CA-RIV-5501	Prehistoric	Ceramic scatter	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, and K. Slater
P33-007516	Historic	1-3 story commercial building, farm	No	1982	Bowie and Carpenter
P33-007517	Historic Built Environment	Single family property, farm	Yes	1982	Anne Carpenter
P33-007522	Historic Built Environment	Single family property, 1-3 story commercial building	Yes*	1982	Anne Carpenter
P33-007523	Historic Built Environment	Multiple family property	Yes*	1982	Fay Bowie and Anne Carpenter
P33-007528	Historic Built Environment	Farm/ranch	No	1982	Rheo Lanman
P33-007529	Historic Built Environment	Single family property	No	1982	Bowie & Carpenter
P33-007924/CA-RIV-5876	Prehistoric	Lithic scatter, ceramic scatter	Yes*	1997	J. Brock
P33-008162/CA-RIV-6062	Prehistoric	Bedrock milling feature, hearths	Unknown	1998	Bruce Love
P33-009015	Prehistoric Isolate	Ceramic	No	1998	Joan C. Brown
P33-009016	Prehistoric Isolate	Ceramic	No	1998	Joan C. Brown
P33-009017	Prehistoric Isolate	Lithic, ceramic	No	1998	Joan C. Brown
P33-009018	Prehistoric Isolate	Ceramic	No	1998	Joan C. Brown
P33-009019	Prehistoric Isolate	Ceramic	No	1998	Joan C. Brown
P33-009022	Prehistoric Isolate	Mano fragment	No	1998	Joan C. Brown
P33-009023	Prehistoric Isolate	Ceramic	No	1998	Joan C. Brown
P33-009556	Multicomponent	Ceramic, trash scatter	Unknown	1999	Natasha Johnson

Site Number (Primary/Trinomial)	Site Type	Description	NRHP Eligible	Date Recorded	Recorded By
P33-009557	Historic	Trash scatter	Unknown	1999	Natasha Johnson
P33-009558	Prehistoric Isolate	Ceramic	No	1999	Natasha Johnson
P33-011814	Prehistoric Isolate	Ceramic	No	1991	P. Jertberg, J. Rosenthal, K. Slater, R. Cecil
P33-011815	Prehistoric Isolate	Ceramic	No	1991	P. Jertberg, K. Slater, J. Rosenthal, R. Cecil
P33-011816	Prehistoric Isolate	Ceramic	No	1991	P. Jertberg, J. Rosenthal, K. Slater, R. Cecil
P33-011817	Prehistoric Isolate	Ceramic	No	1991	P. Jerberg, J. Rosenthal, R. Cecil, K. Slater
P33-011818	Prehistoric Isolate	Ceramic	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, K. Slater
P33-011819	Prehistoric Isolate	Ceramic	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, K. Slater
P33-011820	Prehistoric Isolate	Ceramic	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, K. Slater
P33-011821	Prehistoric Isolate	Ceramic scatter	No	1991	P. Jertberg, J. Rosenthal, R. Cecil, K. Slater
P33-012674	Prehistoric Isolate	Ceramic scatter	No	1986	Paul G. Chace & Donna Collins
P33-012946/CA-RIV-7195	Prehistoric	Habitation, Bedrock milling feature, cairns	Yes	2003	Daniel Ballester & Robert Porter
P33-012947/CA-RIV-7196	Prehistoric	Bedrock milling feature, ceramic scatter	No	2003	Daniel Ballester & Robert Porter
P33-012948/CA-RIV-7197	Prehistoric	Bedrock milling feature	No	2003	Daniel Ballester & Robert Porter
P33-012949/CA-RIV-7198	Prehistoric	Bedrock milling feature	No	2003	Daniel Ballester & Robert Porter
P33-013205/CA-RIV-7364	Prehistoric	Habitation, hearths, ceramics, lithics	No	2003	Daniel Ballester & Robert Porter
P33-013300/CA-RIV-7402	Prehistoric	Lithic scatter, ceramic scatter	Unknown	2003	N. Harris and D. Bircheff
P33-013501	Prehistoric	Bedrock milling feature	No	1978	D. McCarthy
P33-017518	Historic	Single family property	No	2004	Josh Smallwood
P33-017574	Historic	Single family property, ancillary building, folk art	Yes*	2009	Gale Carpenter, Adele Ruxtoy & Ann Japenga
P33-020416	Prehistoric	Bedrock milling feature	Unknown	2012	Britt W. Wilson
P33-023818	Prehistoric Isolate	Ceramic	No	2013	Cheryle Hunt
P33-024880	Historic Isolate	Glass bottle	No	2016	Daniel Ballester & Ben Kerridge

*** Determined eligible, but no longer extant**

The Jertberg Study (RI-3575)
The Jertberg (1992) survey was conducted in advance of the construction of a residential and golf course resort development south of Highway 111 and east of Portola Avenue within Deep Canyon, including Hidden Valley and part of the ridgelines to the east. The total area surveyed according to the report was 600 acres. However, the retention basin, the southern-one-fourth of the southwest portion between the golf course greens, and the southeastern ridgeline above 800 feet were not surveyed because previous development excavations removed several meters of soil (Jertberg 1992:9) Jertberg' s study found a total of 15 prehistoric resources consisting of a temporary campsite (CA-RIV-5495), a small hearth feature, four (4) trail segments, and nine (9) isolated ceramic artifacts of Tizon Brown Ware and Colorado Buff Ware. Jertberg noted that "the sites and isolates were all located either on the east side of Deep Canyon Wash or within Hidden Valley" (Jertberg 1992:11).

Previous surveys conducted by King and Jefferson (1972) and Drover and Leonard (1978) in parts of the Project area also found archaeological resources that were reidentified by Jertberg. The 1992 survey found two trail segments and one archaeological site, CA-RIV-568. The first trail segment and CA-RIV-568 were both relocated but the second trail segment was destroyed due to construction of the retention basin spillway (Jertberg 1992: 11). The 1978 survey found a single Tizon Brown Ware potsherd which was not relocated and two trail segments that were both relocated. Additionally, two previously recorded archaeological sites, CA-RIV-438 and CA-RIV-566 were not relocated. Aside from the prehistoric resources, no historical remains were found throughout the survey.

The study concluded that a test level investigation should be conducted at CA-RIV-5495 to determine its significance according to CEQA Appendix K Guidelines (Jertberg 1992: 16). It also concluded that a preservation plan or mitigation program be established for CA-RIV-438, -566- and -568 to protect them from any indirect impacts the project development may cause. Lastly, Jertberg concluded that monitoring of any grading activities by a qualified archaeologist be required due to the alluvial conditions within the Hidden Valley area and the potential for buried resources (Jertberg 1992: 17).

The Brown Study (RI-1934)
In 2000, RMW Paleo Associates, Inc. performed a Phase II evaluative study of prehistoric sites CA-RIV-3005 and CA-RIV-5876 to determine their significance according to CEQA. This was after a previous exploratory study conducted by them in 1998 which involved a collection of surface artifacts, hand excavation of units, and mechanical excavation trenches. This 2000 study was conducted in advance of a tennis facilities parking lot development within a 50-acre project area (Garden of Champions) located north of the Whitewater River Channel, south of Miles Avenue, and west of Washington Street (Brown 2000:1). The study consisted of hand excavations of two-meter square by 15 cm deep surface scrapes at CA-RIV-3005 and CA-RIV-5876 as well as monitoring the entire Garden of Champions Project.

Testing at CA-RIV-3005 produced 24 flakes, four (4) pieces of shatter, two (2) utilized flakes, one (1) chert drill/perforator, 25 ground stone artifacts, 195 manuports, 39 bone fragments, 20 shell fragments (three [3] *Anadonta dejecta)*, 150 ceramic fragments, and 118 pieces of daub. A shell pendant recovered from the site was radiocarbon dated indicating site occupation between A.D. 980 and A.D. 1150. Testing at CA-RIV-5876 produced 11 lithic artifacts, 10 chipped stone artifacts, one (1) unidentifiable ground stone fragment, 11 manuports, six (6) bone fragments, one (1) fire affected), two (2) shell fragments (*Anadonta dejecta)*, 277 ceramic fragments, and 26 pieces of daub. An earlier excavation by Alexandrowicz et al. (1998) in the western portion of the site placed occupation in the Late Prehistoric and/or Ethnographic periods (Brown 2000:23). During monitoring, four ceramic sherds were recovered from CA-RIV-3005 as well as a mano fragment and two ceramic sherds north of Miles avenue.

Brown concluded that CA-RIV-3005 and CA-RIV-5876 were deemed significant according to CEQA and eligible for the CRHR because they provided information not previously known. For example, Site CA-RIV-3005 contained a diverse artifact assemblage illustrating that there was variety in the activities represented and that the site most likely represented a habitation area, perhaps the home of a single family. Similar to other

prehistoric sites in southern California, the correlation between site activity and the proportion of burned sherds found indicate that CA-RIV-3005 was indeed a habitation site. Whereas Site CA-RIV-5876 represents a special use site or campsite from the lack of burned sherds and daub compared to CA-RIV-3005. She recommended that no further cultural resources studies within the project area be required as most of the cultural remains and the site areas were subsequently graded (Brown 2000:23). They were destroyed subsequent to study.

The Love Study (RI-5793)
From 2000 to 2002, CRM TECH conducted a Phase III archaeological data recovery program for a portion of site CA-RIV-64/H that was within the project area of the Indian Wells Country Club East Course. A total of 118 surface scrapes were conducted from 0 to 20 centimeters below surface to establish and record the Late Prehistoric component of the site. Artifacts recovered from the surface scrapes included two (2) lithic cores, 45 projectile points, three (3) uniface tools, nine (9) unknown tool types, 199 human bone fragments, 5,568 vertebrate bone fragments, over 1,900 ceramic potsherds, 146 shell beads and ornaments, 498 shell fragments, over 70 ground stone fragments, 12 fire affected rocks, one (1) glass flake, one (1) cordage fragment, fire affected clay, over 28 grams of charcoal, and 171 historic-era artifacts (Love 2002:27). Love found that the immense number of flakes, pieces of shatter, ground stone fragments, and lack of obsidian flakes recovered from the surface scrapes are consistent with Late Period Coachella Valley sites (Love 2002:42). Additionally, a near absence of fish bone indicates that either Ancient Lake Cahuilla did not exist, or if it did, was not utilized during this occupation period (Love 2002).

Twenty (20) excavation units were then conducted below the 20-centimeter surface scrapes to focus on the Archaic period component of the site. Specifically, if these units did not contain ceramics then it most likely represented assemblages from the Archaic Period (Love 2002:43). A total of 364 faunal remains were recovered along with 216 debitage, eight (8) biface tools, seven (7) ground stone fragments, fire affected clay, obsidian, and charcoal. Charcoal samples from Unit 8 (70 – 80cm) produced a date of A.D. 790 to 1030 and the charcoal samples from Unit 11 (70 – 80cm) returned a date of A.D. 400 to 650. Love suggests that "there is little to distinguish the artifact collection from Late Period finds other than the absence of pottery and of course the C14 dates" (Love 2002:48). Love concludes that data recovery mitigated impacts to the site and no further archaeological investigations were necessary at the project site. Additional portions of the site likely exist outside the Indian Wells Country Club East Course project area within the floodplain of Whitewater River.

The Chamber Group, Inc. Study (RI-6071)
In 2003, The Chamber Group conducted a 4,350-acre survey encompassing three discontiguous, irregularly shaped areas that covered one-third of the Coachella Valley from Whitewater and Desert Hot Springs to Desert Beach and Durmid on the northeastern shore of the Salton Sea (Chandler et al. 2003:4). The survey was conducted for the BLM to ascertain, for future land use decisions, if any cultural resources could be affected by routes of travel designations, trail construction, and development of off-highway vehicle open areas. A total of 35 newly identified archaeological sites were recorded, 27 isolated finds were recorded, and nine (9) previously recorded sites were updated during the survey. The nine (9) previously recorded sites consisted of seven (7) prehistoric sites and two (2) multicomponent sites that included prehistoric foot trails, campsite/habitations, and bedrock milling stations. Of the 35 newly identified archaeological sites, 30 are prehistoric and five (5) are historic.

The prehistoric sites consisted of ceramic scatters, artifact scatters, campsites, trails, and bedrock milling stations. The historic sites consisted of trash scatters and a foundation (Chandler et al. 2003: 57). In addition, the 27 isolated finds consisted mainly of ceramics, and one (1) biface, one (1) hammerstone, and one (1) historic can and bottle (Chandler et al. 2003:87). Chambers group concluded that based on preliminary evaluations, 25 of the 44 recorded sites are not eligible while the other 19 archaeological sites may qualify for inclusion in the NRHP. It was recommended that further field studies be undertaken to determine whether these 19 sites are eligible for the inclusion in the NRHP (Chandler et al. 2003:90). These sites are outside the City limits.

The Santa Rosa and San Jacinto Mountains Study (RI-6502)
The study produced by CRM TECH in 2004 was to provide the Coachella Valley Mountains Conservancy and the BLM an analysis on the effect of any historic properties/historical resources from their proposed Santa Rosa and San Jacinto Mountains trail project. An intensive level survey was conducted for 11 trail segments within the Coachella Valley with three (3) of those segments in the City of Indian Wells. Additionally, a 45-acre area in Deep Canyon and Hidden Valley within the City of Indian Wells was also surveyed during this study (Hogan et al. 2004:9).

One of the proposed trails within the City of Indian Wells was designated as the "Visitor Center to Deep Canyon (Preferred Alternative) and Deep Canyon to La Quinta (Alternative B-3)". Four previously recorded sites were within the proposed trail; CA-RIV-1435H, -563T, -4039H, and -205, however only CA-RIV-1435H and -4039H were found during the survey. Site CA-RIV-1435H is a historic period water transport system known as Divver's Ditch and is made up of a mortar floor and a single course of cobbles held together with mortar (Hogan et al. 2004: 31). Site CA-RIV-4039H is a historic period well, constructed of rocks and concrete measuring approximately four feet in diameter and approximately 10 feet in depth (ibid.). Site CA-RIV-563T, recorded as a Native American trail was most likely destroyed from a recent development, and site CA-RIV-205, recorded as a large milling stone, was most likely destroyed or mis-plotted on the USGS quadrangle map (ibid). In addition, one (1) previously unknown archaeological resource, Site 33-13086, a Native American trail that begins near the intersection of Avenida Montezuma and Calle Tecate and heads northwest for 1.6 miles. Hogan notes that the path is clearly demarcated in the landscape and two previously recorded trails less than two (2) miles away, CA-RIV-891T and -147T, may be all interconnected (Hogan et al. 2004:32).

The other proposed trail within the City of Indian Wells known as the "Deep Canyon to La Quinta Cove (Preferred Alternative) and Deep Canyon to La Quinta Cove Alternative B-2" has five (5) previously recorded archaeological sites and four (4) previously unknown archaeological sites that were found during the survey. The five (5) previously recorded sites, CA-RIV-437, -438, -565, -566 and -567, were all found except for CA-RIV-567, originally recorded as a ceramic scatter (Hogan et al. 2004:33). Hogan concluded that sites CA-RIV-438 and -566 were "one in the same" as the rock shelter described in both site records were situated in the same location as well as the milling station with associated manos, and the Native American trail (ibid.). Furthermore, due to the proximity of site CA-RIV-437 to site CA-RIV-438 and -566, Hogan combined all three (3) into a single, larger site designated as CA-RIV-7195. CA-RIV-437, now part of CA-RIV-7195, consists of a bedrock milling station, ceramic sherds and three rows of rocks (ibid). The last previously recorded site, CA-RIV-565, consists of 14 ceramic sherds, two of which are rim sherds (ibid.).

The four (4) previously unknown sites, CA-RIV-7196, -7197, -7198, and -7364 were also found within the Deep Canyon to the La Quinta Cove (Preferred Alternative) and Deep Canyon to La Quinta Cove Alternative B-2 trail corridor (Hogan et al. 2004:34). Site CA-RIV-7196 consists of a bedrock milling feature and Site -7197 consists of three bedrock milling features. Site CA-RIV-7198 consists of four (4) bedrock milling boulders and Site-7364 consists of 12 ceramic sherds, five (5) chipped stone pieces, two (2) animal bone fragments, two (2) groundstone implements, and seven (7) pieces of scattered fire-affected rocks (Hogan et al. 2004:40). Out of the 10 archaeological sites recorded during the study, only two (2), Sites CA-RIV-7195 and P33-13086 are recommended to be found eligible for listing in the National Register of Historic Places and the California Register of Historical Resources (Hogan et al. 2004:46).

Applied EarthWorks, Inc. Study (RI-10374)
In 2013, Applied EarthWorks conducted a 3,084-acre Phase I survey in advance of the maintenance and upkeep of the 50 mile long Whitewater River Stormwater Channel and Coachella Valley Stormwater Channel that extended through the cities of Palm Springs, Cathedral City, Rancho Mirage, Palm Desert, Indian Wells, La Quinta, Indio, Coachella, and the unincorporated community of Thermal (George and Mirro 2013:2). Specifically, Reach II involved the City of Indian Wells, extending 16 miles from Vista Chino Road in Palm Springs to Washington Street on the border of the cities of Indian Wells and La Quinta (George and Mirro 2013:6). The Applied Earthworks survey "failed to identify any potentially significant prehistoric or historical resources" noting that most of the sites have been destroyed or displaced (George and Mirro 2013:28). Sites

CA-RIV-1530 and -3005 are within the City of Indian Wells and were originally thought to be inside the Project APE, however, during the survey it was found that the plotted location from the EIC was incorrect and outside the Project APE. Site CA-RIV-64 and the three (3) prehistoric isolated artifacts (P33-009018, -9019, -9022) within the City of Indian Wells were not relocated during the survey. George and Mirro conclude that because no significant prehistoric or historic resources were found in the study and sediments within the Project APE were highly disturbed, no resources are likely to be encountered.

Additional Research

Supplemental additional research was conducted referencing online resources of maps, land grants, and aerial photographs. The earliest map of the Indian Wells area found during research with detailed resolution detailed enough for meaningful analysis were the General Land Office (GLO) plat maps of the area from original and supplemental surveys dating from 1856. GLO survey maps up to 1968 were reviewed for historic land ownership information and other pertinent historical locations within the Project, see Table 3 below.

Table 3: Historic information on GLO Plat Maps

Township 5 south, Range 6 east			
Reference	**Section**	**Landowners**	**Historic Features and notes**
GLO (1856a)	14	Chaplin, Almy (1915 deeded)	Unnamed road, probably stage line
	15	Dolan, Thomas C (1935 deeded)	Unnamed road, probably stage line
	21-22		Nothing indicated
	23		Unnamed road, probably stage line
	24		Indian Rancheria in SW ¼ of the NW ¼: *Palma Seca* (Dry Palm) well in S ½ between SW ¼ and SE ¼; Unnamed road, probably stage line
	25		Only NE ¼ plotted
	26, 27, 33-35		Unsectioned and labeled as "Impracticable Mountains"
	28		Only NW ¼ plotted
GLO (1914a)	24		
	25		Indio Road and a drainage
	26		Two houses, one of which has name attached. Road indicated.
	27		Multiple drainages and a road indicated
	28		Multiple drainages.
	33-35		Multiple canyons and drainages
GLO (1968)	28		Resurvey, nothing indicated
Township 6 south, Range 6 east			
GLO (1905)	2	-	Multiple drainages.
	3	Southern Pacific Railroad (1906 deeded)	Multiple drainages.
	4	Gower, Clinton Marcellas (1932 deeded)	Multiple drainages.
Township 5 south, Range 7 east			
GLO (1856b)	19, 30		Unnamed road, probably stage line
GLO (1914b)	19, 30	Taylor, William H. (1920), Hohman, Charles (1928)	Nothing indicated

Most of the Project is within Township 5 south, Range 6 east, sections 14, 15, 21-28, 33-35 (GLO 1856a & b, 1914, 1968). The 1914 survey was limited to those sections that were not surveyed in 1856 in the rugged "Impracticable mountains" with some minor additions in adjacent sections. Resurvey in 1968 was undertaken in Section 28. In Township 6 south, Range 6 east one survey (GLO 1905) included the Project whereas in Township 5 south, Range 7 east, two (2) surveys (1856 and 1914) included the Project. Overall, in these three (3) separate Townships/Ranges, the results of analysis indicate very little development during the times dating

to these records. When historically pertinent data was visible, mostly depicted roads, but very little land ownership was recorded in the deeds on the survey maps and deeds.

The earliest USGS quad map of the Project is the 1904 *Indio, Calif.* 15-minute quad that depict the location of the wells from whence the City of Indian Wells draws its name, as well as the Maricopa-Bradshaw/Bradshaw Stage Route which largely conforms to the present-day location SR-111. A large water reservoir is the only other feature depicted within what would later become the City (Appendix A, Map 6).

Additional historic USGS maps of the City date from as early as 1941 through the modern era as late as 1984 (USGS 2020). The following maps were referenced:

- *Toro Peak, Calif.* 15 minute (1:62,500 scale), 1941;
- *Santa Ana, Calif.* (1:250,000 scale), 1947, 1949, 1956, 1959, 1960, 1965;
- *La Quinta, Calif.* 7.5 minute (1:24,000 scale), 1959, 1972, 1980;
- *Palm Desert, Calif.* 15 minute (1:62,500 scale), 1959; and
- *Palm Springs* (1:100,000 scale), 1986.

These maps track the growth of the Indian Wells area through the middle and latter half of the 20th century. In 1941, the Indian Wells is essentially rural with structures mostly along SR-111 but diffusely scattered in the northern portions of the City (Appendix A, Map 7). It is not until 1959 on the Santa Ana maps that the suburban development, more characteristic of the present-day City of Indian Wells become apparent along SR-111 (Appendix A, Map 8). This process of development is marginally more evolved by 1972 as shown on maps from this period though after this year by 1980 the updated version of the same map indicates a jump in development density (Appendix A, Map 9 & 10).

Aerial photographs, dating to as early as 1936 were available for analysis. Photos for interwar and Great Depression era generally indicate horticultural pursuits in the northern portion of the Project area. The Bradshaw Highway, roughly following the Maricopa-Bradshaw/Bradshaw Stage Route has been clearly graded and paved from photos from this period. Known as the "Spine of the Cove Communities" this road was potentially graded as early as 1915. By 1953, aerial photographs indicate the continued trajectory of alfalfa and arboriculture though nearly entire south of the Whitewater River. Aerial photos reveal the El Dorado Golf club and associated suburban housing development as early as 1959 nestled in the mouth of two unnamed canyons. By the late 1970's into the 1980's aerial photographs indicate the replacement of the horticultural fields with suburban development the continuation of golf course development.

Field Survey

A reconnaissance-level overview of the City was conducted by Edgar Alvarez of DUKE CRM on December 22, 2020. Reconnaissance survey consisted of visiting previously recorded prehistoric and historic archaeological sites and built environment resources. Revisits to site and resource locations were cursorial in effort. The goal was to determine if the resource was present and if the surrounding area of the resource has been disturbed. A total of 72 cultural resources have been previously recorded within the City. Of these, 21 sites were accessible in the field (Table 4). Of these, four (4) sites were relocated. The remainder of the sites could not be relocated due to development projects or were not within the public right of way and located on inaccessible private property. For example, the Reserve, a golf and country club, located in the Hidden Valley/Deep Canyon area of the City was on inaccessible private property. There is a total of 31 previously recorded sites located in this portion of the Project area that were not revisited during the reconnaissance survey. Photographs were taken at various points during the survey, and field notes were taken to document the findings (Figures 1 through 11). The reconnaissance-level survey of the City revealed that land use within the City is predominantly modern-age residential and luxury country club development. The foothills of the City consist of a mix of modern residential, luxury golf and country clubs, and modern commercial buildings. The mountain side west of the Eisenhower mountains are covered with private access golf and country clubs, while the Eisenhower mountains themselves cover half the City of Indian Wells and are undeveloped.

Currently, multiple construction projects are underway in the City. For example, the Province at Indian Wells project, a large luxury home development, was currently being built and two (2) previously recorded cultural resources are located within this project, both of which were inaccessible for reconnaissance survey. In addition to the ongoing construction, the general character within the City consists of modern, nonhistorical era buildings, less than 50 years old. Many of the residential homes within the City have a Spanish Colonial Revival or modern Mid-Century style. Many areas of the City are undeveloped.

Table 4. Cultural Resources Locations Visited during Reconnaissance Survey

Primary No.	Trinomial	Status	Notes
P33-007517	-	Observed	Mediterranean and Spanish Revival rectangular house extant, well maintained
P33-017518	-	Not Observed	Inaccessible due to the Province private development
P33-007522		Not Observed	Status unknown due to the Province private development
P33-001315	CA-RIV-1315	Not Observed	Status unknown due to Desert Horizons Country Club private development
P33-003886	CA-RIV-3886	Not Observed	Status unknown due to Toscana Country Club private development
P33-013300	CA-RIV-7402	Not Observed	Status unknown due to Toscana Country Club private development
P33-001455	CA-RIV-1455	Not Observed	Status unknown due to single family residential properties
P33-007529	-	Observed	Mediterranean/Spanish Revival home extant, well maintained
P33-007528	-	Not Observed	Status unknown due to Vintage Country Club private development
P33-002935	CA-RIV-2935	Not Observed	Status unknown due to Indian Wells Golf Resort
P33-002934	CA-RIV-2934	Not Observed	Status unknown due to Esmeralda Resort & Spa
P33-001754	CA-RIV-1754	Not Observed	Status unknown due to Renaissance Esmeralda Resort & Spa
P33-007523	-	Not Observed	Status unknown due to single family residential properties
P33-007516	-	Not Observed	Inaccessible due to Indian Wells Country Club private development
P33-004107	CA-RIV-4107	Not Observed	Status unknown due to single family residential properties
P33-004108	CA-RIV-4108	Not Observed	Status unknown due to single family residential properties
P33-024880	-	Not Observed	50% surface visibility, highly disturbed with modern refuse
P33-012674	-	Not Observed	Status unknown due to single family residential properties
P33-003008	CA-RIV-3008	Not Observed	Status unknown due to Tennis Garden Gate 9 development; grass field and circled by asphalt pavement
P33-003007	CA-RIV-3007	Observed	Disturbed with modern refuse, brownware sherds found
P33-000064	CA-RIV-64	Not Observed	60% surface visibility; site location heavily disturbed by modern refuse, erosion, and foot and vehicle traffic, no resources found
P33-017574	-	Not Observed	Site destroyed; now a vacant lot
P33-001530	CA-RIV-1530	Observed	70% surface visibility; site disturbed by vehicle traffic and proximity to Miles Avenue, brownware sherds found
P33-009556	-	Not Observed	Status unknown due to single family residential properties
P33-009557	-	Not Observed	Status unknown due to single family residential properties
P33-009558	-	Not Observed	Status unknown due to single family residential properties
P33-007924	CA-RIV-5876	Not Observed	Site destroyed: storage shed and grass field now where site location is
P33-003005	CA-RIV-3005	Not Observed	Site destroyed; now a grass field with irrigation sprinklers



Figure 1. P33-007517 overview along Cook Street, view east/southeast.



Figure 2. P33-007529 overview along Purple Hills Road, view northeast/east.



Figure 3. P33-003007 overview on top of sand dune from northern end of site, view SW.



Figure 4. P33-001530 overview from eastern end of site boundary, view west.



Figure 5. Original location of P33-000064 from northern levee, view south



Figure 6. Location of P33-003005 where grass field and irrigation sprinklers are now, view SW



Figure 7. Original location of P33-007924 where gated storage shed and field are now, view NE



Figure 8. Original location of P33-003008 where grass field and asphalt pavement are now, view SE



Figure 9. Original location of P33-007522 where the Province development is now, view east



Figure 10. Original location of P33-003886 where Toscana Country Club is now, view northwest



Figure 11. Original location of P33-002934 where Renaissance Emerald Resort & Spa is now, view NW

RECOMMENDATIONS

The unique events, people, nature, and places of the City of Indian Wells have shaped its history, archaeology, and paleontology. The traces of these events, people, nature, and places are cultural and paleontological resources that are the physical remains of past activities. DUKE CRM recommends compliance with CEQA that requires a Lead Agency to evaluate if a proposed project would have a significant adverse effect on the environment, including historical resources. CEQA Guidelines pertaining to historical resources (Section 15064.5(b)(1)) state that "A substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired". The previous management goals and polices developed by the former City of Indian Wells General Plan of 1996 appear to be in compliance with CEQA. The following recommendations build on the previous goals and policies regarding the treatment of paleontological, archaeological, and historic resources.

Paleontological Resources

The paleontological resources research indicates that no paleontological resources have been documented within the City; however, geologic formations present in the City are known to contain paleontological localities with rare, well-preserved fossil materials that offer important information about the plant or animal and/or its evolutionary history. Five (5) formations (*Qoa*, *Qof*, *Qye*, *Qya*, and *Qyf*) have been determined to be highly sensitive for paleontological resources. These important resources are most often destroyed because of construction, such as excavation, trenching, and tunneling. Impacts can be mitigated through pre-construction and construction mitigation programs.

A qualified paleontologist is a person with a B.S. or B.A. in geology, paleontology, or closely related discipline with an emphasis in paleontology and demonstrated experience and competence in paleontological research, fieldwork, reporting, and curation.

For all projects in the City, the following recommendations are made:

1. It is recommended that for all projects in which the City of Indian Wells is the Lead Agency, that all areas are considered to contain deposits with high paleontological sensitivity at the surface, or high paleontological sensitivity at depth, resource assessment shall be completed before CEQA compliance review.
2. It is recommended that the paleontological resources assessment reports and any relevant mitigation measures be drafted by a qualified paleontologist.
3. It is recommended that any significant fossils be curated at the Western Science Center or similar accredited curation facility.

Archaeological Resources

Seventy-two (72) archaeological resources have been previously recorded within the City. Many of the areas mapped as previously containing archaeological resources have been developed and cultural resources therein destroyed as a result of development.

Prehistoric and historic archaeological sensitivity is mapped within the City and include the eastern segment of SR-111 and a small section just south of the Whitewater River Channel (Appendix A, Map 11). Archaeological sensitivity within the City has been mapped using a concentration of previously identified prehistoric and historic resources described in the records search and on historic maps.

Prehistoric sensitivity is concentrated in two locations within the City: north and south of the Whitewater River Channel and the eastern segment of SR-111. Twenty-five (25) prehistoric sites and isolates have been previously identified along the Whitewater River Channel including the Native American village site of *Kavinish* (CA-RIV-64) which may contain prehistoric, ethnographic and historic era buried deposits. The second location of prehistoric sensitivity within the City is located in Hidden Valley, in the southwest corner, in the foothills west of the Eisenhower Mountains. Although the area has gone through a large-scale country club development known as the "Reserve", there is a potential for buried deposits from the concentration of 31 prehistoric sites and isolates in the vicinity.

Historic sensitivity within the City is along the SR-111 corridor where historic sites and historic built environment resources are focused. The Bradshaw trail, where SR-111 is now, was used extensively during the 1860s and could potentially yield resources during highway improvements. Additionally, the USGS 15-minute 1941 *Toro Peak, Calif.* quadrangle map illustrates buildings and roads north and south of SR-111 and an agricultural field where the El Dorado Golf Course now exists. Most of these historic structures and buildings have been destroyed by modern development projects but buried deposits may remain. The two historic properties that remain extant (P33-007517 and P33-007529) are located south of SR-111 on Cook Street and Purple Hills Road and are the only structures still standing from the early 20th century.

The following recommendations for archaeological resources should be applied to all projects conducted within the jurisdiction of the City of Indian Wells.

The following recommendations for cultural resources should be applied to all projects conducted within the jurisdiction of the City of Indian Wells. For all projects within the City, it is recommended that County of Riverside (2009) protocols be followed.

1. It is recommended that for all projects in which the City of Indian Wells is the Lead Agency; the City Planner shall refer to Maps (Appendix D) for a baseline of previously recorded cultural resources, though additional research will be required.
2. The City should require cultural resource survey for all projects not previously investigated in the last 10 years and cleared for cultural resources, consistent with requirements of CEQA.
3. All archaeological work within the City should be supervised by a qualified archaeologist. A qualified archaeologist is a person with a M.A. or M.S. in anthropology or archaeology (or closely related field)

with at least one (1) year of full-time professional experience in the field of archaeology, who has completed a supervised field school, who possess a demonstrated ability to conduct research to completion, and who maintains one (1) year in a supervisory level in archaeological study; and who is RPA-certified.

4. Resources should be avoided during development and if avoidance is not possible or feasible, then the resources should be evaluated for the CRHR consistent with CEQA.
5. If found to be eligible for listing on the CRHR, cultural resources should be avoided or mitigated (i.e., data recovery or some other means) under the direction of a qualified archaeologist.
6. In areas of cultural resources, archaeological monitoring should be undertaken during construction under the direction of a qualified archaeologist.
7. It is recommended that cultural resources assessment reports and any relevant mitigation measures be drafted by a qualified archaeologist and submitted to the City and the EIC.
8. It is recommended that any significant artifacts be curated at the Western Science Center or another facility within Riverside County that meets the requirements of 36 CFR Part 79.

Historic Built Environment Resources

Analysis of EIC and other databases of previously recorded resources within the IWGPU indicate five (5) historic built environment resources are currently identified within the City (see Table 2). None are listed on the NRHP or CRHR. Three built environment resources were previous determined eligible for the NRHP. Of these, two (2) buildings (P33-007521 and P33-007522) are no longer extant. P33-007517 is extant. The remaining two (2) previously recorded built environment resources (P33-007528 and P33-007529) were determined not eligible for the NRHP or the CRHR.

Built environment resources designated CRHR-eligible historical resources under CEQA and are afforded the same consideration as those applied to CRHR-eligible prehistoric or historic era archaeological resources (see above).

The following recommendations for built environment resources should be applied to all projects conducted within the jurisdiction of the City of Indian Wells.

1. Built environment resources greater than 50 years of age should be evaluated by a qualified architectural historian for CRHR eligibility as part of the CEQA review process.
2. The Mills Act program should continue.
3 Broaden the City's definition of what kind of buildings can apply for Mills Act status to be more than just those on the NRHP (see #3, below).
4 The City should expand its definition of "qualified historic resources" to align to the definition under California Government Code 50280, i.e.
   (a) Listed in the National Register of Historic Places or located in a registered historic district, as defined in Section 1.191-2(b) of Title 26 of the Code of Federal Regulations.
   (b) Listed in any state, city, county, or city and county official register of historical or architecturally significant sites, places, or landmarks.
   - California Register of Historical Resources
   - California Historical Landmarks
   - California Points of Historical Interest
   - Locally designated properties (such as City of Indian Wells Landmarks)

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Tribal Cultural Resources

Any policies adopted by the City that pertain to TCRs should be incorporated into the planning process following consultation with locally represented California Native American groups. It is recommended that TCRs be their own separate category distinct from archaeological, historical, cultural, and paleontological resources, to reflect updates to CEQA (PRC § 21074).

All prehistoric archaeological sites and isolates are TCRs; however, plants and other natural resources, as well as geographic locations can also be a TCR. Unless already documented, TCRs can only be identified by Tribal

representatives or persons working on their behalf. It is therefore necessary to identify and document TCRs in direct consultation with local Tribes. It is recommended, as part of this General Plan update that the City conduct thorough consultations through the following state and federal laws:

1. AB 52 Consultation: When the City decides to undertake a project or determines a project application is complete, the City shall comply with AB 52 Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2.
2. SB 18 Consultations: Before adopting any General Plan, General Plan amendment, specific plan, or specific plan amendment, the City shall comply with Government Code Section 65352.3.

The subsequent identification and treatment of TCRs within the jurisdiction of the City is to be developed directly between the City and consulting Tribes.

CONCLUSIONS

DUKE CRM has conducted a cultural (archaeological and historical) and paleontological resources assessment for IWGPU for the City comprised of approximately 9,336 acres. The purpose of this report is to inventory the previously recorded paleontological and cultural resources in the City and provide the City with the data necessary to assess the potential for impacts to these resources during implementation of the IWGPU. This effort was completed in compliance with the CEQA. The number of paleontological, archaeological, and historic resources located within the City is also updated.

DUKE CRM requested cultural and paleontological records searches. There are 72 previously identified cultural resources mapped within the City consisting of prehistoric, historic, and multicomponent resources. The bulk of these resources are within areas previously subjected to development and are therefore no longer extant. Additional elements of these resources may remain intact and should be considered during future development. Remaining extant resources should be assessed on a case-by-case basis as part of the CEQA review process to determine if they meet the criteria for NRHP- and/or CRHR-eligibility. Fossil localities have not been previously recorded in the City. The City is underlain by several Pleistocene-age deposits that are considered to have a high sensitivity for paleontological resources due to the discovery of these resources near the City in similar deposits.

Where the City if the Lead Agency under CEQA, continued compliance with the resource management regulations in CEQA (Section 15064.5) and elsewhere (see Regulatory Setting, above) is recommended. It is recommended that TCRs be added to the City's categories of cultural resources which reflect changes to CEQA (PRC § 21074(c); 21083.2(h)).

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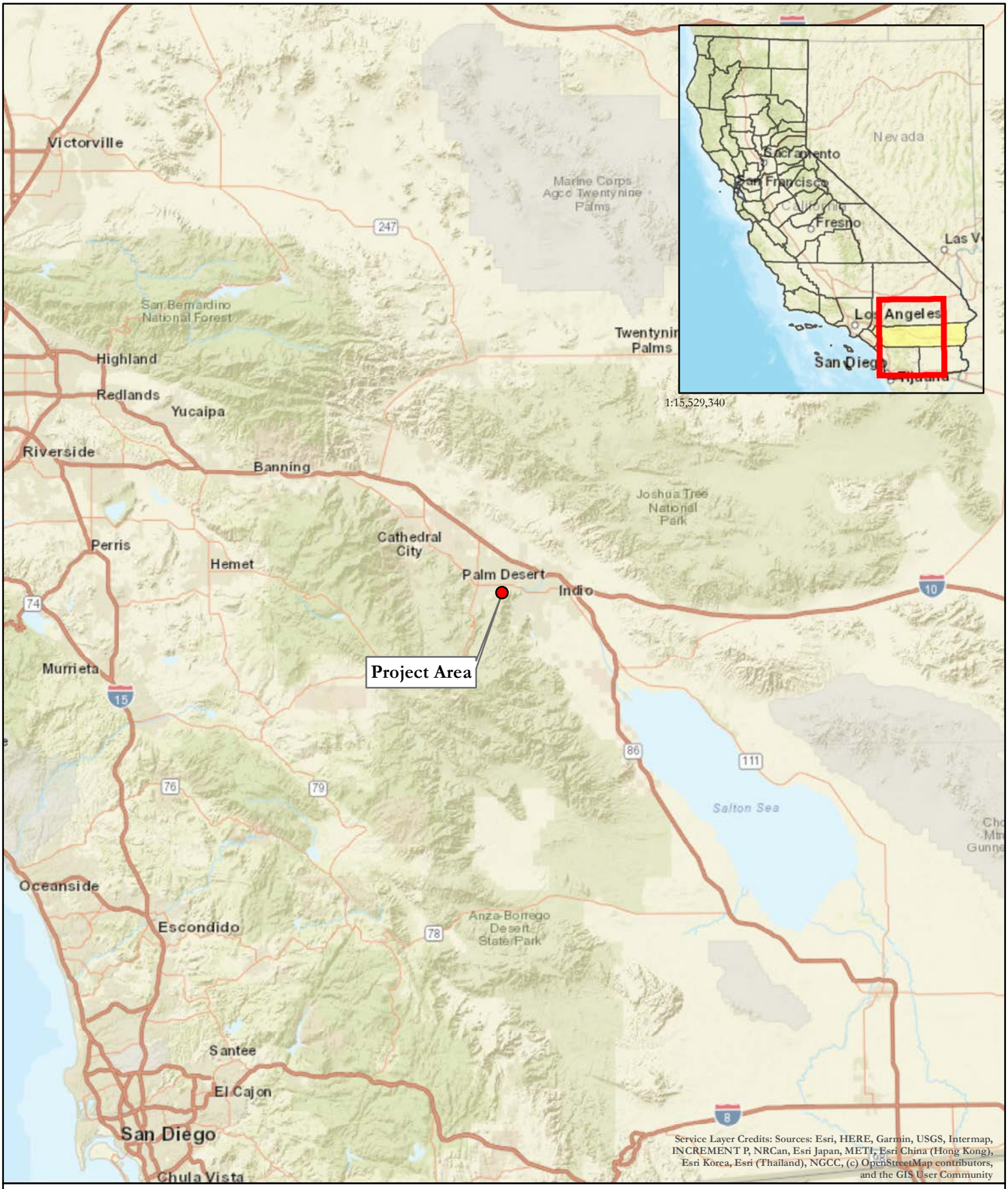
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Appendix A

Project Maps



Map 1 - Project Vicinity
Indian Wells GPU, C-0330

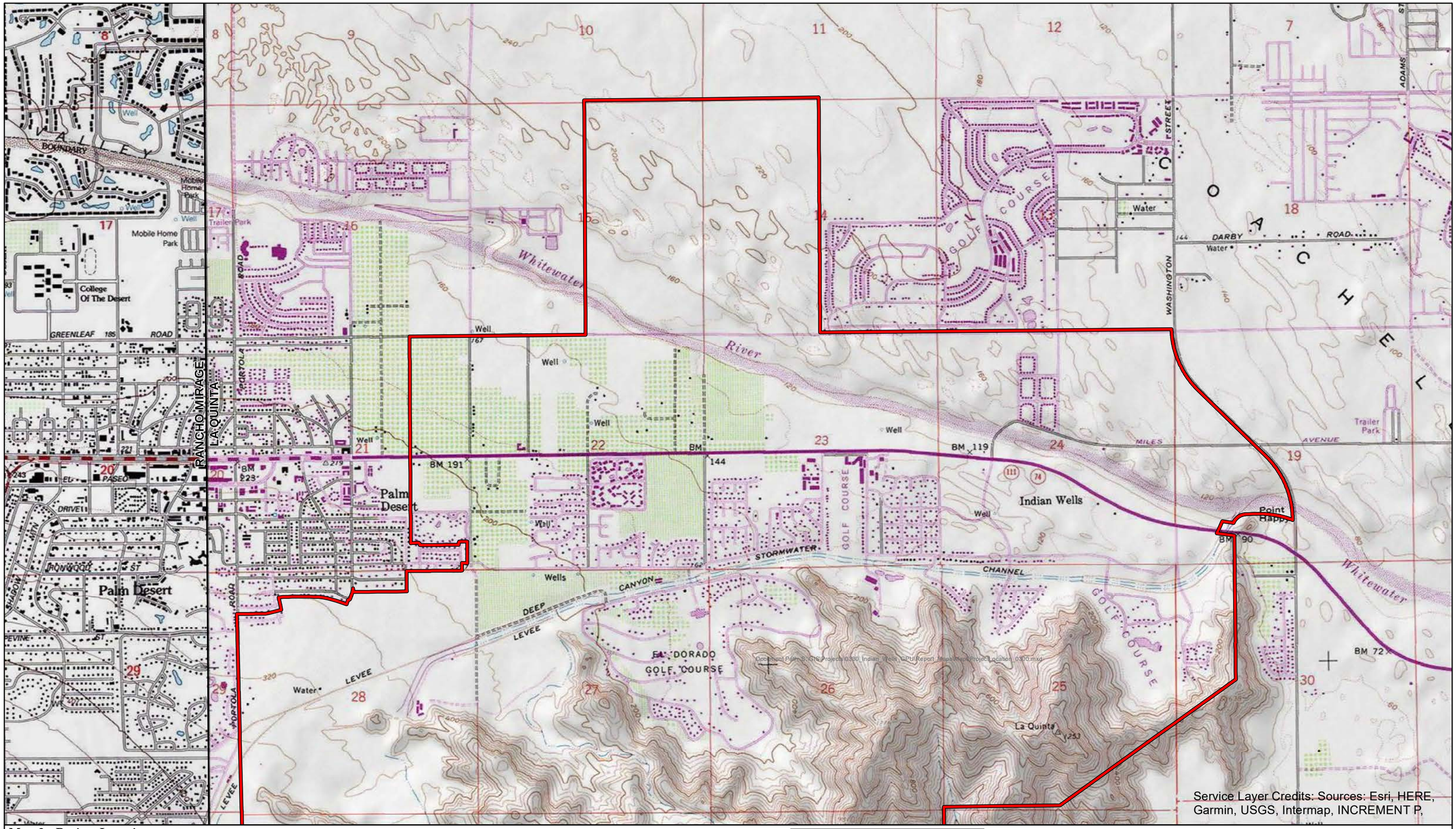
DUKE CRM

● Project Area

0 15 30 Miles

1 inch = 16 miles 1:1,000,000

N



Map 2 - Project Location (Page 1 of 2)

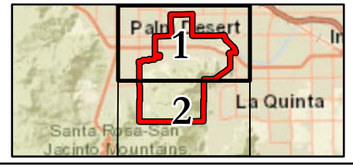
Indian Wells GPU, C-0330

DUKE CRM

Project Area

USGS 7.5' Quads

La Quinta, Calif 7.5'



0 0.5 1 Miles

0 0.5 1 Kilometers

N

1 inch = 2,000 feet

1:24,000

Map 2 - Project Location (Page 2 of 2)

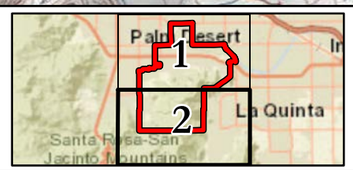
Indian Wells GPU, C-0330

DUKE CRM

Project Area

USGS 7.5' Quads

La Quinta, Calif 7.5'



0 0.5 1 Miles

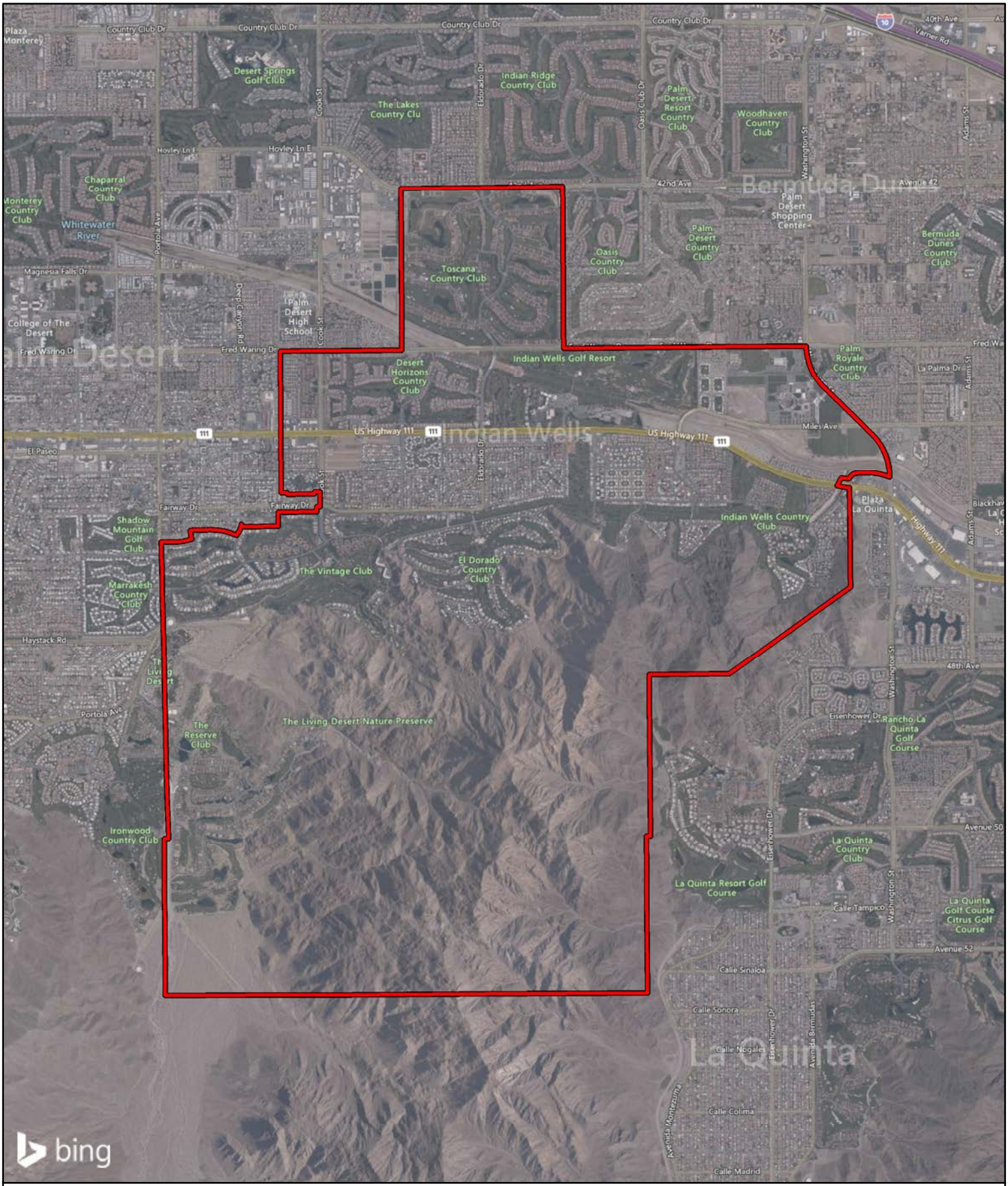
0 0.5 1 Kilometers

N

1 inch = 2,000 feet

1:24,000

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P,



Map 3 - Project Aerial
Indian Wells GPU, C-0330

DUKE CRM

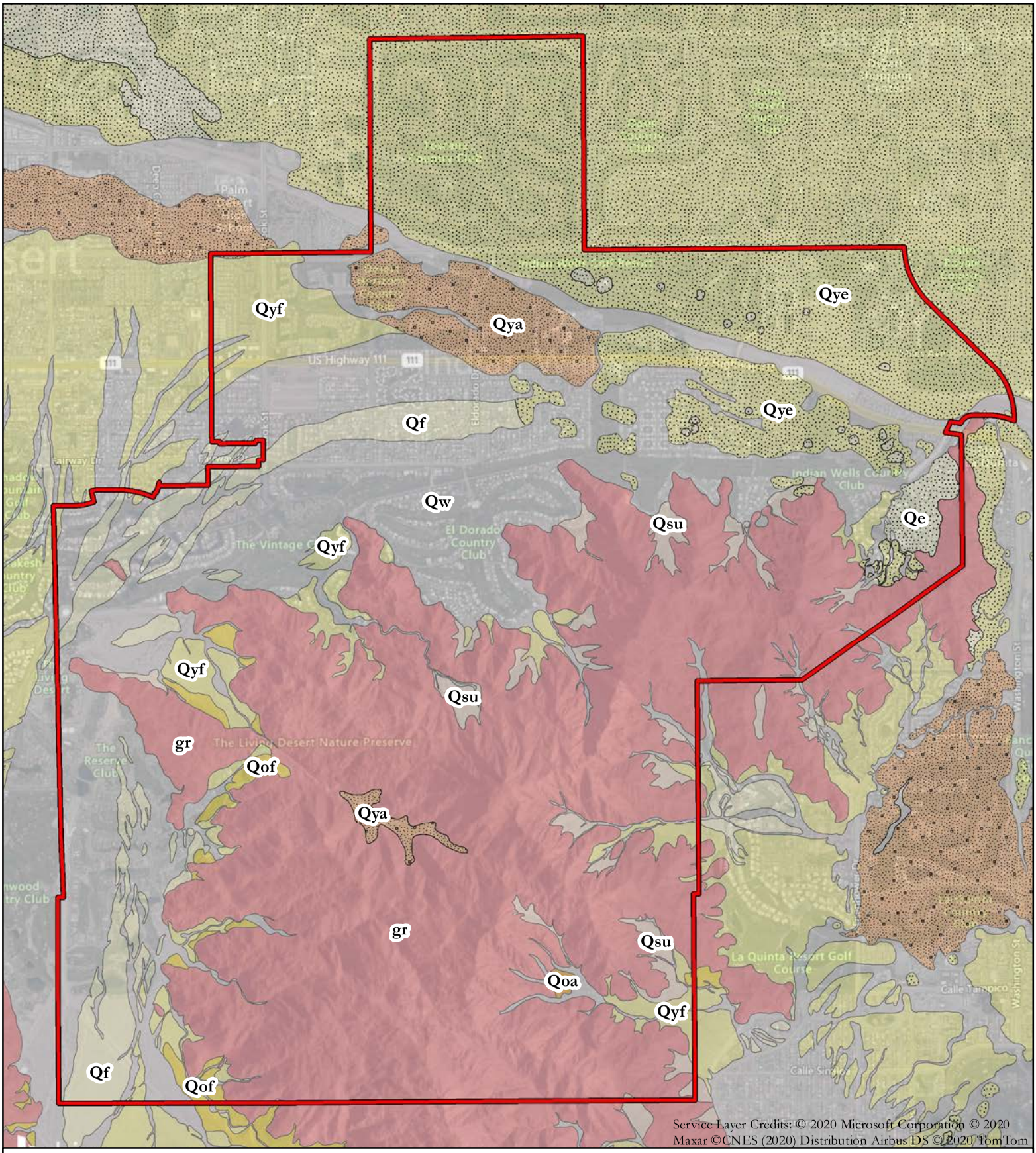
Project Area

0 2,500 5,000 Feet

N

1 inch =4,167 feet

1:50,000



Map 4 - Project Geology

Indian Wells GPU, C-0330

Geology from Lancaster, et al. (2012):

- Qsu: undifferentiated surficial deposits
- Qw: alluvial wash deposits
- Qf: alluvial fan deposits
- Qe: eolian and dune deposits
- Qyf: young alluvial fan deposits
- Project Area
- Qya: young alluvial valley deposits
- Qye: young eolian and dune deposits
- Qof: old alluvial fan deposits
- Qoa: old alluvial valley deposits
- gr: granitic and other intrusive crystalline rocks of all ages

N

0 1,000 2,000 Feet

1 inch = 3,167 feet

1:38,000

DUKE CRM

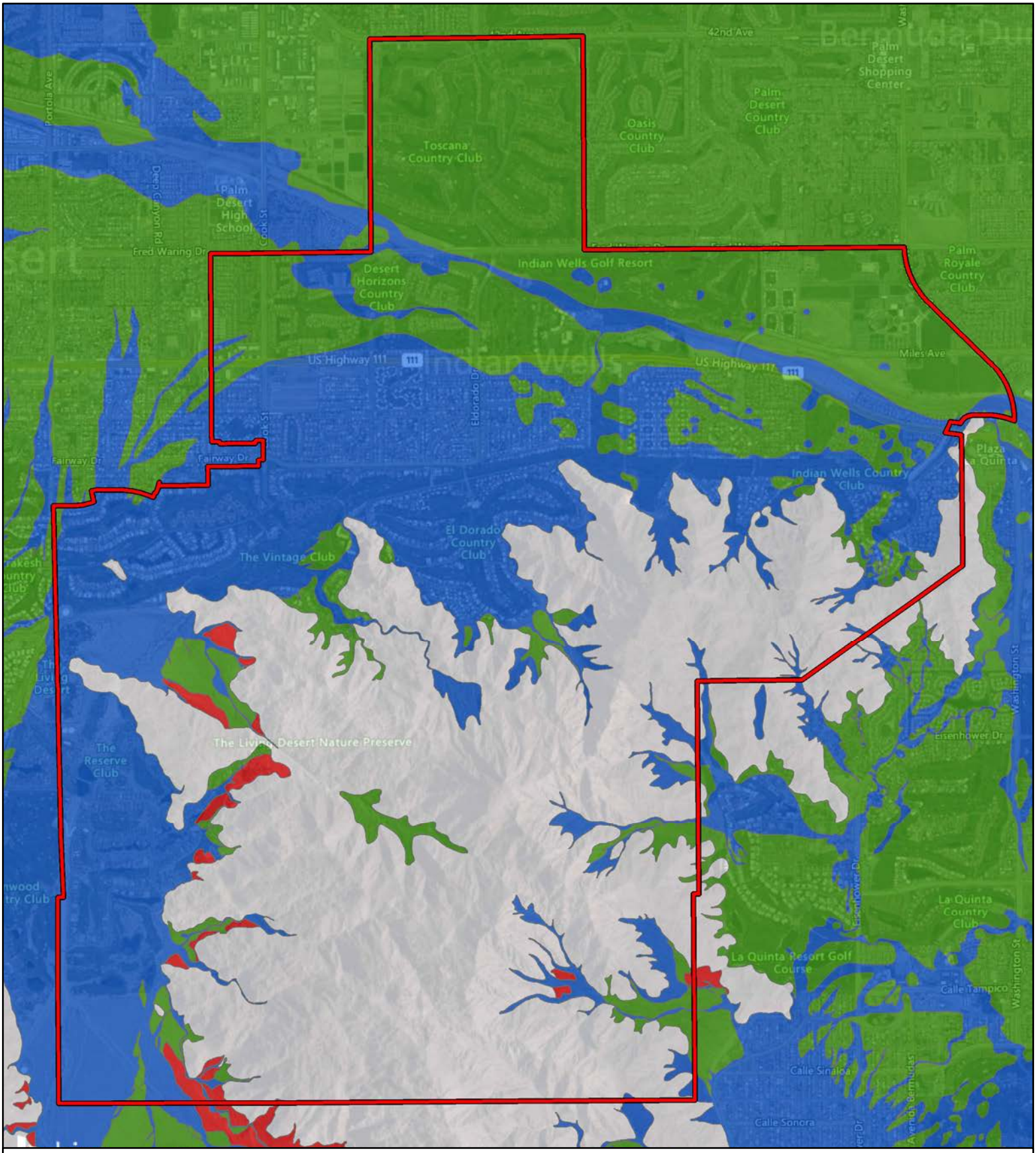


Figure 5 - Paleontological Sensitivity Map

Indian Wells GPU, C-0330

DUKE CRM

Project Area

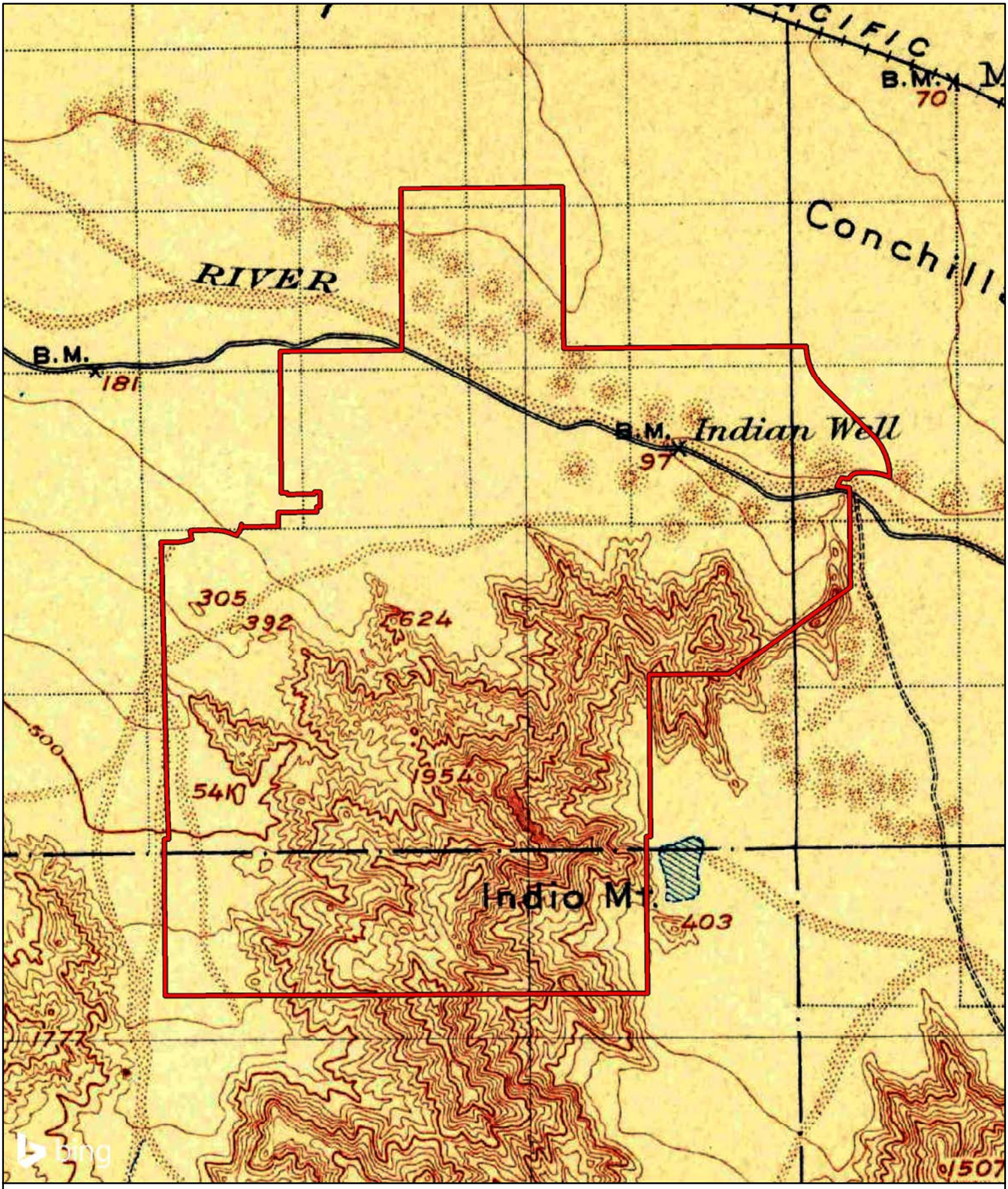
- High sensitivity at the surface
- High sensitivity at depth
- Low sensitivity
- No sensitivity

N

0 1,000 2,000 Feet

1 inch = 3,167 feet

1:38,000



Map 6 - USGS 15' 1904 Indio, Calif. with Project overlay

Indian Wells GPU, C-0330

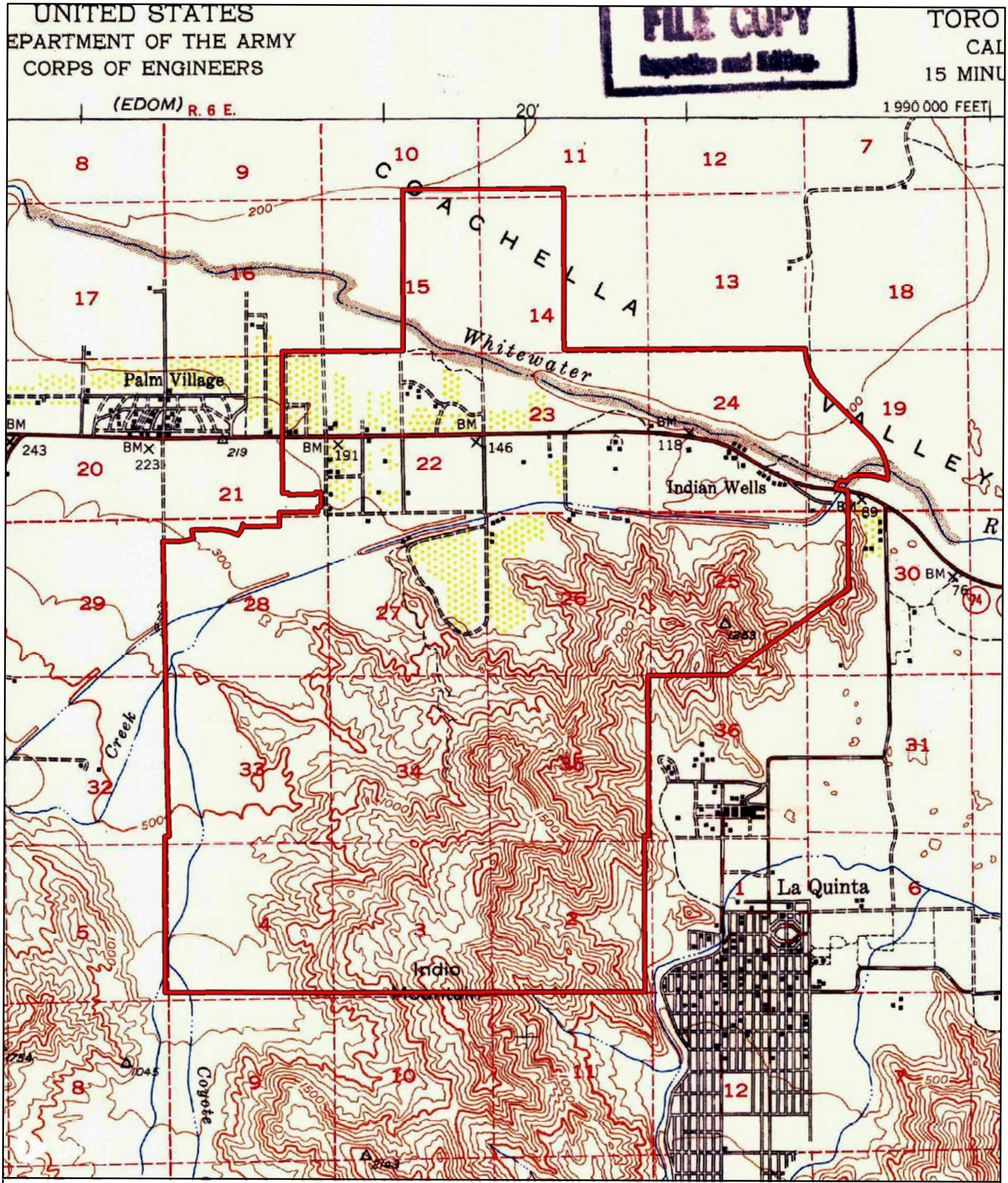
DUKE CRM

Project Area

0 2,500 5,000 Feet

N

1 inch =4,167 feet 1:50,000



Map 7 - USGS 15' 1941 Toro Peak, Calif. with Project overlay

Indian Wells GPU, C-0330

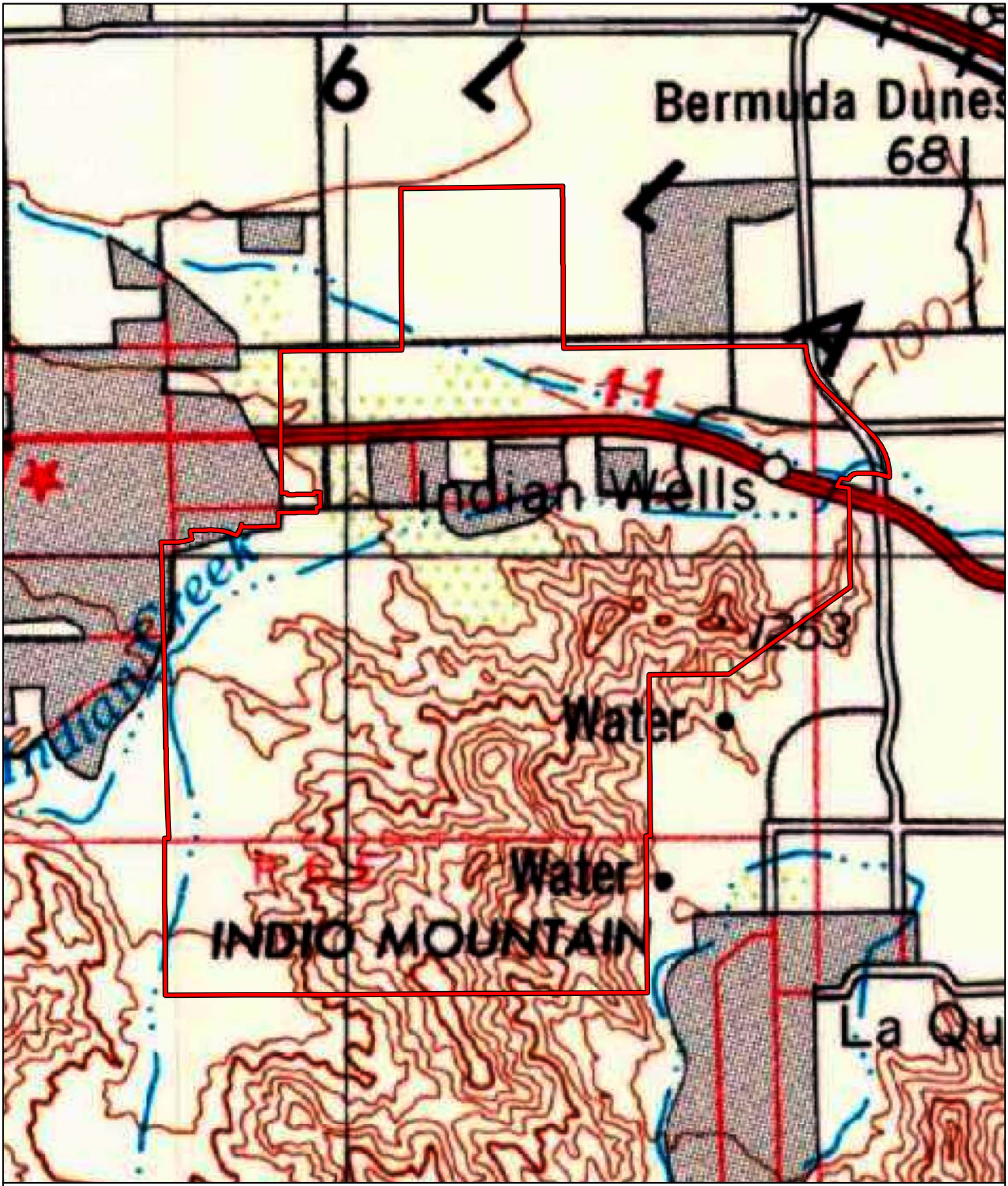
DUKE CRM

Project Area

0 2,500 5,000 Feet

N

1 inch =4,167 feet 1:50,000



Map 8 - USGS 1959 Santa Ana, Calif. with Project overlay
Indian Wells GPU, C-0330

DUKE CRM

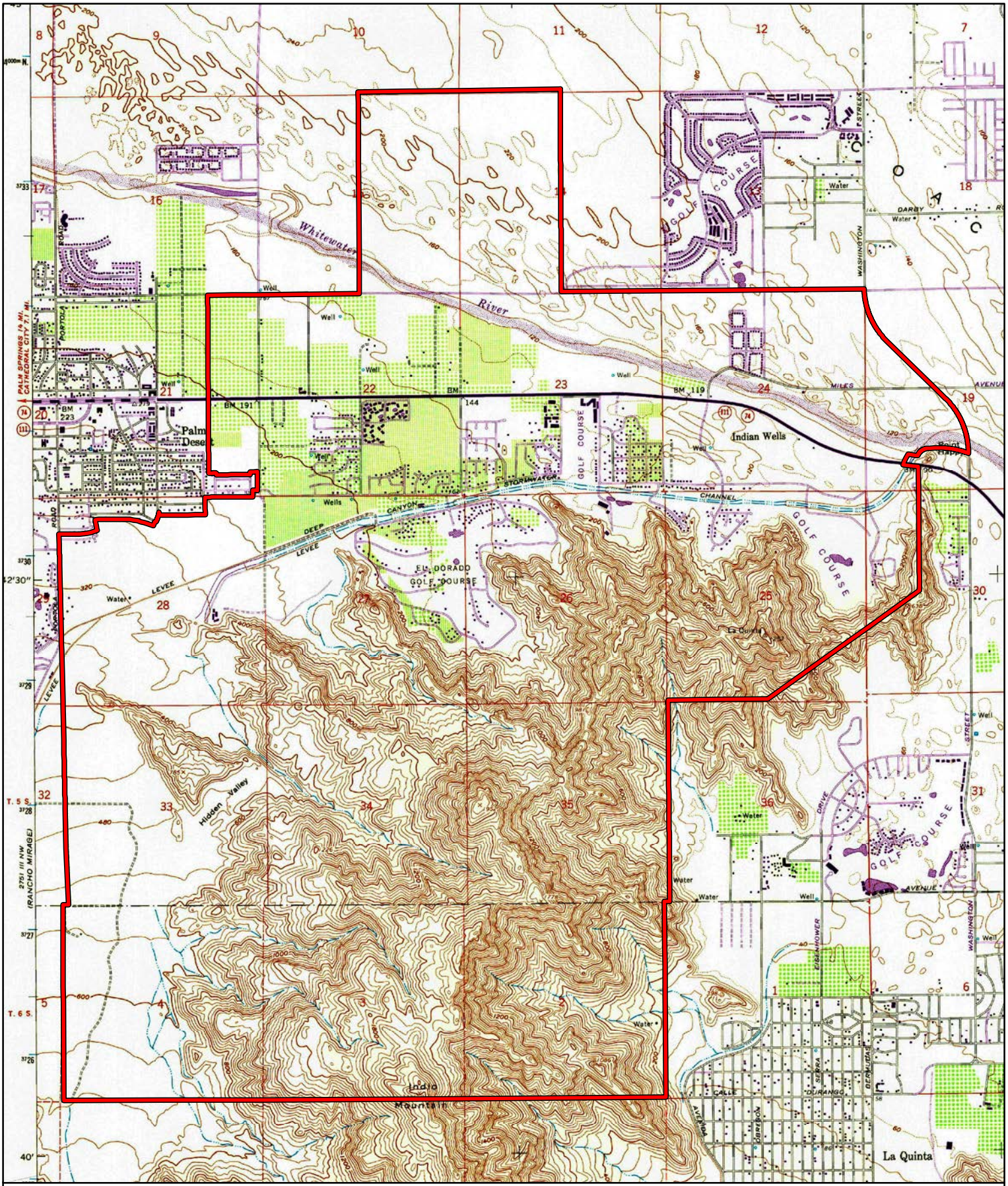
Project Area

0 2,500 5,000 Feet

1 inch =4,167 feet

1:50,000

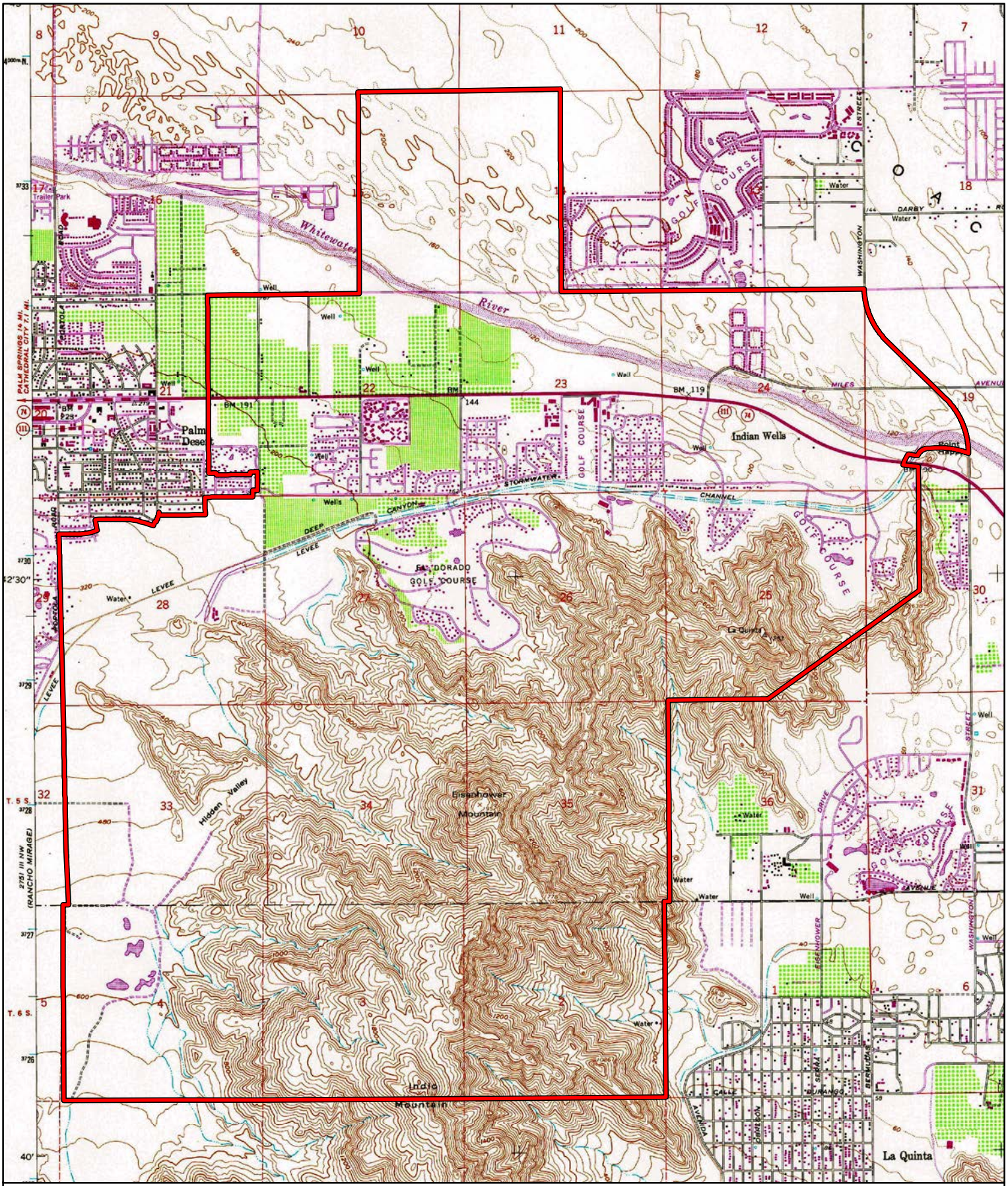
N



Map 9 - USGS 7.5' 1972 La Quinta, Calif. with Project overlay

Indian Wells GPU, C-0330

DUKE CRM



Map 10 - USGS 7.5' 1980 La Quinta, Calif. with Project overlay

Indian Wells GPU, C-0330

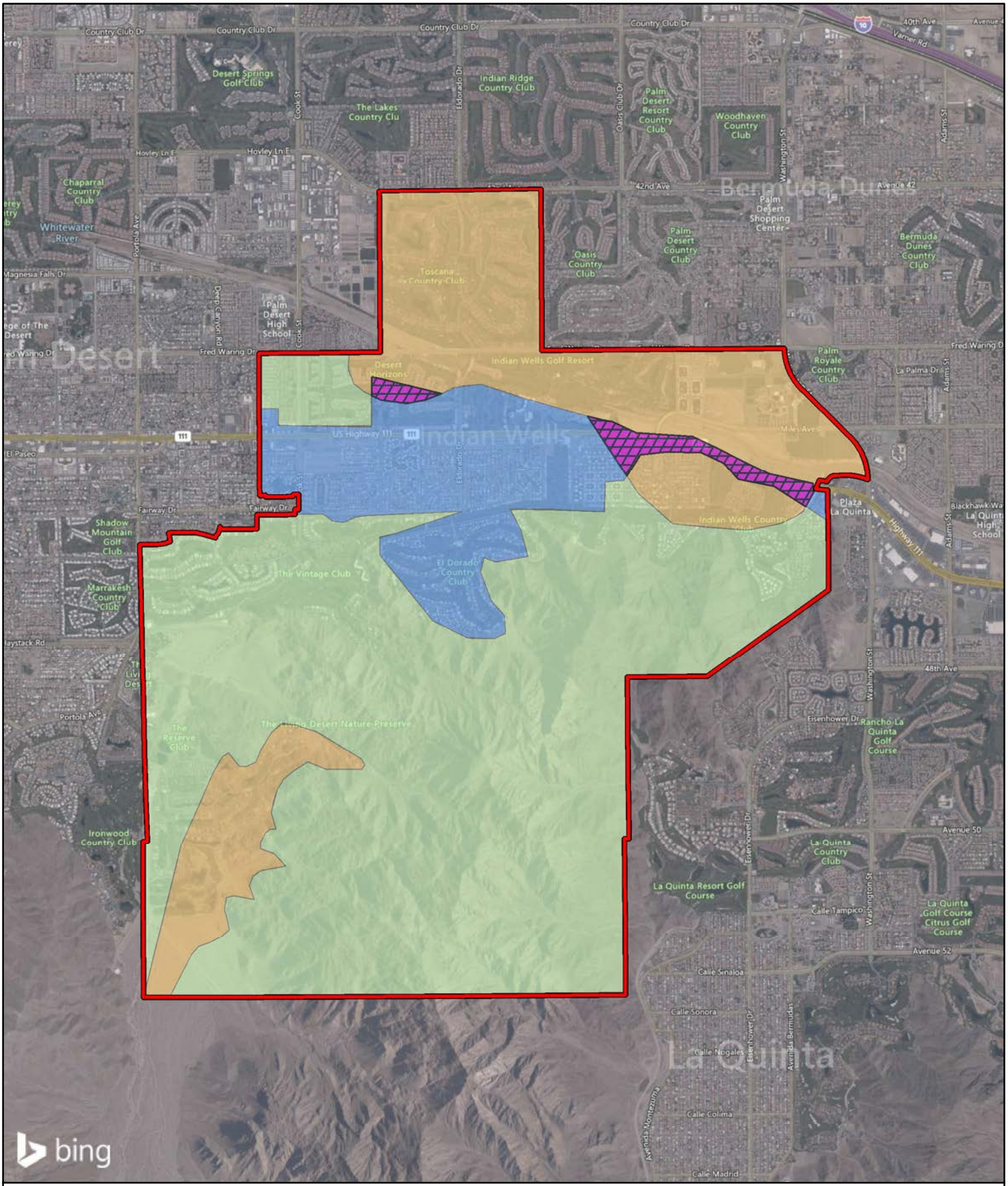
DUKE CRM

Project Area

0 2,000 4,000 Feet

N

1 inch =3,333 feet 1:40,000



Map 11 - Project Archaeological Sensitivity

Indian Wells GPU, C-0330

DUKE CRM

Project Area

Prehistoric and Historic sensitivity

Prehistoric sensitivity

Historic sensitivity

Unknown sensitivity

0 2,500 5,000 Feet

N

1 inch =4,167 feet

1:50,000

Appendix B

Resumes

DUKE CRM

18 Technology Dr., Ste. 103
Irvine, CA 92618
949-356-6660
www.dukecrm.com

Curt Duke

President/Principal Archaeologist



Expertise

Cultural Resources Management
California Prehistory
Section 106 Compliance
CEQA Compliance
Native American Consultation

Education

CSU, Fullerton, M.A., Anth, 2006
SDSU, Grad Studies, Anth, 1996-97
UC Santa Cruz, B.A., Anth, 1994

Professional Registrations

RPA, No. 15969
County of Riverside (No. 151)
County of Orange

Professional Memberships

Society for California Archaeology
Society for American Archaeology
Pacific Coast Archaeological Society
Assoc. of Environmental Professionals
Building Industry Association

Professional Experience

President/Principal Archaeologist, DUKE CRM, March 2011 to present
Archaeologist/Principal, LSA Associates, 1997-2011
Archaeological/Paleontological Technician, Various Companies, 1995-97
Archaeological Technician/Teachers Assistant, Cabrillo College, 1994
Anthropological Laboratory Technician, UC Santa Cruz, 1994

Selected Project Experience

Reid/Baldwin Adobe, LA Arboretum, Arcadia, 2019-Present
Veteran Affairs Medical Clinic, Santa Rosa, 2019
Deane Dana Friendship Park, Rancho Palos Verdes, 2019
Makayla Mine Expansion Project, Olancha, 2019
Sweeny Road, Lompoc, 2018
Vantage Point Church, Eastvale, 2016 and 2018
VA West Los Angeles Campus Master Plan, 2017-Present
Avenue S-8 and 40th St. E. Roundabout, Palmdale, 2017-18
SR-110 Improvements, Los Angeles, 2017
Diamond Valley Estates Specific Plan, Hemet, 2017
VA West Los Angeles Campus Hospital Replacement, 2016-Present
Shoemaker Bridge Replacement, Long Beach, 2016-Present
Spruce Goose Hangar, Playa Vista, 2016
Rice Avenue at 5th Street Grade Separation, Oxnard, 2015-Present
Vila Borba, Chino Hills, 2013-Present
Skyridge Residential, Mission Viejo, 2011-Present
Baker Water Treatment Plant, Lake Forest, 2014-2015
VA Clinic, Loma Linda, 2014-Present
Evanston Inn, Pasadena, 2014-2016
Petersen Ranch, Leona Valley, 2013-2014
California Street/Highway 101, Ventura, 2014-Present
6th Street Bridge Replacement, Los Angeles, 2013-Present
I-15/I-215 IC Project, Devore, 2008-10
Colton Crossing Rail-to-Rail Grade Separation, 2008-11
City of LA DPW BOE, On-Call, Cultural/Paleo Services, 2008-11
Mid County Parkway, Riverside County, 2014-10
McSweeny Farms Specific Plan, Hemet, 2004-08
Mesquite Regional Landfill, Coachella Valley, 2006-08
Hacienda at Fairview Valley Specific Plan, Apple Valley2007-08
Majestic Hills Specific Plan, Hesperia, 2006-07
Chuckwalla Solar I Project, Desert Center, 2007-08
Needles Highway Improvement Project, 2004-06
Superstition Solar I Project, Salton Sea, Imperial County, 2008
Muddy Canyon Archaeological Project, Newport Beach, 1997-2001
Temecula 32, Archaeological Phase II Testing, 2007
Mammoth Lakes Parks/Rec and Trail System Master Plan, 2010
24th Street Improvements, City of Bakersfield, 2008-11
California Valley Solar Ranch, San Luis Obispo County, 2009-10
Delano-Alpaugh Water Pipeline, Kern/Tulare Counties, 2006-09
I-15/SR-79 IC Project, Temecula, 2006-10
Westlake Historic Resources Survey, Los Angeles, 2008-09
CETAP, western Riverside County, 1999-2001
Los Coches Creek Elementary School, near Alpine, 2003-06
Oak Valley Specific Plan 1 Amendment, Beaumont, 2004
San Nicolas Island, Naval Base Ventura County, CA, 1997

DUKE CRM

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Irvine, CA 92618
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Nicholas F. Hearth

Principal Investigator/ Archaeologist



Expertise

Cultural Resources Management
California Prehistory
Section106 & CEQA Compliance
Native American Consultation
Lithic Analysis

Education

UC, Riverside, PhD Candidate, Anthropology
UC, Riverside, M.A., Anthropology, 2006
UMass, Amherst, B.A., Anthropology, 2003

Professional Registrations

RPA, No. 989903

Professional Memberships

Society for California Archaeology
Society for American Archaeology
Prehistoric Quarry and Early Mines Interest Group
Coachella Valley Archaeological Society

Professional Archaeological Experience

Principal Investigator, DUKE CRM, March 2018-present.
Field/Laboratory Director, DUKE CRM, 2014-2018.
Associate Archaeologist, Applied EarthWorks, 2012-2014.
Archaeologist, Public Archaeology Laboratory, 2011-2012.
Project Leader, Valles Caldera National Preserve, 2011.
Field Director, Florin Cultural Resource Services, 2010.
Archaeologist, Bighorn Archaeological Consultants, 2009-2010.
Lithic Analyst/Field Supervisor, Northwestern University Archaeology Project, 2007-2009.
Crew Chief, Yalahau Region Human Ecology Proj., 2005-2007.
Report Writer, CRM Tech, 2006.
Field Technician, Yalahau Region Human Ecology Proj., 2004.
Field/Laboratory Technician, Public Archaeology Survey Team, 2003-2004.
Laboratory Director/Laboratory Assistant/Field Technician, UMass Archaeological Services, 2002-2003.

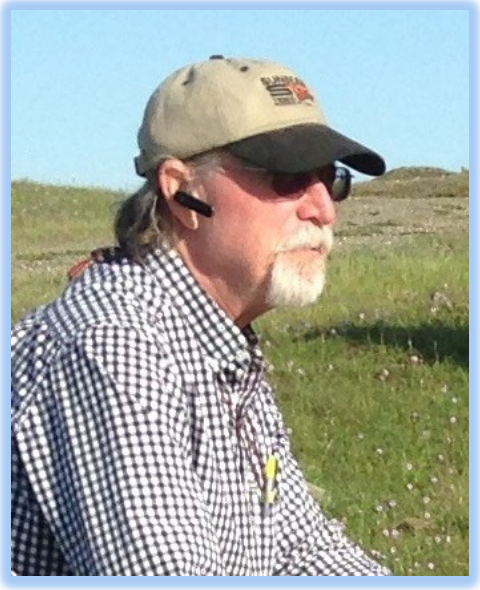
Selected Project Experience*

Reid-Baldwin Adobe, LA Arboretum, Arcadia, 2019 – present
SR 57-60 IC and Golf Course, Diamond Bar, 2019 - present
Makayla Mine Expansion Project, Olancha, 2019
PCH Signal Improvements, Malibu, 2019 – present
Ocean Place (Tract 17425), Seal Beach, 2018 - present
1st over Glendale, Los Angeles, 2018 - 2019
Diamond Valley Estates Residential, Hemet, 2017 - present
SBCTA 210/Pepper, Rialto, 2016-2019
Vila Borba Residential, Chino Hills, 2015-present
California Street, Ventura, 2014-present
Skyridge Residential, Mission Viejo, 2014-present
26426 National Trails Highway, Helendale, 2018
City of Redlands TTM20126, 2018
Vanderham Monitoring, Jurupa Valley 2017-2018
Trumark-Higgins Monitoring, Chino Hills, 2017
Mission Heritage, Riverside, 2017
76 Station, Orange, 2016
Vantage Point Church, Eastvale, 2016
Rancho Mirage Resignalization, 2015-2016.
Rice Avenue at 5th St., Grade Separation, Oxnard, 2015-2018
Lakeside Temescal Valley Residential Development, 2014-2016
Tracy Hills Specific Plan, 2015
Clinton Keith Road Expansion, Murrieta, 2014
Mission Hills Reservoir, Indio, 2013
Regent Crossroads, Winchester, 2013
Crowder Canyon Arch. District Data Recovery Plan, 2013
San Gabriel Trench Archaeological Project, 2013
I10/Jefferson St. Interchange Improvement, 2012-2013
PG&E TCS Remediation, Needles, 2012 to 2014
Old Place Neck Data Recovery, Staten Island, NY. 2012
Jackson Flat Data Recovery Kanab, UT, 2009-2010
**Complete project experience available upon request*

DUKE CRM
18 Technology Drive, #103
Irvine, CA 92618
949-356-6660
www.dukecrm.com

Brian Glenn

Principal Investigator/Archaeologist



Professional Experience: 30 Years

Expertise

Cultural Resources Management
California Prehistory
Section106 & CEQA Compliance
Native American Consultation
Database (Collections) Management

Education

UCLA , M.A. Anthropology, 1991
UC, Santa Barbara, B.A., Anthropology, 1986
UC, Santa Barbara, B.A., Geography, 1986
San Diego Mesa College, Certificate, GIS, 2010

Professional Registrations

RPA, No. 989903

Professional Memberships

Society for California Archaeology
Society for American Archaeology
San Diego County Archaeological Society President, 1999

Summary of Qualifications

Mr. Glenn has worked on hundreds of cultural resources management projects over his 30 year career. This includes projects throughout California in compliance with Section 106 of the National Historic Preservation Act (NHPA) and California Environmental Quality Act (CEQA). He is listed on the RPA and meets the Secretary of Interior Standards for Principal Investigator. His recent experience includes cultural resources surveys and studies for clients such as the Los Angeles Department of Water and Power, Metropolitan Transit Authority, and La Plaza Foundation. His responsibilities have included the preparation of technical reports (assessment, evaluation, and mitigation), cultural resources management plans and EIS/EIR sections, as well as archaeological monitoring. He has training and significant experience in lithic, faunal, typological and spatial analyses, as well as obsidian source and hydration studies. He has identified, evaluated, and investigated historic era resources from a 1792 Spanish gun emplacement on Ballast Point overlook San Diego Bay to late 19th to mid-20th century household and commercial deposits. Mr. Glenn received B.A. degrees in Geography and Anthropology from UC, Santa Barbara and an M.A. in Archaeology from UCLA. During his graduate work at UCLA, he was acting coordinator of the SCCIC (CHRIS).

Selected Project Experience

First Solar Energy Blythe #1, City of Blythe, CA

Mr. Glenn supervised construction monitoring of the 200-acre solar project in Blythe. CA and prepared the Phase IV report for the County of Riverside. A single historic era dump site was located, recorded and reported.

Hammock Project, SCE, County of Riverside, CA

Conducted a cultural resources assessment of a two-mile section of transmission line in anticipation of upgrades.

Arbor Ridge, Beaumont, CA

Conducted a Phase I cultural resources assessment of a 1,200-acre project area in Beaumont, Riverside County that included historic archives review, pedestrian survey and paleontological literature review for SunCal Development/City of Beaumont.

MWD of Southern California Potholing Project. County of Riverside, CA

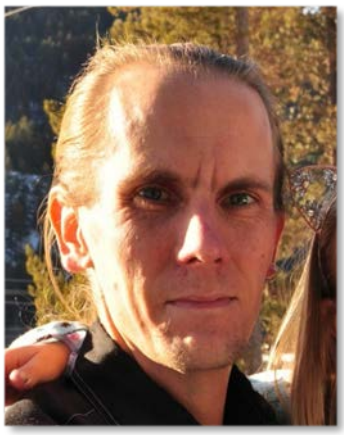
Conducted a pedestrian survey of six proposed potholing locations directly adjacent to the Colorado River Aqueduct for the Metropolitan Water District of Southern California.

DUKE CRM

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(949) 356-6660 Ext 1005
www.dukecrm.com

Benjamin Scherzer

Paleontologist



Expertise

Paleontological Resources Management
Fossil excavation
Fossil preparation
Stratigraphy
Natural gas mudlogging
Directional drilling

Education

M.S., Earth Science, 2008, MSU, Bozeman, MT
B.A., Geology/Math, 2002, Earlham College, IN

Professional Registrations

Paleontologist, County of Orange
Paleontologist, County of Riverside

Professional Memberships

Society of Vertebrate Paleontology
Geological Society of America
Society for Sedimentary Geology
American Association of Petroleum Geologists, Pacific Section
South Coast Geological Society
Western Association of Vertebrate Paleontologists

Publications and Professional Papers

Scherzer, B. 2017. A possible physeteroid (cetacea: odontoceti) from the Yorba member of the Puente Formation, Orange County, California.

Scherzer, B. 2016. An archaic baleen whale (Cetacea: Mysticeti) from the Vaqueros Formation, and other fossil material from the Skyridge Project, Orange County, California.

Scherzer, B. 2015. Miocene teleost fish from Chino Hills: preliminary results from the Vila Borba Project, San Bernardino County, California.

Professional Experience

Paleontologist, DUKE CRM, February 2014-present
Paleontologist, VCS Environmental, 2020-present
Paleontologist, Rincon Consultants, 2020-present
Paleontologist, Red Tail Environmental, 2020-present
Paleontologist, L&L Environmental, 2017-2018
Stratigrapher, Archeological Resource Management Corp., 2015-2018
Paleontological Specialist II, SD Natural History Museum, 2013-2018
Paleontological Specialist II, SWCA (Pasadena), 2012-2015
Paleontologist, SWCA (Vernal, UT), 2011-2012
Fossil Preparator, Carter County Museum, 2010-2011
Physical Science Technician, Badlands National Park, 2010
Mudlogger/Geologist, Pason Systems USA, 2006-2009
Paleontological Field Assistant, ARCADIS US, 2006-2007

Selected Project Experience

210 Mixed Flow Lane Addition, Highlands, 2020-present
Reid-Baldwin Adobe, Arcadia, 2019-present
San Jacinto GP & Update, San Jacinto, 2019-present
I-5 Widening, Aliso Viejo, 2018-2020
Sweeny Rd, Lompoc, 2018-2020
Atlanta Avenue Widening, Huntington Beach, 2018-present
Ocean Place, Seal Beach, 2018-present
Lake Forest Civic Center, Lake Forest, 2018-present
Vanderham Monitoring, Jurupa Valley, 2017-2018
Gold Flora Farms, Desert Hot Springs, 2017-2019
I-5 HOV Truck Lanes, Santa Clarita, 2017-2018
Brasada Homes, San Dimas, 2017-2018
Indus Light Industrial Building, Chino Hills, 2017-2018
Murrieta's Hospitality Commons, Murrieta, 2017-2019
6th Street Viaduct, Los Angeles, 2017-present
I-15 TEL, Riverside and San Bernardino Counties, 2017
Lewis Street, Anaheim, 2017
The Crossings, Chino Hills, 2016-2017
Reata Glen, Mission Viejo, 2016-2018
Greenville-Banning Channel, Costa Mesa, 2016
Diamond Valley, Hemet, 2017
Marywood Residential, Orange, 2016-2017
Rancho Mission Viejo, Mission Viejo, 2015-2018
Santa Margarita Water District Tesoro Reservoirs, Mission Viejo, 2015
Evanston Inn, Pasadena, 2015
Sycamore to Peñasquitos 230 kV Transmission Line, San Diego, 2015
Lakeside Temescal Valley, Temescal Valley, 2015-2020
Vila Borba, Chino Hills, CA, 2013-present
RP-Outfall Relocation, Ontario, 2014
Serrano Ridge, Temescal Valley, 2014
Lago Los Serranos, Chino Hills, 2014
Baker WTP, Lake Forest, 2014
Skyridge Residential, Mission Viejo, 2014-present
Pacific Highlands, San Diego, 2014
Sol y Mar, Ranchos Palos Verdes, 2013-2014
Mojave Solar Power, Hinkley, 2013
Genesis Solar Energy, Blythe, 2012-13

DUKE CRM

18 Technology Drive, Ste. 103
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Edgar Alvarez

GIS Analyst/ Archaeologist



Years Experience: 5 Years

Years with DUKE CRM: 2 Months

Expertise

Cultural Resources Management
California Prehistory
Section106 & CEQA Compliance
Native American Consultation
GIS Analysis

Education

CSU, Northridge, B.A., Anthropology, Minor in GIS, 2016
PCIAP, Catalina Island Field School, 2015

Professional Memberships

Society for California Archaeology
Society for American Archaeology

Selected Project Experience

PCH Signal Systems Project, Malibu, 2020
Indian Wells General Plan, 2020
Lawndale General Plan, 2020
Mokelumne Aqueducts Tunnel, Stockton, 2020
Sunnymead Car Wash, Moreno Valley, 2020
Vernola Marketplace Project, Jurupa Valley, 2020
Bluff Street Reservoir Project, Norco, 2020
Purple Line Extension (Westside Subway), L.A., 2018 - 2019
Southern California Edison (SCE) EC L.A., 2018 - 2019
Rincon Band of Luiseno Indians Survey, SD, 2018 - 2019
Purple Line Extension 2 (Rodeo Subway), Beverly Hills, 2020
El Centro International Border Wall, El Centro, 2020
SOCAL Gas Pipeline, Seal Beach, 2020
(LAWA) Terminal 1.5 Project, L.A., 2018 - 2 019
Desert Trails Preparatory Project, Victorville, 2019
Florence Mills Apartments Project, L.A. , 201 9
Ridge Development Project, Penryn, 2019
31801 Pacific Coast Highway Project, Malibu, 2018
Boyle Heights Sports Center Gym Project, L.A., 20 18
Cold Canyon Landfill Expansion, Arroyo Grande, 2018
Daggett Solar Farm Project, Daggett, 2018
Roosevelt Park Stormwater Capture Project, L.A., 2018
Ava Hollywood Mixed Use High-Rise Project, L.A., 2018
Corona Affordable Housing Project, L.A., 2018
Elk Creek Bridge Studies (TO 31), Lake Mendocino, 2019
Carlotta Curve Improvement (TO 56), Lake Mendocino, 2019
Three Bridges Replacement (TO 57), Lake Mendocino, 2019
South Eel River Bridge Seismic (TO 6 0), Lake Mendocino, 2019
Gualala Shoulders and Rumble (TO 62), Lake Mendocino, 2019
State Route 132 West Freeway, Modesto, 2020
CBP Road Improvements, El Centro, 2019
Yuma International Border Wall, Yuma, 2020
LAX Police Station, Inglewood, 2019
Ladera Park Storm Water Capture, L.A., 2019
Gates Canyon Storm Water Capture, Calabasas, 2020
PG&E Irrigation Line, Pismo Beach, 2020
Deep Soil Mixing Project, Malibu, 2020
CBP Chula Vista INT Border Wall, Chula Vista, 2020
SCE Woolsey Fire, Malibu, 2018

Appendix C

Paleontological Record Search Results

WESTERN SCIENCE CENTER

DUKE CRM
Benjamin Scherzer
18 Technology Drive, Suite 103
Irvine, CA 92618

August 14, 2020

Dear Mr. Scherzer,

This letter presents the results of a record search conducted for the Indian Wells GPU Project in Riverside County, California. The project site consists of the entire boundary for the city of Indian Wells located in Section 10-16 of Township 5 South, Range 6 East, Section 1-5, 8-12, 20-29, 32-26 of Township 6 South, Range 6 East, and Sections 18, 19, and 30 of Township 5 South, Range 7 East on the *La Quinta*, *Rancho Mirage* and *Myoma* CA USGS 7.5 minute quadrangles.

The geologic units underlying this project are mapped in the northern half and western edge of the project area as Alluvial sand and wind-laid dune sand deposits dating from the Holocene epoch, with the southeastern project area mapped as quartz diorite deposits dating from the Cretaceous period (Dibblee, 2008). Quartz diorite is considered to be of low paleontological sensitivity, and while Holocene alluvial units are considered to be of high preservation value, material found is unlikely to be fossil material due to the relatively modern associated dates of the deposits. However, if development requires any substantial depth of disturbance, the likelihood of reaching the earliest Holocene or Late Pleistocene alluvial sediments would increase. The Western Science Center does not have localities within the project area or within a 1 mile radius, but does have a fossil locality within similarly mapped sediments under 5 miles from the project area associated with the Imagine Coachella Project that resulted in multiple specimens associated with the prehistoric Lake Cahuilla including freshwater bivalves, ostracods, and gastropods.

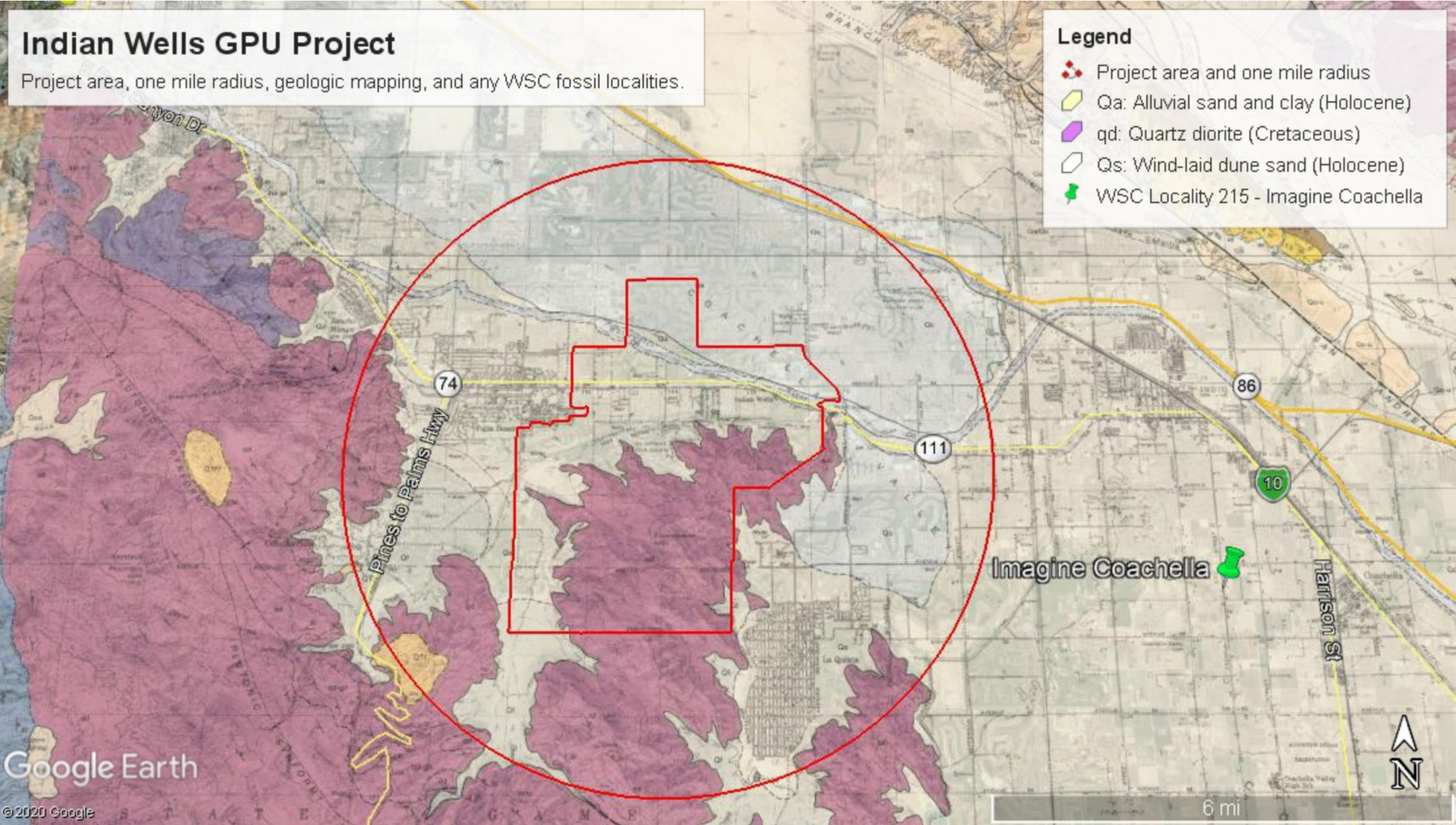
While the presence of any fossil material is unlikely, if excavation activity disturbs deeper sediment dating to the earliest parts of the Holocene or Late Pleistocene periods, the material would be scientifically significant. Excavation activity associated with the development of the project area is unlikely to be paleontologically sensitive, but caution during development should be observed.

If you have any questions or would like further information on the Imagine Coachella Project, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,



Darla Radford
Collections Manager


Indian Wells GPU Project
Project area, one mile radius, geologic mapping, and any WSC fossil localities.
Legend
Project area and one mile radius
Qa: Alluvial sand and clay (Holocene)
qd: Quartz diorite (Cretaceous)
Qs: Wind-laid dune sand (Holocene)
WSC Locality 215 - Imagine Coachella
74
Pines to Palms Hwy
111
86
10
Imagine Coachella
Harrison St
N
6 mi
Google Earth
©2020 Google

Appendix D
Cultural Resource Study Bibliography

Appendix D

Report #	Authors	Year	Citation Title	Resources
RI-00022	Steven R. McWilliams	1970	The Occupation Of The Shoreline Of Ancient Lake Cahuilla, Paper 1.	
RI-00050	Thomas F. King and George T. Jefferson	1972	An Archaeological Impact Study Of The Silver Spur Development Area At The Mouth Of Deep Canyon, Palm Desert, California.	33-000562, 33-000563, 33-000564, 33-000565, 33-000566, 33-000567, 33-000568
RI-00065	Joanne MacGregor	1972	Research In Indian Wells	
RI-00066	S.R Williams	1972	Evaluation Of The Archaeological Potential Of Tracts 4319, 4734, and Adjacent Areas at Indian Wells	33-000064
RI-00103	C.E Drover and N. Nelson Leonard, III	1978	The Coachella Valley County Water District Flood Control Assessment: A Cultural Resource Evaluation.	33-001320, 33-001321, 33-001322, 33-001323, 33-001324, 33-001325, 33-001326
RI-00131	Matthew C. Hall	1974	Archaeology of Indian Wells and Point Hapy Desert Planning area, California	33-000064, 33-000150
RI-00155	Leslie Mouriquand-Cherry	1993	Preliminary Cultural Resource Study for the Washington Street Bridge Widening {roject (92-3), La Quinta, California	
RI-00374	Victor deMunck	1978	Environmental Impact Evaluartion:Archaeological Assessment of Tentative Parcel Map 12508, Indian Wells, Riverside County, California	33-000167, 33-000168, 33-002059
RI-00404	Renee Giansanti	1978	Environmental Impact Evaluation: An Archaeological Assessment of Tract 9847, Indian Wells, Riverside County, California	
RI-00467	Paul G. Chace	1986	An Archaeological Survey of the Desert Club Development Near Indian Wells, in the County of Riverside, Tentative Tract No. 21650	33-012674
RI-00487	James Swenson	1978	Environmental Impact Evaluation: Archaeological Assessment of the Proposed Desert Horizons Country Club	33-001315
RI-00488	Donald Lipp	1979	Results of Surface Collections of Archaeological Materials at CA-RIV-1315, Near Indian Wells, Riverside County, California	33-001315
RI-00494	James Swenson	1978	Environmental Impact EvaluationL An Archaeological Assessment of Tentative Tract 12762, Indian Wells, Riverside County, California	
RI-00496	James D. Swenson	1978	Environmental Impact Evaluation: An Archaeological Assessment of 11.25 Acres Between Eldorado Drive and Indian Wells Lane, City of Indian Wells, Riveside County, California	33-001455
RI-00652	LANDO, RICHARD	1979	Cultural Resources Reconnaissance (Stage II) of Flood Control Alternatives for the Whitewater River Basin, Riverside County, California	33-009599
RI-00725	James D. Swenson	1979	Environmental Impact Evaluation: An Archaeological Assessment of the Proposed Richard Burger Country Club, South of the City of Indian Wells, Riverside County, California	
RI-01135	David Van Horn	1980	Archaeological Assessment of "Point Happy" Coachella Valley, Riverside County	
RI-01858	MACKO, MICHAEL E, JILL WEISBORD, and E.B. WEIL	1985	DRAFT REPORT: PRELIMINARY ARCHAEOLOGICAL TESTING RESULTS AT PREHISTORIC KAVINISH (CA-RIV-2935)	33-002935
RI-01859	MCCARTHY, DANIEL F.	1984	AN ARCHAEOLOGICAL ASSESSMENT OF THE INDIAN WELLS GOLF COURSE PROJECT, INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-001754, 33-002934, 33-002935

RI-01860	DUKE, CURT	1999	LETTER REPORT: CULTURAL RESOURCE ASSESSMENT FOR THE AT&T WIRELESS SERVICES FACILTY NUMBER R235, COUNTY OF RIVERSIDE, CALIFORNIA.	
RI-01861	LAPIN, PHILIPPE	1999	LETTER REPORT: CULTURAL RESOURCE ASSESSMENT FOR PACIFIC BELL MOBILE SERVICES FACILITY CM 419-01, COUNTY OF RIVERSIDE, CALIFORNIA.	
RI-01930	SUTTON, MARK Q.	1985	ENVIRONMENTAL IMPACT EVALUATION: AN ARCHAEOLOGICAL ASSESSMENT OF THE DESERT CLASSIC RESORT, INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-001530, 33-003005, 33-003006, 33-003007, 33-003008
RI-01931	MCKENNA, JEANETTE A.	1990	AN ARCHAEOLOGICAL AND HISTORICAL INVESTIGATION OF TRACT 25617, INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA.	
RI-01932	BROCK, JAMES	1997	CULTURAL RESOURCES ASSESSMENT FOR A PROPOSED GOLF DRIVING RANGE SOUTH OF MILES AVENUE IN UNINCORPORATED RIVERSIDE COUNTY NEAR INDIAN WELLS	33-007924
RI-01933	BROWN, JOAN C.	1998	A CULTURAL RESOURCES RECONNAISSANCE FOR 'THE GARDEN OF CHAMPIONS' TENNIS FACILITY, LOCATED NEAR INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-003005, 33-003008, 33-007924
RI-01934	BROWN, JOAN C.	2000	EVALUATION AND DATA RECOVERY FOM CA-RIV-3005, CA-RIV-3008, AND CA-RIV-5876, LOCATED NEAR INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA.	33-003005, 33-003008, 33-007924
RI-02063	WHITE, LAURIE S. and DAVID M. VAN HORN	1986	ARCHAEOLOGICAL SURVEY REPORT: PROPOSED SITE OF THE INDIAN WELLS RESORT AND CONVENTION CENTER	
RI-02064	WHITE, ROBERT S. and LAURA S. WHITE	2000	A CULTURAL RESOURCES ASSESSMENT OF THE HERITAGE CLUB PROJECT SITE, 600+ ACRES LOCATED IMMEDIATELY NORTH OF THE INTERSECTION OF FRED WARING DRIVE AND EL DORADO DRIVE, INDIAN WELLS, RIVERSIDE COUNTY.	
RI-02145	MCCARTHY, DANIEL F.	1987	CULTURAL RESOURCE IDENTIFICATION AND RECOMMENDATIONS FOR THE NORTHERN SPHERE SPECIFIC PLAN FOR THE CITY OF PALM DESERT, RIVERSIDE COUNTY, CALIFORNIA	
RI-02275	CHACE, PAUL G.	1988	AN ARCHAEOLOGICAL SURVEY - WARNER TRAIL DEVELOPMENT NEAR INDIAN WELLS	
RI-02658	WHITE, LAURIE and DAVID VAN HORN	1989	ARCHAEOLOGICAL INVESTIGATIONS AT THE CHAPIN ADOBE CITY OF INDIAN WELLS.	33-003886
RI-03044	WHITE, LAURIE S.	1990	AN ARCHAEOLOGICAL ASSESSMENT OF A 640 ACRE PARCEL AS SHOWN ON TT 26123 LOCATED IMMEDIATELY SOUTHWEST OF THE INTERSECTION OF COUNTRY CLUB DRIVE AND OASIS CLUB DRIVE IN PALM DESERT, RIVERSIDE COUNTY, CALIFORNIA.	
RI-03060	DUFFIELD, ANNE and GALE BROEKER	1990	DEEP CANYON PARCEL, 160 ACRES, SW 1/4 SECTION 4, T.6S R.6E SBBM.	33-001327
RI-03061	BROEKER, GALE	1990	DEEP CANYON PARCEL SOUTHWEST 1/4 OF SECTION 4, TOWNSHIP 6 SOUTH, RANGE 6 EAST, SBBM. A CULTURAL RESOURCE INVENTORY AND EVALUATION	33-001327, 33-004039, 33-013501
RI-03124	WHITE, ROBERT and D.M. VAN HORN	1989	AN ARCHAEOLOGICAL ASSESSMENT AND EXCAVATION ON TENTATIVE TRACT 24625 IN THE CITY OF INDIAN WELLS, RIVERSIDE COUNTY	33-004107, 33-004108
RI-03314	BROEKER, GALE A.	1991	CULTURAL RESOURCE INVENTORY REPORT: LOS VERDES WEST II LAND EXCHANGE	

RI-03489	Bruce Love, Joan S. Schneider, Gwyn Alcock, Dawn Reid, Kevin Hallaran, and Tom Tang	1992	Cultural Resources : La Quinta General Plan EIR	
RI-03547	WHITE, ROBERT S. and LAURIE S. WHITE	1992	AN ARCHAEOLOGICAL ASSESSMENT OF PORTIONS OF THE HIGHWAY 111 CORRIDOR SPESIFIC PLAN, CITY OF INDIAN WELLS, RIVERSIDE COUNTY.	33-000064, 33-002934
RI-03575	JERTBERG, PATRICIA	1992	CULTURAL RESOURCE ASSESSMENT FOR HIDDEN VALLEY, RIVERSIDE COUNTY, CALIFORNIA.	33-000438, 33-000566, 33-000568, 33-004361, 33-004967, 33-004968, 33-004969, 33-005547, 33-005568, 33-005569, 33-011814, 33-011815, 33-011816, 33-011817, 33-011818, 33-011819, 33-011820, 33-011821
RI-03576	STRUDWICK, IVAN H., DIANN L. TAYLOR, and BRADLEY L. STURM	1994	TEST LEVEL INVESTIGATIONS AT CA-RIV-5495, AND NATIONAL REGISTER EVALUATION OF CULTURAL RESOURCES WITHIN THE LOWE RESERVE PROJECT AREA RIVERSIDE COUNTY, CALIFORNIA	33-005547
RI-03758	HOGAN, MICHAEL	1994	CULTURAL RESOURCES SURVEY OF THE PROPOSED HIGHWAY 111 BICYCLE PATH, LOCATED IN THE CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-000064
RI-03759	HALL, M. C.	1995	LETTER REPORT: ARCHAEOLOGICAL MONITORING FOR PROPOSED HIGHWAY 111 BICYCLE PATH	
RI-03760	HALL, M. C.	1996	LETTER REPORT: ARCHAEOLOGICAL MONITORING FOR HIGHWAY 111 BICYCLE PATH AND LIGHTING PROJECT NO. 98-38	
RI-04009	BEAN, LOWELL JOHN	1996	LETTER REPORT: INVESTIGATION OF HISTORICAL RECORDS REGARDING ACCESS TO THE SUBJECT PROPERTY, SAN BERNARDINO MERIDIAN T.3S, R.2E, SECTION 5	
RI-04083	LOVE, BRUCE and BAI "TOM" TANG	1998	INTERIM CULTURAL RESOURCES REPORT: ARCHAEOLOGICAL CLEARANCE FOR GRADING PERMIT TRACT 26595, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-000064
RI-04139	BISSELL, RONALD M.	1998	CULTURAL RESOURCES RECONNAISSANCE OF THE 'STOP-N-SOCK' PROPERTY, LOCATED NEAR INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-001530, 33-007924
RI-04140	LOVE, BRUCE and HARRY M. QUINN	1998	ARCHAEOLOGICAL SURVEY, TESTING, AND MONITORING REPORT: THE RESERVE PROJECT, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-008162
RI-04181	LERCH, MICHAEL K.	1998	HISTORIC PROPERTY SURVEY REPORT: MILES AVENUE CROSSING OF THE WHITEWATER RIVER, RIERSIDE COUNTY, CALIFORNIA	

RI-04187	LOVE, BRUCE, BAI "TOM" TANG, and MICHAEL HOGAN	1999	CULTURAL RESOURCES REPORT: LA QUINTA COVE PROJECT CITY OF LA QUINTA, RIVERSIDE COUNTY, CALIFORNIA	33-002199, 33-003678, 33-005583, 33-008758, 33-008761, 33-008762
RI-04241	LOVE, BRUCE, BAI "TOM" TANG, and MICHAEL HOGAN	1999	HISTORICAL/ARCHAEOLOGICAL RESOURCES REPORT: ASSESSOR'S PARCEL NOS. 604-050-002 AND -035, NORTHWEST CORNER OF WASHINGTON STREET AND HIGHWAY 111, CITY OF LA QUINTA, RIVERSIDE COUNTY, CALIFORNIA.	
RI-04243	LOVE, BRUCE, BAI "TOM" TANG, and MICHAEL HOGAN	2000	HISTORICAL/ARCHAEOLOGICAL RESOURCES REPORT: WHITEWATER VILLAS PROJECT, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA.	
RI-04244	LOVE, BRUCE, HARRY M. QUINN, BAI "TOM" TANG, DARCY LYNN WIEWALL, and MICHAEL HOGAN	1999	CULTURAL RESOURCES SURVEY AND ARCHAEOLOGICAL TESTING/MITIGATION AT TENTATIVE TRACT 27747, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA.	
RI-04246	LOVE, BRUCE, BAI "TOM" TANG, and NATASHA L. JOHNSON	1999	CULTURAL RESOURCES REPORT: INDIAN WELLS COUNTRY CLUB EAST COURSE, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA.	33-000064
RI-04309	LAPIN, PHILIPPE	2000	CULTURAL RESOURCE ASSESSMENT FOR PACIFIC BELL WIRELESS FACILITY 419-01, COUNTY OF RIVERSIDE, CALIFORNIA.	
RI-04405	LAPIN, PHILIPPE	2000	CULTURAL RESOURCE ASSESSMENT FOR MODIFICATIONS TO PACIFIC BELL WIRELESS FACILITY CM 462-01, COUNTY OF RIVERSIDE, CALIFORNIA	
RI-04408	LOVE, BRUCE, BAI "TOM" TANG, and LAURA C. HENSLEY	2000	ARCHAEOLOGICAL MONITORING REPORT, TRACT 27747-1, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	
RI-04685	TUMA, MICHAEL W.	2004	ARCHAEOLOGICAL LITERATURE SEARCH AND SURVEY FOR THE GARDEN VILLAS AFFORDABLE HOUSING PROJECT IN INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-003008
RI-05062	MCKENNA ET AL.	2003	COMPLETION OF ARCHAEOLOGICAL MONITORING PROGRAM	33-000064
RI-05221	JACKSON, ADRIANNA	2001	LETTER REPORT: RECORDS SEARCH RESULTS FOR SPRINT PCS FACILITY RV35XC092S (COLDWELL BANKER SITE), INDIAN WELLS, RIVERSIDE COUNTY, CA	
RI-05224	WHITE, LAURIE	2000	LETTER REPORT: RECORDS SEARCH RESULTS FOR SPRINT PCS FACILITY RV35XC092A (HYATT RESORT), CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CA	
RI-05230	MCKENNA, JEANETTE	2001	NEGATIVE ARCHAEOLOGICAL SURVEY REPORT FIR THE CONSTRUCTION OF THE MILES AVENUE BRIDGE BETWEEN MILES AVEUNE AND MANITOU AVENUE, INDIAN WELLS, RIVERSIDE COUNTY, CA	
RI-05231	MCKENNA, JEANETTE	2002	HISTORIC PROPERTY SURVEY REPORT-NEGATIVE FINDINGS FOR THE CONSTRUCTION OF THE MILES AVENUE BRIDGE BETWEEN MILES AVENUE AND MANITOU AVENUE, INDIAN WELLS, RIVERSIDE COUNTY, CA	

RI-05423	LOVE, BRUCE, BAI TOM TANG, MARIAM DAHDUL, and ADRIAN MORENO	2001	HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT, INDIAN WELLS SENIOR HOUSING PROJECT, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CA	33-000064
RI-05742	DAHDUL, MARIAM, HARRY M. QUINN, and ADRIAN SANCHEZ MORENO	2003	FINAL CULTURAL REPORT, ARHCAEOLOGICAL TESTING AND EVALUATION AT CA-RIV-1530 AND A PORTION OF CA-RIV-5876, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-001530, 33-007924
RI-05793	LOVE, BRUCE, HARRY QUINN, MARIAM DAHDUL, and ADRIAN MORENO SANCHEZ	2002	ARCHAEOLOGY OF THE ARCHAIC PERIOD IN THE COACHELLA VALLEY, FINAL MITIGATION REPORT FOR INDIAN WELLS COUNTRY CLUB EAST COURSE, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-000064
RI-05794	LOVE, BRUCE, HARRY QUINN, TOM WAKE, and MARIAM DAHDUL	2001	FINAL REPORT ON ARCHAEOLOGICAL MONITORING AND CREMATION REMAINS RECOVERY AT INDIAN WELLS COUNTRY CLUB EAST COURSE, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-000064
RI-05831	LOVE, BRUCE, BAI TANG, HARRY QUINN, and MARIAM DAHDUL	2001	FINAL REPORT: CULTURAL RESOURCES SURVEY, TESTING, MTIGATION, AND MONITORING AT TENTATIVE TRACT MAP NO. 26595, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CA	33-000064
RI-06069	DAHDUL, MARIAM and HARRY M. QUINN	2003	ADDEDUM TO ARCHAEOLOGICAL TESTING AND EVALUATION REPORT CA-RIV-1530 AND A PORTION OF CA-RIV-5876, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CA	33-001530, 33-007924

RI-06071	Jay K. Sander, Roger D. Mason, Evelyn N. Chandler, and Cary D. Cotterman	2003	FINAL CULTURAL RESOURCES INVENTORY FOR THE COACHELLA VALLEY MANAGEMENT PLAN, RIVERSIDE COUNTY, CA	33-000894, 33-000898, 33-001329, 33-001333, 33-003212, 33-003213, 33-003214, 33-004100, 33-004284, 33-012124, 33-012125, 33-012126, 33-012127, 33-012128, 33-012137, 33-012138, 33-012139, 33-012140, 33-012141, 33-012142, 33-012208, 33-012209, 33-012210, 33-012211, 33-012212, 33-012213, 33-012214, 33-012215, 33-012216, 33-012217, 33-012218, 33-012219, 33-012234, 33-012235, 33-
RI-06128	AISLIN-KAY, MARNIE	2005	LETTER REPORT: CULTURAL RESOURCE RECORDS SEARCH AND SITE VISIT RESULTS FOR CINGULAR TELECOMMUNICATIONS FACILITY CANDIDATE RS-025-01 (INDIAN WELLS GARDEN STADIUM), 78200 MILES AVENUE, INDIAN WELLS, RIVERSIDE COUNTY, CA	
RI-06314	Bai Tang, Michael Hogan, Casey Tibbet, and John Eddy	2004	Historical/Archaeological Resources Survey Report: Tentative Tract Map No. 32880, The Grove Project, City of Indian Wells, Riverside County, California	
RI-06392	TANG, BAI	2005	LETTER REPORT: HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY, MILES CROSSING PROJECT, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CA	33-000064
RI-06502	HOGAN, MICHAEL, BAI TANG, MARIAM DAHDUL, and LAURA SHAKER	2004	IDENTIFICATION AND EVALUATION OF HISTORIC PROPERTIES: SANTA ROSA AND SAN JACINTO MOUNTAINS TRAILS PLAN, IN THE COACHELLA VALLEY, RIVERSIDE COUNTY, CA	33-000565, 33-004039, 33-012944, 33-012945, 33-012946, 33-012947, 33-012948, 33-012949, 33-013086, 33-013205
RI-06772	BROWN, JOAN C.	1998	AN EXPLORATORY INVESTIGATION OF CA-RIV-3005 AND CA-RIV-5876, LOCATED NEAR INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	33-003005, 33-003008, 33-007924

RI-07467	Jeabette A McKenna	2006	Historic Resources Compliance Report: Highway 111 Corridor Improvements from the Western City Boundary to Deep Canyon Wash, City of Indian Wells, Riverside County, California	
RI-07674	White, Laura S. and Robert S. White	2008	A REVIEW OF PREVIOUS CULTURAL RESOURCE INVESTIGATIONS WITHIN THE INDIAN WELLS GARDEN OF CHAMPIONS TOURNAMENT CENTER AND INDIAN WELLS TOWN CENTER PROJECT SITE, CITY OF INDIAN WELLS, RIVERSIDE COUNTY	
RI-07778	Wayne H. Bonner and Sarah A. Williams	2008	Letter Report: Cultural Resources Records Search and Site Visit Results for AT&T Candidate RS0028-02 (Indian Wells Tennis Garden), 78200 Miles Avenue, Indian Wells, Riverside County, California	
RI-08054	Wayne Bonner	2008	Letter Report: Cultural Resource Records Search and Site Visit Results for T-Mobile US Facility Candidate IE25825A (Oasis HOA Tree), Hovley Avenue and Casbah Way, Palm Desert, Riverside County, California	
RI-08105	Bai "Tom" Tang and Michael Hogan	2006	Summary of Findings, Citywide Historic Resources Survey Update, City of La Quinta, Riverside County, California	
RI-08178	Bruce Love, Bai Tang, Harry Quinn, Mariam Dahdul, and Richard Norwood	2002	Archaeological Testing Report From Kavinish to Indian Wells: 1000 Years of Development at Indian Wells Country Club East Course	
RI-08496	Michaeol Mirro	2010	Letter Report: Cultural Resources Records Search for Shot Points Located on Private Lands for the U.S. Geological Survey (USGS) Salton Seismic Imaging Proje--> Addendum	
RI-09103	Brian K. Glenn	2011	Historic Properties Identification Survey Within The Proposed Identification Survey Within The Proposed WhiteWater River Channel Lining Ape, Adjacent to APN 633-410-034 Indian Wells, Riverside County, California	
RI-09170	Bai "Tom" Tang and Daniel Ballester	2014	Historical/Archaeological Resources Survey of 17 Acres in the Northwestern Portion of 17 Acres in the Northwestern Portion of APN 604-640-001, City of Indian Wells, Riverside County, California	
RI-09245	Brian K. Glenn	2006	CULTURAL RESOURCES INVENTORY WITHIN THE PROPOSED MID-VALLEY PIPELINE PROJECT AREA RIVERSIDE COUNTY, CALIFORNIA	
RI-09302	Curt Duke	2002	Cultural Resource Assessment: AT&T Wireless Services Facility No. D470C Riverside County, California	
RI-09375	Dennis McDougall, Joan Georde, and Vanessa Mirro	2014	Phase 1 Cultural Resources Assessment of 21.6 acres for the Vintage Club Living Desert Creek Stabilization Project, City of Indian Wells, Riverside County, California	
RI-09768	Bruce Love and Bai "Tom" Tang	2000	Cultural Resource Element City of La Quinta General Plan	
RI-10054	FRED E BUDINGER JR	2002	LETTER REPORT: PROPOSED WIRELESS DEVICE MONOPOLE AND EQUIPMENT CABINET; INDIAN WELLS SITE	
RI-10231	Haas, H. and Vargas, B.	2017	Palm Desert Groundwater Replenishment Project.	
RI-10242	TIFFANY CLARK and JOAN GEORGE	2017	PHASE I CULTURAL RESOURCE ASSESSMENT OF ASSESSORS PARCEL NUMBER 633-300-007, CITY OF INDIAN WELLS, RIVERSIDE COUNTY, CALIFORNIA	
RI-10269	Bonnie Bruce, Sarah A. Williams, and Carrie D. Wills	2017	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CSL05000 (Vintage Clubhouse), 75001 Vintage Drive, Indian Wells, Riverside County, California, CASPR No. 3551A097E4	

RI-10270	Bonnie Bruce, Sarah A. Williams, and Carrie D. Wills	2017	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CSL05000 (Vintage Water Tank), 17030 Portola Avenue, Indian Wells CA 92210 Riverside County, California, CASPR No. 3551A097E4	
RI-10342	Bai "Tom" Tang and Deirdre Encarnacion	2010	Cultural Resources Technical Report City of La Quinta General Plan (2010 Update)	
RI-10374	Joan George and Venessa Mirro	2013	Phase 1 Cultural Resources Assessment for the Coachella Valley Water District's Whitewater River- Coachella Valley Stormwater Channel Project, Riverside County, California	33-000064, 33-001178, 33-001530, 33-001770, 33-002200, 33-003005, 33-003683, 33-006045, 33-007924, 33-008741, 33-009018, 33-009019, 33-009021, 33-009022, 33-009461, 33-009498, 33-016786, 33-017259
RI-10406	Michael Mirro	2012	Archaeological Sensitivity Model for the Whitewater River Stormwater Channel, Riverside County, California	
RI-10682	Robert S. White	2009	Pedestrian Cultural Resources Survey of the DOE Grant Solar Panel Array-Indian Wells, Riverside County, California	
RI-10820	L. Porras and B. Vargas	2018	Phase I Cultural Study for the Coachella Valley Water District Non-Potable Connections Project No. 17-04981.	

Appendix E

Noise Impact Study
MD Acoustics, LLC

General Plan Update
Noise Impact Study
City of Indian Wells, CA

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This noise assessment was prepared to evaluate the potential noise impacts for the Project Area and to recommend noise mitigation measures, if necessary, to minimize the potential noise impacts. The assessment was conducted and compared to the noise standards set forth by the Federal, State, and Local agencies. Consistent with the City's Noise Guidelines, the Project must demonstrate compliance to the applicable noise criterion as outlined within the City's existing Noise Element and proposed Public Safety Element and Municipal Code.

The following is provided in this report:

- A description of the Project Area and the proposed Project
- Information regarding the fundamentals of noise and vibration
- A description of the local noise and vibration guidelines and standards
- An analysis of traffic noise impacts to and from the project site
- An analysis of stationary noise impacts to and from the project site
- An analysis of construction noise impacts
- An analysis of ground-borne vibration impacts to and from the project site
- Suggested mitigation measures to reduce impacts

1.2 Site Location and Project Area

The City of Indian Wells (City) occupies an area of roughly 15 square miles. Indian Wells is located in the Coachella Valley area of Riverside County, approximately 14 miles southeast of Palm Springs. Indian Wells is bounded by the City of Palm Desert to the north and west, by the City of La Quinta to the east, and by unincorporated areas of Riverside County to the north and south. Regional access to the City is provided by Interstate 10, a major east-west highway which provides access to Indian Wells and the Inland Empire region, which encompasses the cities in Riverside County, including those in the Coachella Valley, and San Bernardino County. State Route 74 provides access from the Coachella Valley and the San Diego metropolitan area via State Route 371 and 79.

1.3 Proposed Project Description

The City of Indian Wells is proposing a comprehensive General Plan Update (i.e., the "project"). New policies are proposed that emphasize maintaining its tranquil and luxurious resort environment, promoting fiscal resiliency, and creating a sustainable and resident future for current and future residents. The General Plan Update (GPU) addresses land use, mobility, open space, conservation, safety, noise, and economic development. The GPU will be organized into six elements: Land Use, Mobility, Resource Management, Public Safety, Economic Development, and Housing. The City's Housing Element has been updated and adopted by the City Council in 2022.

The General Plan Update includes an update to the City's Land Use Map. It proposes to change the current land use designation of two locations, as indicated in Table 1 below.

Table 1: Changes to the General Plan Land Use

Location	APN	Existing Use	Current Land Use Designation	Proposed Land Use Designation (GPU)
1	633-150-077 & 633-150-071	Golf Course	Golf and Recreation	Resort Commercial
2	633-310-035 & 633-410-051	Vacant	Community Commercial	Resort Commercial

1.4 General Plan Update Buildout Assumptions

Buildout of the proposed General Plan Update would result in 5,455 single family units and 816 multifamily units, for a total of 6,271 residential units (consistent with the current General Plan); 5,159,667 square feet of nonresidential space (27,563 more square feet than the current General Plan); and 6,310 jobs (93 more jobs than the current General Plan).

Exhibit A

Regional Location Map

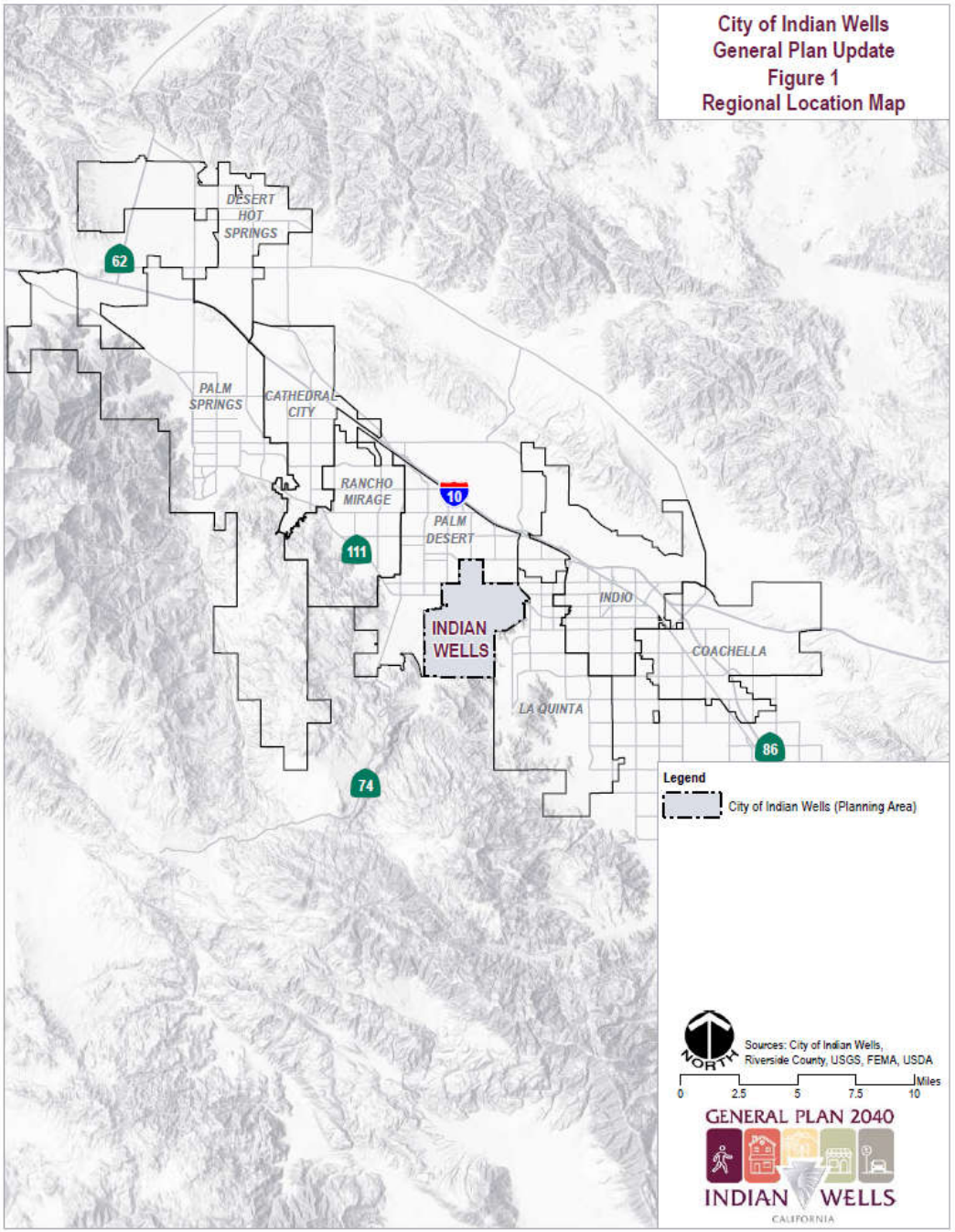


Exhibit B

Planning Area

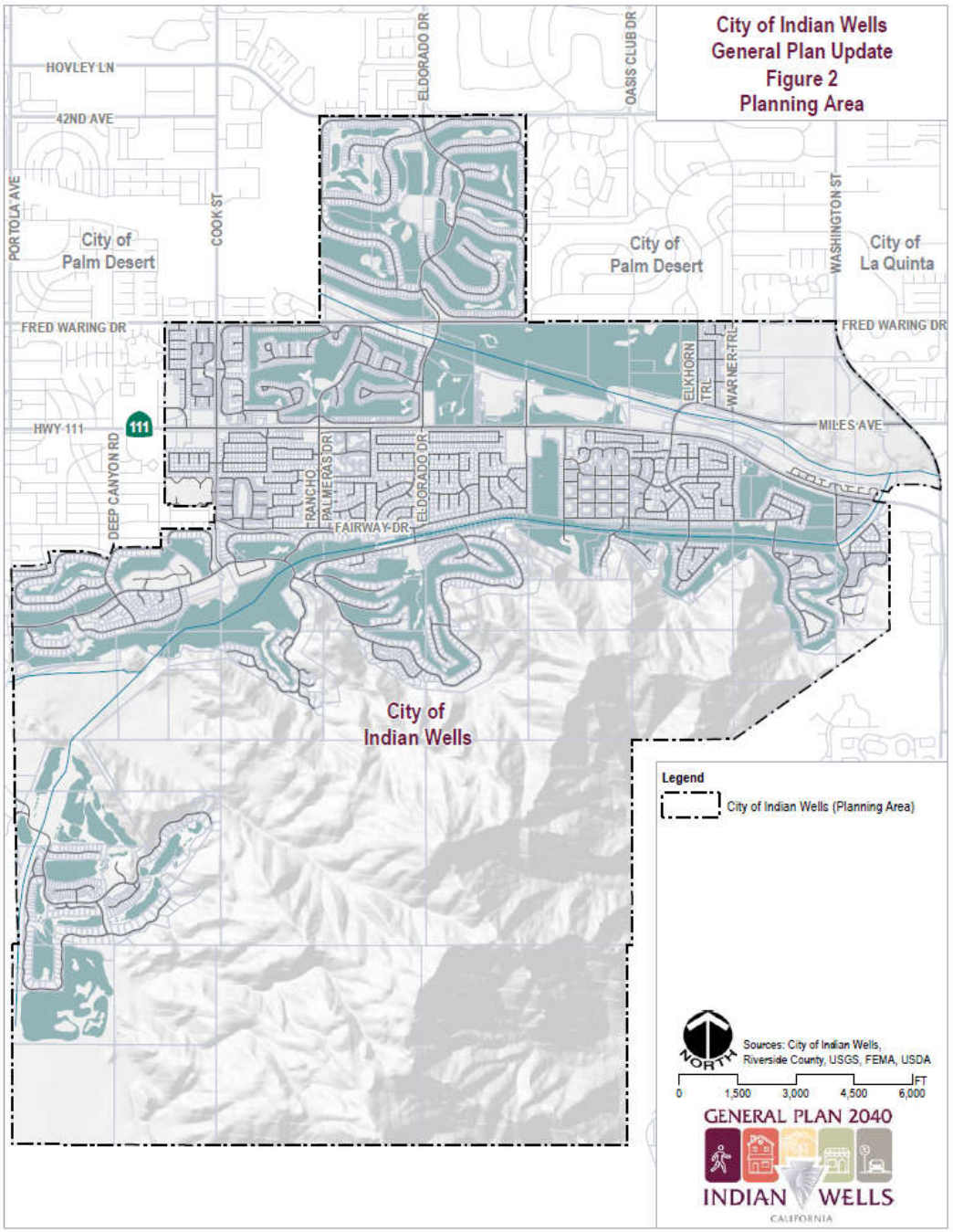


Exhibit C

Current General Plan Land Use

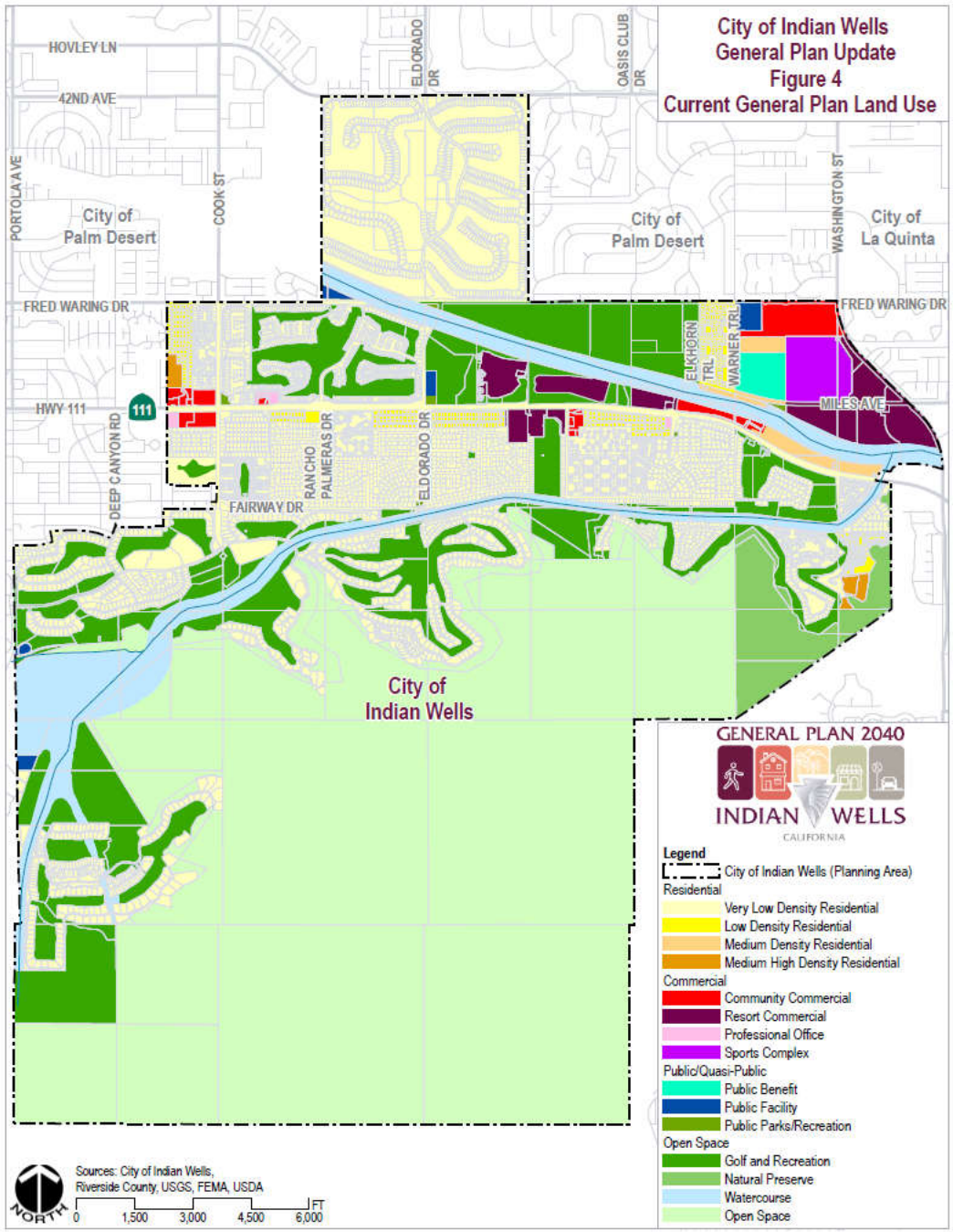
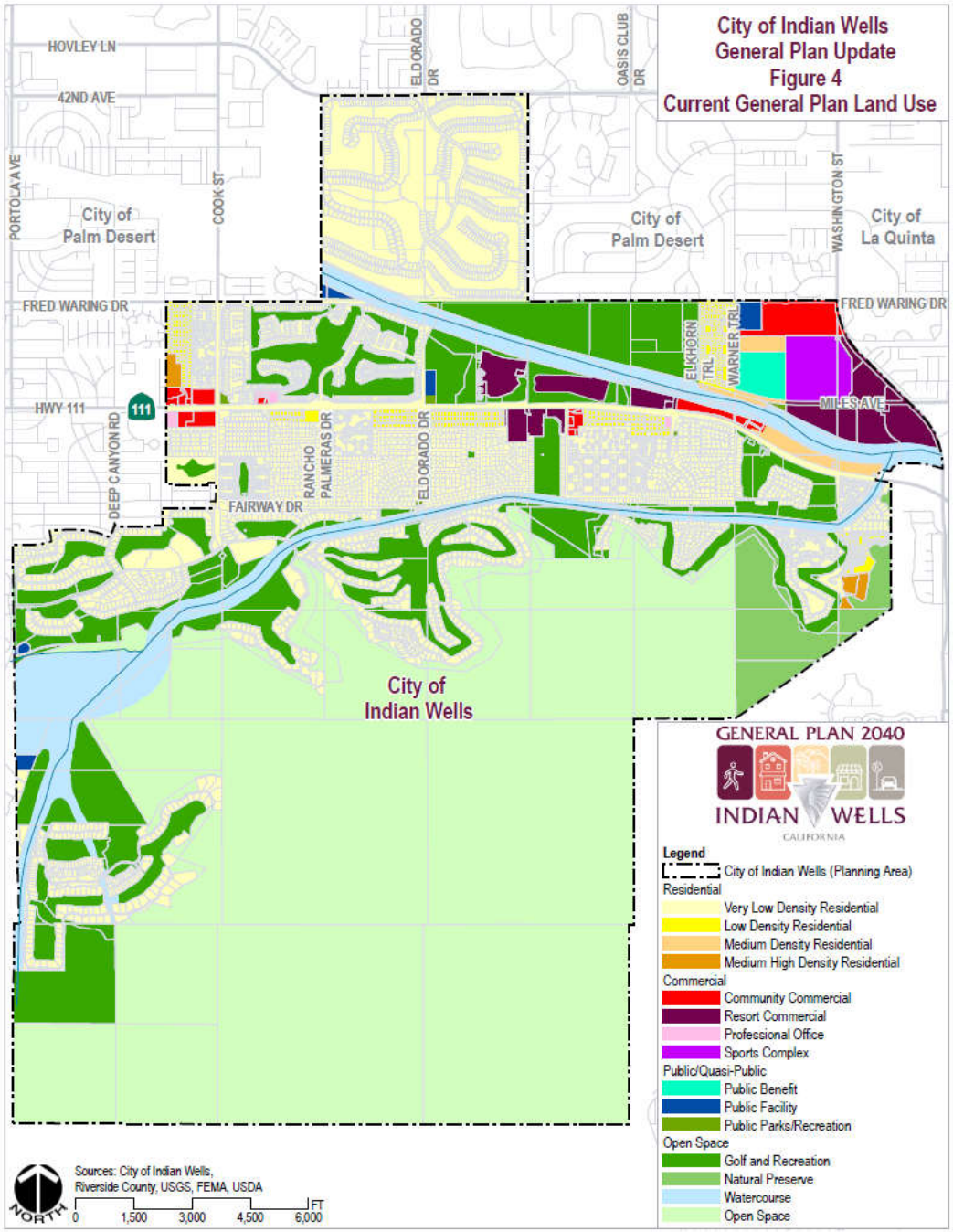


Exhibit D

Proposed Plan Land Use



2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used within the report.

2.1 Sound, Noise, and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting at 20 Hz to the high pitch of 20,000 Hz.

2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square meter ($\mu N/m^2$), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels abbreviated dB.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds of equal SPL are combined, they will produce an SPL 3 dB greater than the single SPL. In other words, sound energy that is doubled produces a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound. When combining sound levels, estimates shown in Table 2 may be utilized.

Table 2: Decibel Addition

When Two Decibel Values Differ by:	Add This Amount to Higher Value	Example
0 or 1 dB	3 dB	70+69=73 dB
2 or 3 dB	2 dB	74+71=76 dB
4 to 9 dB	1 dB	66+60=67 dB
10 dB or more	0 dB	65+55=65 dB
Source: Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol. Caltrans, 2013		

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, A-scale weighting is typically used and is reported in terms of the A-weighted decibel (dBA). The A-scale was designed to account for the frequency-dependent sensitivity of the human ear. Typical A-weighted noise levels are shown in Table 3.

Table 3: Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor
	110	Rock Band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large Business Office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcasting/recording studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol. Caltrans, 2013.

In general, the human ear can barely perceive a change in the noise level of 3 dB. As shown in Table 4, a change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

Table 4: Perceived Changes in Noise Levels

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud
Source: Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol. Caltrans, 2013.	

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, and others are random. Some noise levels are constant, while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after the addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after the addition of ten (10) decibels to sound levels in the night between 10:00 PM and 7:00 AM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dBA: A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the California Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking, or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms, and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly, L50, L90, L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dBA level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

2.7 Tonal Sounds

A pure tone sound is a sound produced at or near a single frequency. Laboratory tests have shown that humans are more perceptible to changes in sound levels of a pure tone. For a noise source to contain a "pure tone," there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to "stand out" against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contagious one-third octave bands by 5 dB for center frequencies of 500 Hertz (Hz) and above; by 8 dB for center frequencies between 160 and 400 Hz; and by 15 dB for center frequencies of 125 Hz or less.

2.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The

sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

Research has demonstrated that atmospheric conditions can have a significant effect on noise levels when noise receivers are located 200 feet or more from a noise source. Wind, temperature, air humidity, and turbulence can further impact have far sound can travel.

2.9 Ground Absorption

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the receiver. Soft site conditions such as grass, soft dirt, or landscaping attenuate noise at a rate of 1.5 dB per doubling of distance. When added to the geometric spreading, the excess ground attenuation results in an overall noise attenuation of 4.5 dB per doubling of distance for a line source and 7.5 dB per doubling of distance for a point source.

2.10 Sound Attenuation

Noise-related land use issues are typically composed of three basic elements: (1) the noise source, (2) a transmission path, and (3) a receiver.

The appropriate acoustical treatment for a given project should consider the nature of the noise source and the sensitivity of the receiver. When the potential for a noise-related problem is present, either avoidance of the noise-related problem or noise control techniques should be selected to provide an acceptable noise environment for the receiver while remaining consistent with local aesthetic standards and practical structural and economic limits. Fundamental noise control options are described below.

2.10.1 Noise Barriers

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. To achieve that reduction, the barrier must be high enough and long enough to block the line-of-sight of the vehicles on the road. A noise barrier can still achieve a 5 dBA noise level reduction when it is tall enough to barely allow a line-of-sight of the vehicles. A noise barrier is most effective when placed close to the noise source or receiver. When the noise barrier is an earthen berm instead of a wall, the noise attenuation can be increased by another 3 dBA.

2.10.2 Setbacks

Noise exposure may be reduced by increasing the setback distance between the noise source and the receiving use. Setback areas can take the form of open space, frontage roads, recreational areas, and storage yards. The available noise attenuation from this technique is limited by the characteristics of the noise source but generally ranges between 4 and 6 dBA.

2.10.3 Site Design

Buildings can be placed on a property to shield other structures or areas affected by noise and to prevent an increase in noise levels caused by reflections. The use of one building to shield another can significantly reduce overall noise control costs, particularly if the shielding structure is insensitive to noise. An example would be placing a detached garage nearest the noise source to shield the house or backyard. Site design should guard against creating reflecting surfaces that may increase onsite noise levels. For example, two buildings placed at an angle facing a noise source may cause noise levels within that angle to increase by up to 3 dBA. The open end of U-shaped buildings should point away from noise sources for the same reason. Landscaping walls or noise barriers located within a development may inadvertently reflect noise to a noise-sensitive area unless carefully located.

2.10.4 Building Facades

When interior noise levels are of concern in a noisy environment, noise reduction may be obtained through the acoustical design of building facades. Standard construction practices provide a noise reduction of 10–15 dBA for building facades with open windows and a noise reduction of approximately 25 dBA when windows are closed (Table 5). An exterior-to-interior noise reduction of 25 dBA can be obtained by requiring that building design include adequate ventilation systems, which would allow windows facing a noise source to remain closed, even during periods of excessively warm weather.

Where greater noise reduction is required, acoustical treatment of the building facade may be necessary. Reducing relative window area is the most effective control technique, followed by providing acoustical glazing (e.g., thicker glass or increased air space between panes) within frames with low air infiltration rates, using fixed (i.e., non-movable) acoustical glazing, or eliminating windows. Noise transmitted through walls can be reduced by increasing wall mass (e.g., using stucco or brick in lieu of wood siding), or isolating wall members by using double or staggered stud walls, while noise transmitted through doorways can be lessened by reducing door area, using solid-core doors, or sealing door perimeters with suitable gaskets. Noise-reducing roof treatments include using plywood sheathing under roofing materials.

Table 5: Noise Reduction Afforded by Common Building Construction

Construction Type	Typical Occupancy	General Description	Range of Noise Reduction (dB)[1]
1	Residential, Commercial, Schools	Wood frame, stucco, or wood sheathing exterior. Interior drywall or plaster. Sliding glass windows, with windows partially open.	15-20
2	Same as 1 above	Same as 1 above, but with windows closed.	25-30
3	Commercial, Schools	Same as 1 above, but with fixed 0.25-inch plate glass windows.	30-35
4	Commercial, Industrial	Steel or concrete frame, curtain wall, or masonry exterior wall. Fixed 0.25-inch plate glass windows.	35-40

Source: California Airport Land Use Planning Handbook, 2002.

2.10.5 Landscaping

While the use of trees and other vegetation is often thought to provide significant noise attenuation, approximately 100 feet of dense foliage – with no visual path extending through the foliage – is required to achieve a 5 dBA attenuation of traffic noise. Thus, the use of vegetation as a noise barrier is not considered a practical method of noise control unless large tracts of dense foliage are part of the existing landscape.

Vegetation can be used, however, to acoustically "soften" intervening ground between a noise source and a receiver, increasing ground absorption of sound, and thus, increasing the attenuation of sound with distance. Planting trees and shrubs also offers aesthetic and psychological value, and it may reduce adverse public reaction to a noise source by removing the source from view, even though noise levels would be largely unaffected.

3.0 Ground-Borne Vibration Fundamentals

3.1 Vibration Descriptors

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels, damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors, where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and mainly exists indoors since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves. Several different methods are used to quantify vibration amplitude. Typical human reaction and effect on buildings due to ground-borne vibration is shown in Table 6. Exhibit E illustrates common vibration sources and the human and structural responses to ground-borne vibration.

PPV – Known as the peak particle velocity (PPV) which is the maximum instantaneous peak in vibration velocity, typically given in inches per second.

RMS – Known as root mean squared (RMS) can be used to denote vibration amplitude

VdB – A commonly used abbreviation to describe the vibration level (VdB) for a vibration source.

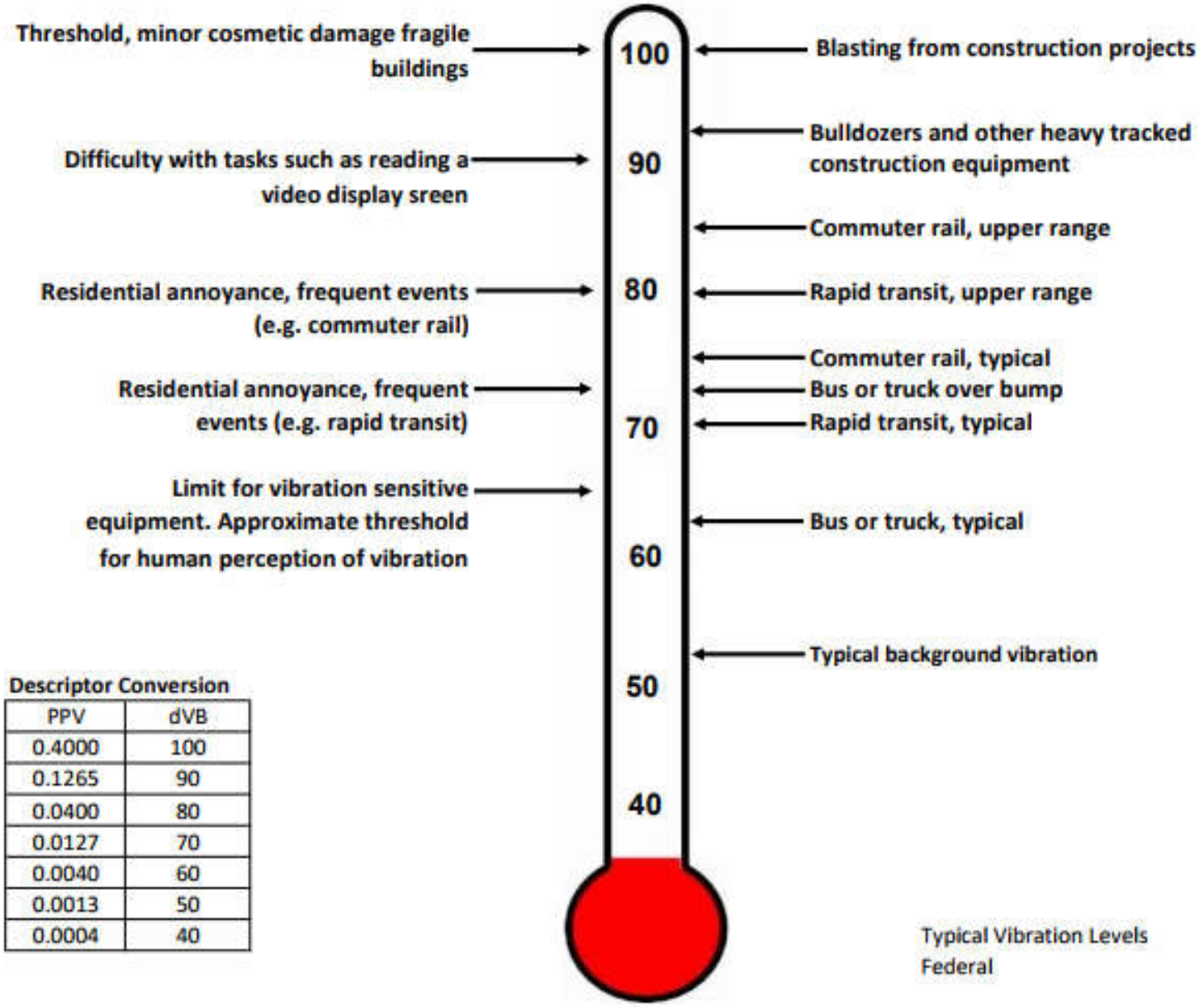
Table 6: Typical Human Reaction and Effect on Buildings Due to Ground-Borne Vibration

Vibration Level Peak Particle Velocity (PPV)	Human Reaction	Effect on Buildings
0.006–0.019 in/sec	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08 in/sec	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10 in/sec	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e., not structural) damage to normal buildings
0.20 in/sec	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6 in/sec	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: Caltrans Transportation and Construction Vibration Guidance Manual, 2020.

Exhibit E

Typical Ground-Borne Vibration Levels



Descriptor Conversion

PPV	dVB
0.4000	100
0.1265	90
0.0400	80
0.0127	70
0.0040	60
0.0013	50
0.0004	40

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Outdoor sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations and although the Project is not subject to these regulations, it serves as useful tools to evaluate vibration impacts. (California Department of Transportation, 2020).

3.3 Vibration Propagation

There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse, or side-to-side and perpendicular to the direction of propagation. As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. This drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 Regulatory Setting

The proposed Project is located in the City of Indian Wells, and noise regulations are addressed through the efforts of various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

4.1.1 Noise Control Act of 1972

The Federal Office of Noise Abatement and Control (ONAC) was originally tasked with implementing the Noise Control Act. However, it was eventually eliminated leaving other federal agencies and committees to develop noise policies and programs. Some examples of these agencies are as follows:

- The Department of Transportation (DOT) assumed a significant role in noise control through its various agencies.
- The Federal Aviation Agency (FAA) regulates noise from aircraft and airports.
- The Federal Highway Administration (FHWA) regulates noise from the interstate highway system.
- The Occupational Safety and Health Administration (OSHA) is responsible for the prohibition of excessive noise exposure to workers.

The federal government advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being constructed adjacent to a highway or that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation source, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement Codes and land use planning.

The intent of a General Plan Noise Element or Section is to set goals to limit and reduce the effects of noise intrusion and to set acceptable noise levels for varying types of land uses. To this end, the City has the authority to set land use noise standards and restrict private activities that generate excessive or intrusive noise. However, it should be recognized that the City does not have the authority to regulate all sources of noise within the City and various other agencies may supersede City authority. The following is a summary of some federal agency requirements that apply to noise within the Project Area.

4.1.2 Federal Highway Administration

Federal Highway Administration State routes and freeways that run through the City are subject to Federal funding and, as such, are under the purview of the Federal Highway Administration (FHWA). The FHWA has developed noise standards that are typically used for Federally funded roadway projects or projects that require either Federal or Caltrans review. These noise standards are based on Leq and L10 values and are included in Table 7, FHWA Design Noise Levels.

Table 7: FHWA Design Noise Levels

Activity Category	Description of Category	Design Noise Levels[1]	
		Leq (dBA)	L10 (dBA)
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Examples include natural parks or wildlife habitats.	57 (exterior)	60 (exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (exterior)	70 (exterior)
C	Developed lands, properties, or activities not included in Categories A or B, above.	72 (exterior)	75 (exterior)
D	Undeveloped lands.		
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (interior)	55 (interior)

Source: FHWA Noise Standard. 23 Code of Federal Regulations 772.
Notes: Either Leq or L10 (but not both) design noise levels may be used on a project.

U.S. Department of Housing and Urban Development

The Department of Housing and Urban Development (HUD) issues formal requirements related specifically to standards for exterior noise levels along with policies for approving HUD-supported or assisted housing projects in high noise areas. In general, these requirements established three zones. These include:

- 65 dBA Ldn or less - an acceptable zone where all projects could be approved,
- Exceeding 65 dBA Ldn but not exceeding 75 dBA Ldn - a normally unacceptable zone where mitigation measures would be required, and each Project would have to be individually evaluated for approval or denial. These measures must provide 5 dBA of attenuation above the attenuation provided by standard construction required in a 65 to 70 dBA Ldn area and 10 dBA of attenuation in a 70 to 75 dBA Ldn area, and
- Exceeding 75 dBA Ldn - an unacceptable zone in which projects would not, as a rule, be approved.

4.1.3 The Federal Interagency Committee on Noise

The Federal Interagency Committee on Noise (FICON) developed guidance for the assessment of airport-generated increases in noise levels that consider the ambient noise level. The FICON recommendations are based on studies of the percentage of persons highly annoyed by aircraft noise. A readily perceptible 5 dBA or greater project-related noise level increase is considered a significant impact when the noise criteria for a given land use is exceeded. In areas where the existing noise levels range from 60 to 65 dBA

Ldn, a 3 dBA barely perceptible noise level increase is considered significant. When the existing noise levels already exceed 65 dBA Ldn, any increase in community noise louder than 1.5 dBA or greater is considered a significant impact since it likely contributes to an existing noise exposure exceedance.

4.2 State Regulations

4.2.1 California Department of Health Services

The California Department of Health Services (DHS) Office of Noise Control studied the correlation between noise levels and their effects on various land uses. As a result, the DHS established four categories for judging the severity of noise intrusion on specified land uses. These categories are presented in the State Land Use Compatibility for Community Noise Exposure table (California Office of Noise Control, 2017).

4.2.2 The California Building Code

Section 1206.4 of the 2022 California Building Code (Cal. Code Regs., Title 24, Part 2), Chapter 12 (Interior Environment), establishes an interior noise criterion of 45 dBA CNEL in any habitable room. Per California Building Code, Chapter 2 (Definitions), a habitable space is A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces. This section applies to dwelling and sleeping units.

4.2.3 California Green Building Standards Code

California Green Building Standards Code (2022), Chapter 5 (Non-residential Mandatory Measures) Section 5.507.4 (Acoustical Control), applies to all proposed buildings that people may occupy but are not residential dwelling units, with the exception of factories, stadiums, storage, enclosed parking structures, and utility buildings.

Buildings must comply with Section 5.507.4.1 or Section 5.507.4.2. Section 5.507.4.1 requires wall and roof-ceiling assemblies exposed to the noise source making up the building, or addition envelope or altered envelope, shall meet a composite Sound Transmission Class (STC) rating of at least 50 or a composite Outdoor to Indoor Transmission Class (OITC) rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 when within the 65 CNEL noise contour of an airport, freeway, expressway, railroad, industrial source, or fixed-guideway source. If contours are not available, buildings exposed to 65 dB Leq(h) must meet a composite STC rating of at least 45 or OITC of 35 with exterior windows of at least STC 40 or OITC 30. Section 5.507.4.2 requires that the interior noise attributable to exterior sources must not exceed 50 dBA Leq(h) during any hour of operation. Section 5.507.4.3 requires that assemblies separating tenant spaces from tenant spaces or public places must have an STC of at least 40.

4.3 City of Indian Wells

Existing planning policies and noise regulations applicable to noise within the City of Indian Wells are presented in the Noise Element of the City of Indian Wells General Plan 1996 and within the City of Indian Wells Municipal Code. Applicable goals, policies, and regulations are presented below.

4.3.1 City of Indian Wells General Plan 1996

General Plan Goals, Policies and Actions

The 1996 General Plan Noise Element includes the following goals, policies and implementation programs that are intended to avoid or reduce noise impacts related to transportation, stationary, and construction related noise sources.

Goal IVB1: Minimize the impact of traffic-generated noise on residential and other noise sensitive land uses.

Traffic-Generated Noise Policies

IVB1.1: All new or expansion of existing residential development or other noise-sensitive land uses in areas exceeding 65 dB CNEL shall require that mitigation measures be incorporated which reduce noise levels to 65 dB CNEL or less in outdoor activity areas and 45 dB CNEL or less in interior living spaces. An acoustical study shall be required as part of residential development and transportation corridor projects which sets forth mitigating measures to attain these standards.

IVB1.2: Implement provisions of the Highway 111 Specific Plan which establishes special noise attenuation standards to maintain the corridor's quiet residential character. A minimum 50-foot landscaped parkway in residential areas shall be required along both sides of the corridor, which will be augmented by walls, berms, and other structures which will attenuate ambient noise levels.

IVB1.3: Truck traffic shall be limited to specific routes and designated hours of travel, as defined by the City Planning and Engineering Departments.

IVB1.4: The City shall coordinate with Caltrans to reduce the speed limit on State Highway 111, in concert with synchronized intersections, to reduce noise levels along the corridor.

IVB1.5: Discourage through traffic in residential neighborhoods by use of cul-de-sacs.

IVB1.6: Encourage employers to participate in vanpools and other transportation demand management programs to reduce traffic and noise impacts in the City.

IVB1.7: Encourage the development of alternative travel options including bus transit, and bicycle, golf can, and pedestrian paths to minimize single-occupancy vehicle trips.

Goal IVB2: Minimize the impacts of noise from commercial development and other noise-generating activities.

Other Noise-Generating Activities Policies

IVB2.1: Require mitigation at the property line if new or an expansion of existing noise-generating land uses results in noise levels that exceed 65 dB(A) CNEL in areas containing residential or other noise-sensitive land uses.

IVB2.2: Require that automobile and truck access to commercial properties located adjacent to residential parcels be located at the maximum practical distance from the residential parcel.

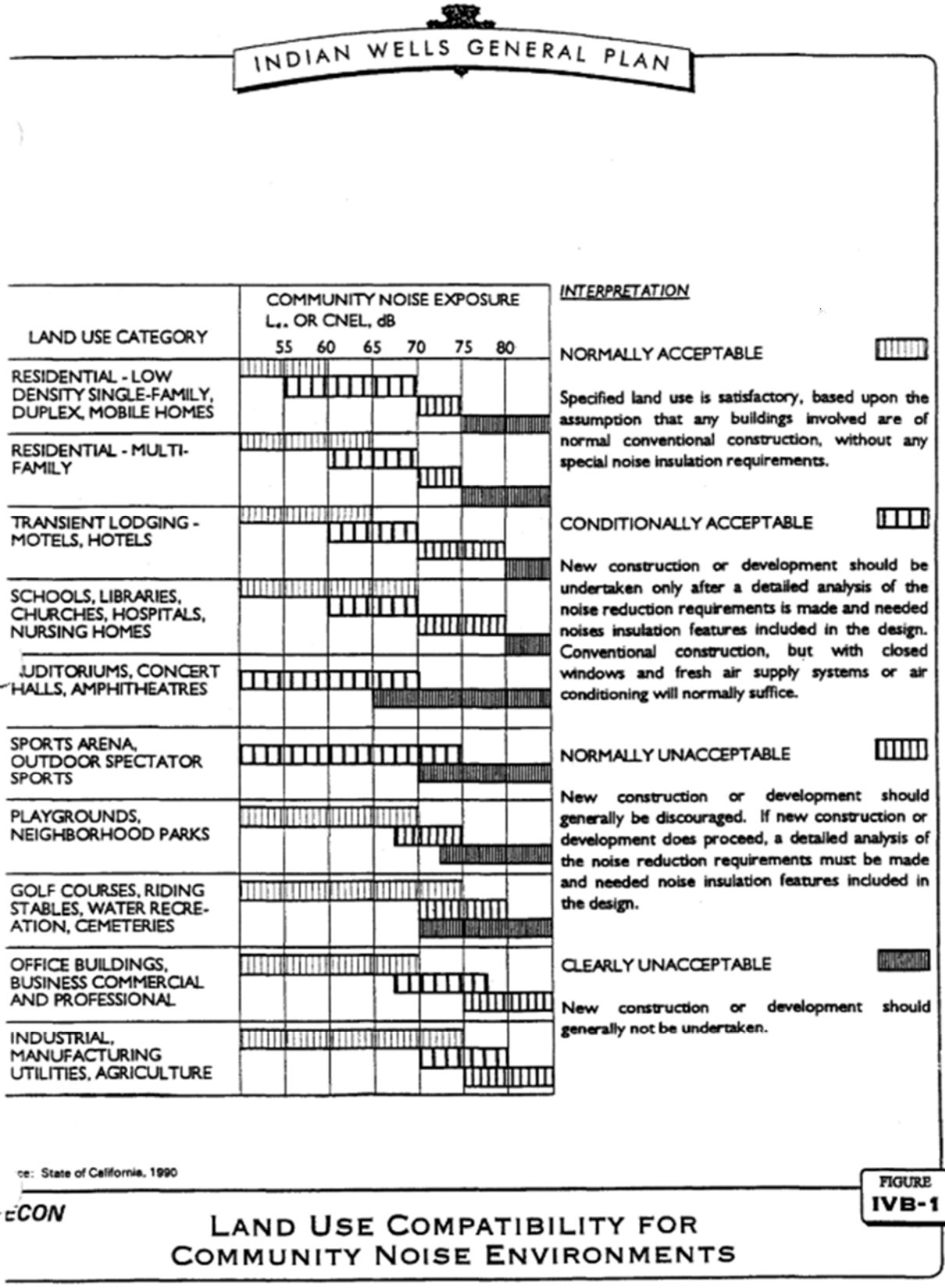
IVB2.3: Enforce the City's noise ordinance which specifies restrictions on construction noise and other short-term noise events (i.e. concerts, sporting events) and mitigation measures for development in noise-sensitive areas.

Noise/Land Use Compatibility

Exhibit F, Noise and Land Use Compatibility, presents a land use compatibility chart for community noise presented in the Indian Wells 1996 General Plan Noise Element. The table identifies "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" exterior noise levels for various land uses. A "conditionally acceptable" designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a "normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements. This land use compatibility chart is based on the 24-hour descriptor CNEL.

<Exhibit F, next page>

Exhibit F: Existing Noise and Land Use Compatibility



4.3.2 City of Indian Wells General Plan 2040

Noise levels within a community can affect the quality of life experienced by people living and working in the area as high noise levels can create stress and irritation. Noise is closely related to the Land Use, Housing, and Mobility Elements. The existing and predicted noise environment influences the general distribution, location, and intensity of future land use. When proper planning occurs, noise generating uses, such as major streets and highways, can be located to minimize noise impact upon residential and other sensitive land uses. The following policies and actions provide guidelines to achieve harmonious land use design and regulate noise from vehicles and other noise-generating sources.

The following Goal, Policies, and Actions are proposed for the 2040 City of Indian Wells General Plan.

Goal PS-6: The impact of noise-generating activities on residential and other sensitive land uses is minimized.

PS-6 Policies

PS-6.1 **Noise Exposure**. Consider the noise compatibility of existing and future development when making land use planning decisions. Require development and infrastructure projects to be consistent with the noise standards in this element and the Indian Wells Municipal Code to facilitate acceptable noise exposure levels for existing and future development.

PS-6.2 **Noise Mitigation**. Require new developments or the expansion of existing developments to mitigate excessive noise through best practices, including building location and orientation, building design features, placement of noise-generating equipment away from sensitive receptors, shielding of noise-generating equipment, placement of noise-tolerant features between noise sources and sensitive receptors, and use of noise-minimizing materials, to reduce noise levels at sensitive uses, including residential uses, to 65 dB CNEL or less in outdoor activity areas and 45 dB CNEL or less in interior living spaces.

PS-6.3 **Acoustical Studies**. Require acoustical studies for new discretionary developments and transportation improvements that have the potential to affect existing noise-sensitive uses such as schools, hospitals, libraries, care facilities, and residential areas; and for projects that would introduce new noise-sensitive uses into an area where existing noise levels may exceed the thresholds identified in this element. For projects that are required to prepare an acoustical study, the study shall include mitigation measures to attain the noise standards in this element and the City's Noise Ordinance.

PS-6.4 **Roadway Noise**. Encourage the development of alternative travel options including bus transit, and bicycle, golf cart, and pedestrian paths to minimize single-occupancy vehicle trips and the implementation of noise sensitivity measures in the public realm, including traffic-calming road design, lateral separation, natural buffers, and setback to decrease excessive motor vehicle noise.

PS-6.5 **Commercial Noise**. Require the use of noise attenuation measures, including screening and buffering techniques, for all new or expansion of existing commercial developments expected

to produce excess noise; in existing cases where the City's noise standards are exceeded, work with Code Enforcement to require compliance.

PS-6.6 **Short-Term Noise**. Require construction activities and other short-term noise events (i.e., concerts, sporting events) to reduce noise impacts on adjacent uses and comply with the City's Noise Ordinance.

PS-6.7 **Vibration Studies.** Require vibration impact studies for new discretionary development and transportation improvements whose construction utilizes pile drivers within 200 feet of existing buildings or vibratory rollers within 50 feet of existing buildings.

PS-6.8 **California Building Code.** Adhere to the latest standards related to noise in the most current edition of the California Building Code to avoid or minimize noise pollution in the community.

PS-6.9 **Interjurisdictional and Multiagency Coordination**. Coordinate with neighboring jurisdictions and transportation providers such as Caltrans to minimize noise conflicts between land uses along the City's boundaries.

PS-6 Actions

PS-6a Review new development and transportation projects for compliance with the noise requirements established in this General Plan, including the standards established in the Indian Wells Municipal Code. Where necessary, require new development to mitigate excessive noise through best practices, including building location and orientation, building design features, placement of noise-generating equipment away from sensitive receptors, shielding of noise-generating equipment, placement of noise-tolerant features between noise sources and sensitive receptors, and use of noise-minimizing materials such as rubberized asphalt.

PS-6b Require acoustical studies for all new discretionary projects, including those related to development and transportation, which have the potential to generate noise impacts which exceed the standards identified in this element. The studies shall include representative noise measurements, estimates of existing and projected noise levels, and mitigation measures necessary to ensure compliance with this element and the City's Noise Ordinance.

PS-6c Actively enforce the standards identified in the City's Noise Ordinance in order to reduce impacts to the extent feasible. Update and amend the Noise Ordinance as appropriate.

PS-6d Coordinate with Caltrans to reduce the speed limit on State Highway 111, in concert with synchronized intersections, to reduce noise levels along the corridor.

PS-6e Implement provisions of the Highway 111 Specific Plan which establishes special noise attenuation standards to maintain the corridor's quiet residential character. A minimum 50-foot landscaped parkway in residential areas shall be required along both sides of the corridor, which will be augmented by walls, berms, and other structures which will attenuate ambient noise levels.

PS-6f Prohibit residential development in areas of greater than 65 Community Noise Equivalent Level (CNEL) unless effective mitigation measures can be incorporated into the project design to reduce noise levels to 65 CNEL in outdoor activity areas and 45 CNEL in indoor areas.

PS-6g Truck traffic shall be limited to specific routes and designated hours of travel, as defined by the City Planning and Engineering Departments.

PS-6h Use cul-de-sacs in new residential developments to discourage through traffic in residential neighborhoods.

PS-6i Review the locations of proposed projects with the potential to generate stationary noise in relation to sensitive receptors through the discretionary project review process. Require that automobile and truck access to commercial properties be located adjacent to residential parcels be located at the maximum practical distance from the residential parcel.

PS-6j Require vibration impact studies for all new discretionary projects, including those related to development and transportation, whose construction utilizes pile drivers within 200 feet of existing buildings or vibratory rollers within 50 feet of existing buildings. The studies shall include a detailed mitigation plan to avoid any potential significant impacts to existing structures due to groundborne vibrations, based on the California Department of Transportation's Construction Vibration Guidance Manual.

PS-6k Monitor changes in the California Building Code and other federal and State laws and regulations related to noise and incorporate necessary changes into the Municipal Code and building codes as required.

4.3.2 City of Indian Wells Municipal Code

The Noise Ordinance of the Municipal Code is designed to protect people from non-transportation noise sources such as construction activity; commercial, industrial, and agricultural operations; machinery and pumps; and air conditioners. Enforcement of the ordinance ensures that adjacent properties are not exposed to excessive noise from stationary sources. Enforcing the ordinance includes requiring proposed development projects to show compliance with the ordinance, including operating in accordance with noise levels and hours of operations limits placed on the project site. The City also requires construction activity to comply with established work schedule limits. The ordinance is reviewed periodically for adequacy and amended as needed to address community needs and development patterns.

The City of Indian Wells Noise Ordinance consists of Chapter 9.06 of the Indian Wells Municipal Code. The zoning code, Title 21, also contains specific noise limits relating to specific uses. The applicable noise ordinances to this analysis are presented below.

SEC. 9.06.040 Noise standards.

(a) Exterior Noise Standards.

(1) Standards for Residential Properties. The following exterior noise standards, unless otherwise specifically indicated in this Chapter for all residential properties shall be:

Table 8: Exterior Residential Noise Standards

55 dBA	7:01 a.m. to 10 p.m.
50 dBA	10:01 p.m. to 7 a.m.

(2) Noise Level Categories. It is unlawful for any person at any location within the City to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, that exceeds, when measured on any other residential property the exterior residential noise standard by:

Decibels		Cumulative Period
(i)	+3	30 minutes/hour
(ii)	+5	15 minutes/hour
(iii)	+10	5 minutes/hour
(iv)	+15	1 minute/hour
(v)	+20	Not to be exceeded

(3) Ambient Noise Level. If the ambient noise level exceeds that permitted by the noise limit categories specified in subsections (a)(2)(i) and (a)(2)(ii) of this Section, the allowed noise limit shall be increased in five (5) dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the noise level category set forth in subsection (a)(2)(v), the maximum ambient noise level shall be the noise limit set forth in subsection (a)(2)(v) of this Section.

(a) Interior Noise Standards.

(1) Standards for Residential Properties. It is unlawful for any person to create any noise from inside his or her unit that causes the noise level, when measured in a neighboring unit during the period 10:00 p.m. to 7:00 a.m., to exceed:

Table 9: Interior Residential Noise Standards

Decibels		Cumulative Period
(i)	45 dBA	More than 5 min. in any hour
(ii)	50 dBA	More than 1 min. in any hour
(iii)	55 dBA	In any period of time

(2) Ambient Noise Level. In the event the ambient noise level exceeds the noise limit set forth in either subsection (b)(1)(i) or (b)(1)(ii) of this Section, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the noise limit set forth in subsection (b)(1)(iii) of this Section, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Section 9.06.041 Exceptions. The following activities shall be exempted from the noise standard provisions of Section 9.06.040:

(a) School bands, school athletic and school entertainment events. School entertainment events shall not include events sponsored by student organizations;

(b) Outdoor gatherings, public dances, shows and sporting and entertainment events, provided said events are conducted pursuant to a discretionary license or permit by the City;

(c) Activities conducted on parks and public playgrounds, provided such parks and public playgrounds are owned and operated by a public entity;

(d) Any mechanical device, apparatus, emergency generator having a maximum generation of fifteen thousand (15,000) kilowatts, equipment related to or connected with emergency activities or emergency work, but only for the period in which there is an emergency and, in the case of emergency generators, only during a power outage and routine testing of generators;

(e) Noise sources associated with construction or landscape maintenance activities during the hours specified by Section 9.06.047(b); provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The Planning Director may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three (3) days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work;

(f) Maintenance of trees and residential property by the property occupant him/herself provided said activities take place between the hours of 7:00 a.m. and 6:00 p.m.;

(g) Tree and park and street maintenance activities conducted by the City;

(h) Any activity to the extent provisions of Chapter 65 of Title 42 of the United States Code, and Articles 3 and 3.5 of Chapter 4 of Division 9 of the Public Utilities Code of the State of California preempt local control of noise regulations and land use regulations related to noise control of airports and their surrounding geographical areas, any noise source associated with the construction, development, manufacture, maintenance, testing or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States, any other activity to the extent regulation thereof has been preempted by State or Federal law or regulation.

Section 9.06.042 Schools, hospitals, and churches.

It is unlawful for any person to create any noise which causes the noise level at any school, hospital or church while the same is in use to exceed the noise limits as specified in subsection (a) of this Section, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs or annoys patients in the hospital, provided conspicuous signs, conforming to applicable law and as may be required to be approved by applicable authority, are displayed in three (3) separate locations within one-tenth (1/10) of a mile of the institution indicating the presence of a school, church, or hospital.

Section 9.06.043 Residential pumps, fans, and air conditioners.

(a) It is unlawful for any person to operate any residential fans, air conditioners, stationary pumps, stationary cooling towers, stationary compressors, similar mechanical device or any combination thereof installed after August 16, 1991 in any manner so as to create any noise which would cause the maximum noise level to exceed: (i) sixty (60) dBA at any point at least one (1) foot inside the property line of the affected residential property and three (3) to five (5) feet above ground level; (ii) fifty-five (55) dBA in the center of a neighboring patio three (3) to five (5) feet above ground level; (iii) fifty-five (55) dBA outside of the neighboring living area window nearest the equipment location. Measurements shall be taken with the microphone not more than three (3) feet from the window opening but at least three (3) feet from any other surface.

(b) Equipment installed after August 18, 1996 must comply with a maximum limit of fifty-five (55) dBA at any point at least one (1) foot inside the property line of the affected residential property and three (3) to five (5) feet above ground level.

(c) Equipment installed before August 18, 1991 must comply with a limit of sixty-five (65) dBA maximum sound level, at any point at least one (1) foot inside the property line of the affected residential property and three (3) to five (5) feet above ground level after the effective date of this Chapter.

Section 9.06.044 Off-road vehicles.

It is unlawful for any person to operate any motorcycle or recreational off-road vehicle on or off a public road in such a manner that the noise level exceeds the exterior noise standards specified in subsection 9.06.040(a).

Section 9.06.045 Waste disposal vehicles.

It is unlawful for any person authorized to engage in waste disposal service or garbage collection to operate any truck mounted waste or garbage loading and/or composting equipment or similar mechanical device in any manner so as to create any noise exceeding the following level, when measured at a distance of fifty (50) feet from the equipment or any residential property:

(a) New equipment purchased or leased on or after February 16, 1992 shall not exceed a noise level of eighty (80) dBA.

(b) New equipment purchased or leased on or after February 16, 1995 shall not exceed a noise level of seventy-five (75) dBA.

(c) No equipment shall exceed a noise level of eighty (80) dBA after August 18, 1996.

Section 9.06.047 Construction or landscape maintenance noise.

Construction, landscape maintenance, and similar activities shall be limited to the following hours unless a temporary waiver is granted by the Planning Director or his/her authorized designee:

Monday - Friday	7:00 a.m. – 5:00 p.m.
Saturday	8:00 a.m. – 5:00 p.m.
No usage on Sundays or National Holidays: New Year's Day, Martin Luther King Day, President's Day, Memorial Day, Fourth of July, Labor Day, Veteran's Day, Thanksgiving Day, Day After Thanksgiving and Christmas Day.	

5.0 Study Method and Procedure

The following section describes the noise modeling procedures and assumptions used for this assessment.

5.1 Noise Measurement Procedure and Criteria

Noise measurements are taken to determine the existing noise levels. A noise receiver or receptor is any location in the noise analysis in which noise might produce an impact. The following criteria are used to select measurement locations and receptors:

- Locations expected to receive the highest noise impacts, such as the first row of houses
- Locations that are acoustically representative and equivalent of the area of concern
- Human land usage
- Sites clear of major obstruction and contamination

MD conducted the sound level measurements in accordance with the City and Caltrans technical noise specifications. All measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA). The following gives a brief description of the Caltrans Technical Noise Supplement procedures for sound level measurements:

- Microphones for sound level meters were placed 5 feet above the ground for all measurements
- Sound level meters were calibrated before and after each measurement
- Following the calibration of equipment, a windscreen was placed over the microphone
- Frequency weighting was set on “A” and slow response
- Results of the long-term noise measurements were recorded on field data sheets
- During any short-term noise measurements, any noise contaminations such as barking dogs, local traffic, lawnmowers, or aircraft flyovers were noted
- Temperature and sky conditions were observed and documented

5.2 SoundPLAN Noise Modeling

SoundPLAN acoustical modeling software was utilized to create existing (2024), future (2045) without Project (Adopted General Plan), and future (2045) with Project (Proposed General Plan) traffic noise level contours for the 12 segments analyzed in the Project’s traffic impact analysis provided by Kittelson & Associates, Inc. and 7 segments from Coachella Valley Traffic Counts. For the 7 segments, the 2024 and 2045 counts were projected from the growth observed for the 2010, 2011, 2013, 2015, and 2017 counts. These 7 segments are not used for significance determination and are only for noise contour references. Model parameters included average daily traffic volumes, day/evening/night split, roadway classification, width, speed, and truck mix. All modeled roadways were assumed to have a “hard site”, as the majority of analysis occurs at 50 feet from the centerline of the road. Possible reductions in noise levels due to intervening topography and buildings were not accounted for in this analysis. Roadway

modeling assumptions utilized for the technical study are provided in Table 8 and Table 9 and in Appendix C. A summary of the model parameters and REMEL adjustments is presented below.

- Roadway classification – (e.g., freeway, major arterial, arterial, secondary, collector, etc.),
- Roadway Active Width – (distance between the center of the outermost travel lanes on each side of the roadway)
- Average Daily Traffic Volumes (ADT), Travel Speeds, Percentages of automobiles, medium trucks, and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g., soft vs. hard)
- Percentage of total ADT which flows each hour throughout a 24-hour period

5.3 FHWA Traffic Noise Prediction Model

The FHWA Traffic Noise Prediction Model (FHWA-RD-77-108) was utilized to model and compare existing traffic noise levels to 2045 Future noise levels. The FHWA model arrives at the predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Roadway modeling assumptions utilized for the technical study are provided in Table 8 and Table 9.

Table 8: Roadway Noise Modeling Parameters

Roadway	Segment	2024 ADT[1]	2045 No Project ADT[1]	2045 With Project ADT[1]	Speed[2]	Vehicle Mix[3]
Hovley Lane	East City Boundary to West City Boundary	15,630	15,100	15,080	50	Arterial
Fred Waring Drive	Eldorado Drive to Cook Street	37,930	42,700	42,550	50	Arterial
Cook Street	Fred Waring Drive to Highway 111	18,990	22,200	22,090	40	Arterial
Cook Street	Highway 111 to Fairway Drive	13,080	14,300	14,270	35	Arterial
Eldorado Drive	Fred Waring Drive to Highway 111	4,870	5,400	5,340	40	Collector
Eldorado Drive	Highway 111 to Fairway Drive	5,210	5,400	5,420	35	Collector
Warner Trail	Fred Waring Drive to Miles Avenue	4,330	6,300	6,200	35	Collector
Highway 111	Cook Street to Rancho Palmeras Drive	34,610	46,800	46,310	45	Arterial
Highway 111	Miles Street to Washington Street	37,330	48,200	47,830	45	Arterial
Miles Avenue	Warner Trail to Washington Street	6,970	10,500	10,340	50	Arterial
Fairway Drive	Cook Street to Rancho Palmeras Drive	4,160	4,300	4,260	35	Collector
Portola Avenue	Mockingbird Trail to South City Limit	12,340	13,500	13,430	40	Collector

Notes:
1) Kittelson & Associates, Inc., August 2024.
2) Speed was modeled as posted.
3) See Table 9

Table 9: Vehicle Mix Data

Motor-Vehicle Type[1,2]	Daytime % (7AM to 7 PM)	Evening % (7 PM to 10 PM)	Night % (10 PM to 7 AM)	Total % of Traffic Flow
Arterial				
Automobiles	77.5%	12.4%	10.2%	81.4%
Medium Trucks	82.4%	5.8%	11.8%	18.0%
Heavy Trucks	77.1%	1.2%	21.7%	0.6%
Collector				
Automobiles	87.9%	7.2%	5.0%	75.7%
Medium Trucks	92.0%	2.3%	5.7%	23.4%
Heavy Trucks	92.4%	0.4%	7.2%	0.9%

Notes:
[1] Indian Wells 24hr traffic counts, Counts Unlimited, Inc. 2024.

6.0 Existing Noise Environment

6.1 General Land Use Noise

Existing land uses within the Project Area include single and multiple-family residential development, commercial, industrial, open space, and public facility land uses. Noise sources associated with existing land uses include residential maintenance, parking lot noise, heating, and cooling system (HVAC) noise, property maintenance noise, trash truck noise, loading and unloading noise, and recreational noise.

6.2 Noise Measurements

Four (4) long-term 24-hour noise measurements and eleven (11) short-term 15-minute noise measurements were conducted throughout the Project Area to document the existing noise environment. Noise measurement locations are shown in Exhibit G.

6.2.1 Short-Term Noise Measurements

Eleven short-term noise measurements (15-minute) were taken on March 25th, 2024, in order to document the daytime Leq level at different locations throughout the Project Area. Measured noise levels ranged between 55.2 and 73.5 dBA Leq. Vehicle noise associated with Hovley Lane, Fred Waring Drive, and Washington Street were the primary sources of ambient noise. Noise measurement results are presented in Table 10. Field notes and meter output are provided in Appendix B.

Table 10: Short-Term Noise Measurement Summary

Noise Measurement Location	Approximate Location	Start Time	A-Weighted Sound Level (dBA)							
			Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
ST1	3800 Hovley Lane	11:33 AM	73.5	85.0	54.4	81.1	78.6	74.0	66.8	58.3
ST2	Fred Waring Drive	11:18 AM	72.4	82.0	51.4	80.6	77.4	73.0	68.5	58.2
ST3	74980 California 111	11:52 AM	65.4	79.7	49.4	73.9	69.0	64.1	59.7	52.4
ST5	77494 Blackfoot Drive	9:57 AM	55.2	64.1	41.1	62.8	60.4	55.4	50.4	45.9
ST6	75268 Mansfield Drive	12:50 PM	67.1	76.3	47.3	73.0	70.4	67.8	65.8	58.2
ST7	Miles Avenue	10:35 AM	68.0	83.1	41.5	78.1	72.9	63.7	53.0	43.1
ST8	74999 Chateau Circle	12:04 PM	67.3	82.1	41.6	74.7	72.2	66.3	59.2	44.6
ST10	77758 Schubert Way	10:59 AM	67.5	74.2	55.6	71.8	70.6	69.0	67.0	59.5
ST11	75135 Chippewa Drive	12:13 PM	62.3	73.6	43.1	70.4	67.7	62.5	55.9	47.8
ST12	47495 Marrakesh Drive	12:30 PM	65.1	75.6	57.4	72.0	68.4	65.0	62.9	59.8
ST13	Washington Street	10:47 AM	72.1	79.2	51.2	77.8	76.5	74.1	70.1	57.1

6.2.2 Long-Term Noise Measurements

Four (4) long-term noise measurements (24 consecutive hours) were taken in order to document the Community Noise Equivalent Level (CNEL) at different locations throughout the Project Area. The

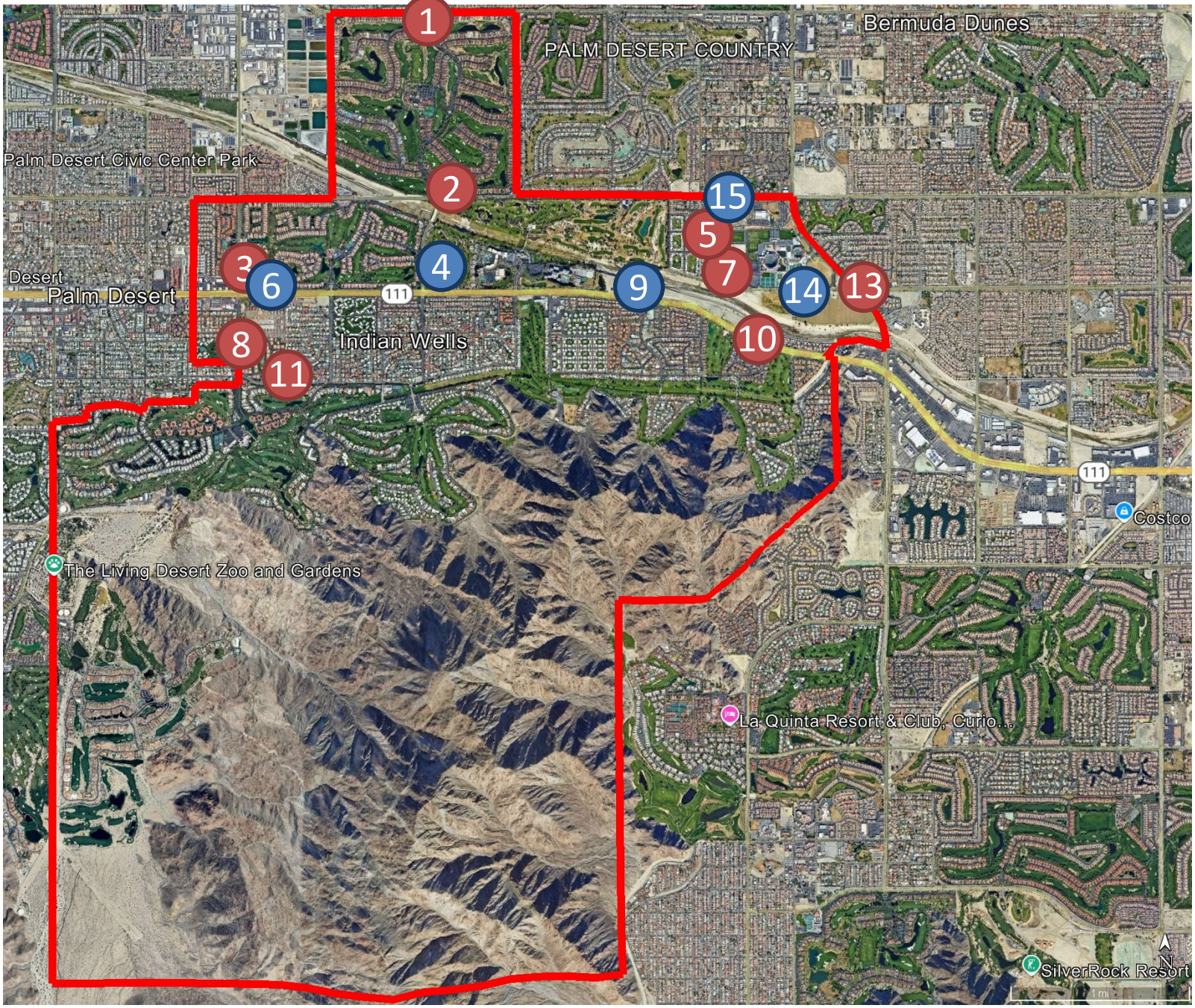
primary noise source was vehicle traffic. Table 11 also outlines the daytime (7 AM to 7 PM), evening (7 PM to 10 PM), and nighttime (10 PM to 7 AM) Leq levels at each location. These represent the average level over each time period (day/evening/night). Field notes and meter output are provided in Appendix B.

Table 11: Long-Term Noise Measurement Summary

Noise Measurement Location	Approximate Location	Date	Description	A-Weighted Sound Level (dBA)			
				Daytime Leq	Evening Leq	Nighttime Leq	CNEL
LT4	75816 Vista Del Rey	04/10/24-04/11/24	Hwy 111 & Eldorado Drive traffic noise	60.9	57.4	52.6	63.1
LT9	Hwy 111 & Miles Avenue	03/26/24-03/27/24	Hwy 111 & Miles Avenue traffic noise	76.8	75.2	67.1	78.4
LT14	78204 Miles Avenue	03/26/24-03/27/24	Hwy 111 & Miles Avenue traffic noise	61.0	57.5	50.8	61.9
LT15	77757 Fred Waring Drive	04/10/24-04/11/24	Fred Waring Drive traffic noise	76.3	75.0	67.9	78.5

Notes:
dBA = A-weighted decibels
Leq = equivalent noise level
Lmax = maximum noise level
Lmin = minimum noise level
Ln = noise level exceeded n percent of the measurement period
24-hour duration

Exhibit G
Measurement Location Map



= Short-Term Monitoring Location

= Long-Term Monitoring Location

6.3 Existing Traffic Noise Modeling

The primary sources of noise in Indian Wells are transportation-related noises. Major roadways create ambient noise levels that affect the overall quality of life in the community. Modeled existing noise levels provided in Table 12 and Exhibit H confirm that there are currently sensitive land uses in the Project Area that are exposed to noise levels above 65 dBA CNEL.

It should be noted that the modeled noise contours do not take into account factors such as existing buildings, walls, etc., that may reduce or, in some cases, amplify or reduce noise sources. The model also assumes hard site, when in reality, some of the City has soft site ground such as grass or dirt, which will reduce the noise levels. Measured noise levels provided in Tables 12 and 13 do take into account existing structures as well as other noise sources.

Those areas in the City that currently experience sound levels greater than 65 dBA CNEL are typically near major vehicular traffic corridors. Traffic noise levels typically depend on three factors: (1) the volume of traffic, (2) the average speed of traffic, and (3) the vehicle mix (i.e., the percentage of trucks versus automobiles in the traffic flow). Vehicle noise includes noises produced by the engine, exhaust, tires, and wind generated by taller vehicles. Other factors that affect the perception of traffic noise include the distance from the highway, terrain, heavy vegetation, and natural and structural obstacles. While tire noise from automobiles is generally located at ground level, some truck noise sources may emanate from 12 feet or more above the ground.

Table 12: Existing Exterior Noise Levels Along Roadways

Roadway	Segment Limits	CNEL, dBA @50 ft[1,2]	Distance to Contour (feet)			
			70 dBA	65 dBA	60 dBA	55 dBA
Hovley Lane	East City Boundary to West City Boundary	73.9	123	389	1,231	3,894
Fred Waring Drive	Eldorado Drive to Cook Street	78.7	373	1,178	3,727	11,785
Cook Street	Fred Waring Drive to Highway 111	72.8	95	299	945	2,989
Cook Street	Highway 111 to Fairway Drive	69.9	49	154	487	1,541
Eldorado Drive	Fred Waring Drive to Highway 111	66.1	20	64	203	642
Eldorado Drive	Highway 111 to Fairway Drive	65.3	17	53	168	531
Warner Trail	Fred Waring Drive to Miles Avenue	64.1	13	40	128	404
Highway 111	Cook Street to Rancho Palmeras Drive	77.4	275	868	2,746	8,685
Highway 111	Miles Street to Washington Street	77.1	257	813	2,571	8,129
Miles Avenue	Warner Trail to Washington Street	70.4	54	171	542	1,714
Fairway Drive	Cook Street to Rancho Palmeras Drive	63.9	12	39	123	388
Portola Avenue	Mockingbird Trail to South City Limit	69.9	49	156	492	1,557

Notes:

1) Exterior noise levels calculated at 5-feet above ground.

2) Noise levels calculated from centerline of subject roadway.

3) Contour distances do not take into account potential noise reduction from existing barriers such as buildings, walls or berms as a worst-case scenario for planning screening purposes. Overall levels are likely lower at sensitive receptors.

Exhibit H-1

Existing Roadway Noise Level Contours (CNEL)

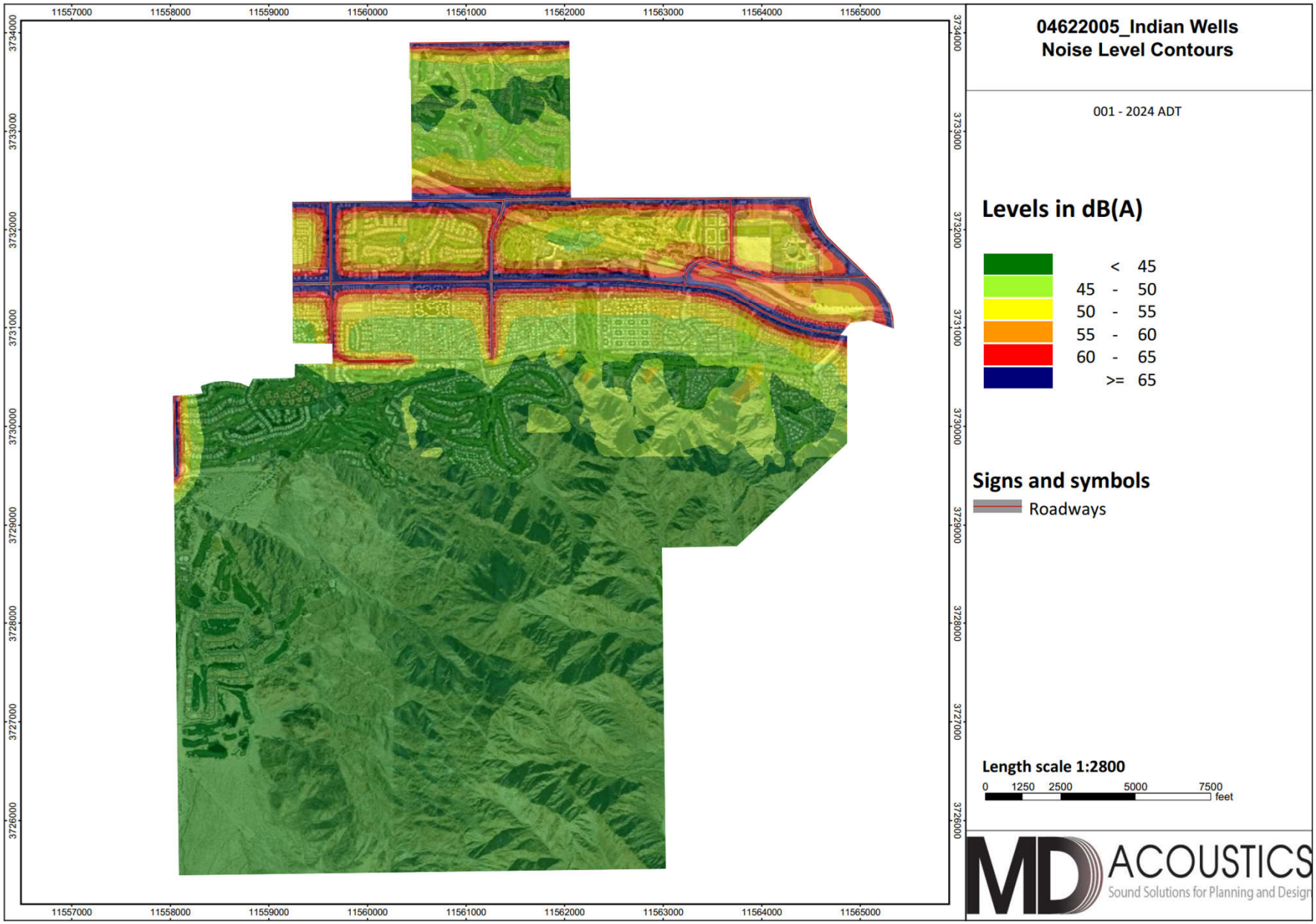


Exhibit H-2

Existing Roadway Noise Level Contours (CNEL)



6.4 Existing Airport/Aircraft Noise

There are no airports located within the Project Area, and the Project Area is not located within any airport noise contours. The closest airport to the Project Area is the Bermuda Dunes Airport, located approximately 2.1 miles northeast of the Project Area. The noise contours associated with this airport do not encroach into the Project Area.

6.5 Existing Vibration Sources in the Project Area

The main sources of vibration in the project area are related to vehicles, construction, and railway. Typical roadway traffic, including heavy trucks, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage. However, there have been cases in which heavy trucks traveling over potholes or other discontinuities in the pavement have caused vibration high enough to result in complaints from nearby residents. These types of issues typically can be resolved by smoothing the roadway surface (Caltrans 2020).

Construction activities that produce vibration that can be felt by adjacent land uses include the use of vibratory equipment, large bulldozers, and pile drivers. The primary source of vibration during construction is usually from a bulldozer. A large bulldozer has a peak particle velocity of 0.089 inches per second (87 VdB) at 25 feet.

No rail lines run through the City of Indian Wells. Therefore, the vibration impacts from railroad activities will not affect the Project Area.

7.0 Future Noise Environment, Impacts, and Mitigation

This assessment analyzes future noise impacts to and from the proposed Project and compares the results to the City of Indian Wells General Plan policies and noise ordinance. The analysis details the estimated noise levels associated with traffic from adjacent roadways and on-site stationary noise sources. Each future noise source related to the Project was evaluated in light of applicable City of Indian Wells General Plan policies and ordinances, and programmatic mitigation measures are provided as applicable.

7.1 Transportation Noise and Vibration

Transportation noise includes noise from aircraft, railways, and roadways. The Project Area is outside of any airport 65 dBA CNEL contours, and therefore, there is no aircraft impact. There are no railways within a mile of the City.

7.1.1 Vehicle Traffic Noise

The primary noise source in the Project Area will continue to be vehicle traffic. Future traffic noise level contours are presented in Exhibits I and J. Tables 14 and 15 show the future noise levels at a distance of 50 feet from the centerline of studied roadways by the year 2045 for No Project (existing general plan) and With Project (proposed general plan). The distances to the 55, 60, 65, and 70 dBA CNEL noise contours are also provided.

Table 14: 2045 No Project Traffic Noise Levels (dBA, CNEL)

Roadway	Segment Limits	CNEL, dBA @50 ft[1,2]	Distance to Contour (feet)[3]			
			70 dBA	65 dBA	60 dBA	55 dBA
Hovley Lane	East City Boundary to West City Boundary	73.8	119	376	1,190	3,762
Fred Waring Drive	Eldorado Drive to Cook Street	79.2	420	1,327	4,195	13,267
Cook Street	Fred Waring Drive to Highway 111	73.4	111	349	1,105	3,495
Cook Street	Highway 111 to Fairway Drive	70.3	53	168	533	1,685
Eldorado Drive	Fred Waring Drive to Highway 111	66.5	23	71	225	712
Eldorado Drive	Highway 111 to Fairway Drive	65.4	17	55	174	550
Warner Trail	Fred Waring Drive to Miles Avenue	65.7	19	59	186	587
Highway 111	Cook Street to Rancho Palmeras Drive	78.7	371	1,174	3,714	11,743
Highway 111	Miles Street to Washington Street	78.2	332	1,050	3,319	10,497
Miles Avenue	Warner Trail to Washington Street	72.1	82	258	817	2,583
Fairway Drive	Cook Street to Rancho Palmeras Drive	64.0	13	40	127	401
Portola Avenue	Mockingbird Trail to South City Limit	70.3	54	170	539	1,703

Notes:
1) Exterior noise levels calculated at 5-feet above ground.
2) Noise levels calculated from centerline of subject roadway.
3) Contour distances do not take into account potential noise reduction from existing barriers such as buildings, walls or berms as a worst-case scenario for planning screening purposes. Overall levels are likely lower at sensitive receptors.

Table 15: 2045 Plus Project Traffic Noise Levels (dBA, CNEL)

Roadway	Segment Limits	CNEL, dBA @50 ft[1,2]	Distance to Contour (feet)[3]			
			70 dBA	65 dBA	60 dBA	55 dBA
Hovley Lane	East City Boundary to West City Boundary	73.8	119	376	1,188	3,757
Fred Waring Drive	Eldorado Drive to Cook Street	79.2	418	1,322	4,181	13,220
Cook Street	Fred Waring Drive to Highway 111	73.4	110	348	1,100	3,477
Cook Street	Highway 111 to Fairway Drive	70.3	53	168	532	1,681
Eldorado Drive	Fred Waring Drive to Highway 111	66.5	22	70	223	704
Eldorado Drive	Highway 111 to Fairway Drive	65.4	17	55	175	552
Warner Trail	Fred Waring Drive to Miles Avenue	65.6	18	58	183	578
Highway 111	Cook Street to Rancho Palmeras Drive	78.7	367	1,162	3,675	11,620
Highway 111	Miles Street to Washington Street	78.2	329	1,042	3,294	10,416
Miles Avenue	Warner Trail to Washington Street	72.1	80	254	804	2,543
Fairway Drive	Cook Street to Rancho Palmeras Drive	64.0	13	40	126	397
Portola Avenue	Mockingbird Trail to South City Limit	70.3	54	169	536	1,695

Notes:
1) Exterior noise levels calculated at 5-feet above ground.
2) Noise levels calculated from centerline of subject roadway.
3) Contour distances do not take into account potential noise reduction from existing barriers such as buildings, walls or berms as a worst-case scenario for planning screening purposes. Overall levels are likely lower at sensitive receptors.

As shown in Tables 14 and 15 and Exhibits I and J, by the year 2045, existing land uses adjacent to the studied roadways will be exposed to noise levels that exceed the City's exterior standards of 65 dBA CNEL for noise-sensitive uses. A significant impact would occur if the Project resulted in levels higher than 65 dBA CNEL at sensitive uses and increased the overall roadway noise level by 3 dBA CNEL, which is a noticeable change in noise level. Table 16 outlines the change in noise level from 2024 to 2045 with and without the Project.

Table 16: Change in Noise Along Roadways (dBA, CNEL @ 50')

Roadway	Segment	Existing	2045 No Project		2045 With Project	
		CNEL @ 50' dBA[1]	CNEL @ 50' dBA	Change in Noise Level	CNEL @ 50' dBA	Change in Noise Level[2]
Hovley Lane	East City Boundary to West City Boundary	73.9	73.8	-0.1	73.8	-0.1
Fred Waring Drive	Eldorado Drive to Cook Street	78.7	79.2	0.5	79.2	0.5
Cook Street	Fred Waring Drive to Highway 111	72.8	73.4	0.6	73.4	0.6
Cook Street	Highway 111 to Fairway Drive	69.9	70.3	0.4	70.3	0.4
Eldorado Drive	Fred Waring Drive to Highway 111	66.1	66.5	0.4	66.5	0.4
Eldorado Drive	Highway 111 to Fairway Drive	65.3	65.4	0.1	65.4	0.1
Warner Trail	Fred Waring Drive to Miles Avenue	64.1	65.7	1.6	65.6	1.5
Highway 111	Cook Street to Rancho Palmeras Drive	77.4	78.7	1.3	78.7	1.3
Highway 111	Miles Street to Washington Street	77.1	78.2	1.1	78.2	1.1
Miles Avenue	Warner Trail to Washington Street	70.4	72.1	1.7	72.1	1.7

Roadway	Segment	Existing	2045 No Project		2045 With Project	
		CNEL @ 50' dBA[1]	CNEL @ 50' dBA	Change in Noise Level	CNEL @ 50' dBA	Change in Noise Level[2]
Fairway Drive	Cook Street to Rancho Palmeras Drive	63.9	64.0	0.1	64.0	0.1
Portola Avenue	Mockingbird Trail to South City Limit	69.9	70.3	0.4	70.3	0.4

Notes:
1) Existing and Future traffic volumes compiled by Kittelson & Associates, Inc. 2024.
2) An impact would occur if the Project increased the roadway segment level by 3 dB or more (an audible difference) and resulting in a future level above 65 dBA CNEL.

Compared to existing traffic noise levels, 2045 without Project traffic volumes are expected to be up to 1.7 dBA CNEL louder than existing ambient noise levels at existing land uses and will result in inaudible increases in ambient noise along the analyzed roadways (see Table 16). Note that Miles Avenue from Warner Trail to Washington Street does not have any adjacent noise-sensitive uses.

Compared to existing traffic noise levels, 2045 with Project traffic volumes are expected to be up to 1.7 dBA CNEL louder than existing ambient noise levels at existing land uses and will result in inaudible increases in ambient noise. Implementation of the Project will, therefore, result in a less than significant impact to roadway noise levels.

Where proposed land uses are expected to be exposed to noise levels that exceed the land use compatibility criteria in Exhibit F and 65 dBA CNEL residential limit outlined in the General Plan, impacts can be mitigated to a level that is less than significant with the implementation of noise control measures, such as relocating residential outdoor recreational areas away from 65 dBA CNEL or greater areas or shielding outdoor areas using noise barriers. Per the existing General Plan, future residential or noise-sensitive development associated with implementation of the proposed Project requires a noise study and mitigation implemented if exterior noise levels exceed 65 dBA CNEL. For residential developments, the study must ensure that interior levels in livable areas do not exceed 45 dBA CNEL. The impact is less than significant with the proposed General Plan policies PS-6.1, PS-6.2, PS-6.3, and PS-6.8 and actions PS-6a, PS-6f and PS-6k.

<Exhibit I, next page>

Exhibit I-1

2045 No Project Noise Contours (CNEL)

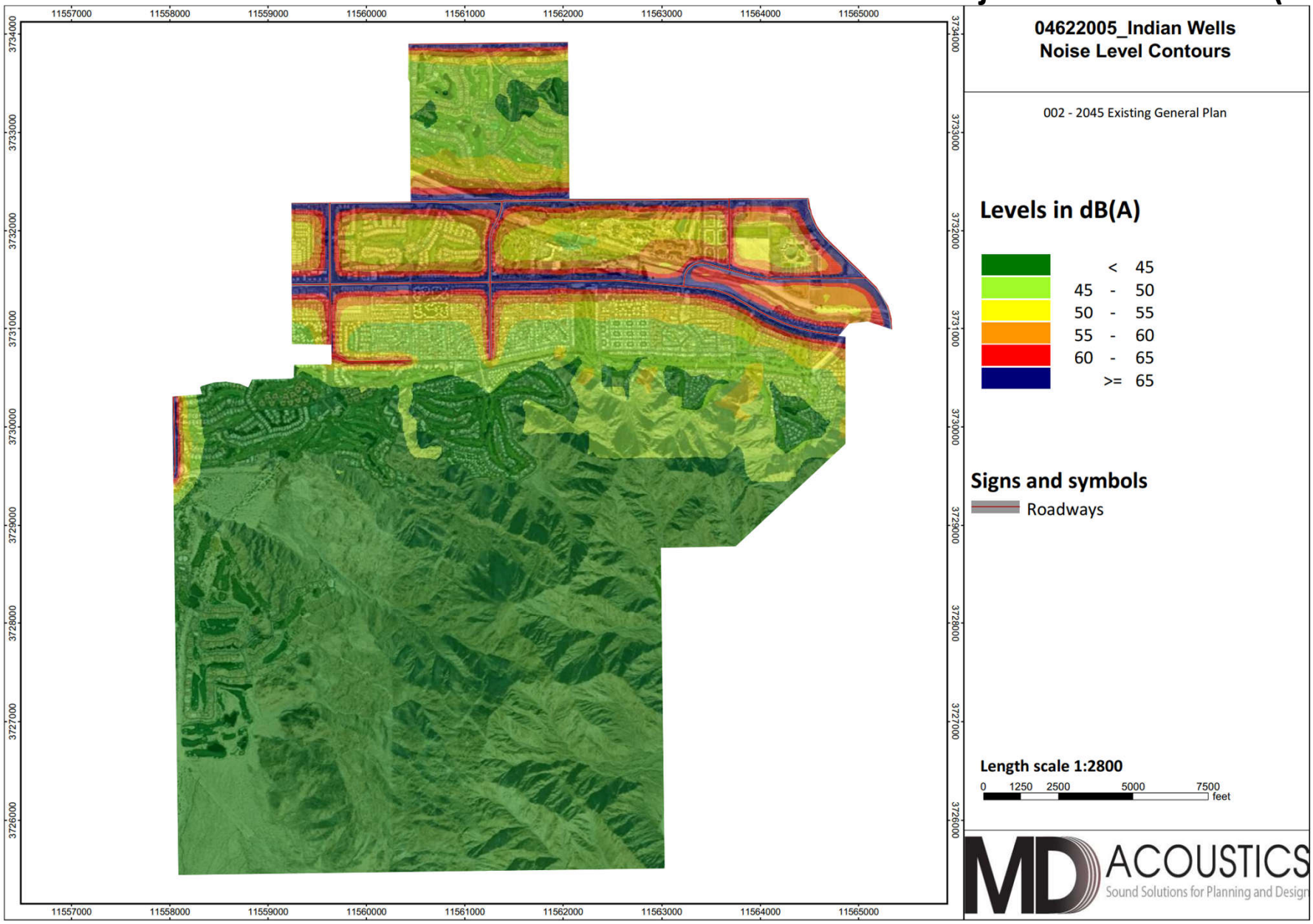


Exhibit I-2

2045 No Project Noise Contours (CNEL)

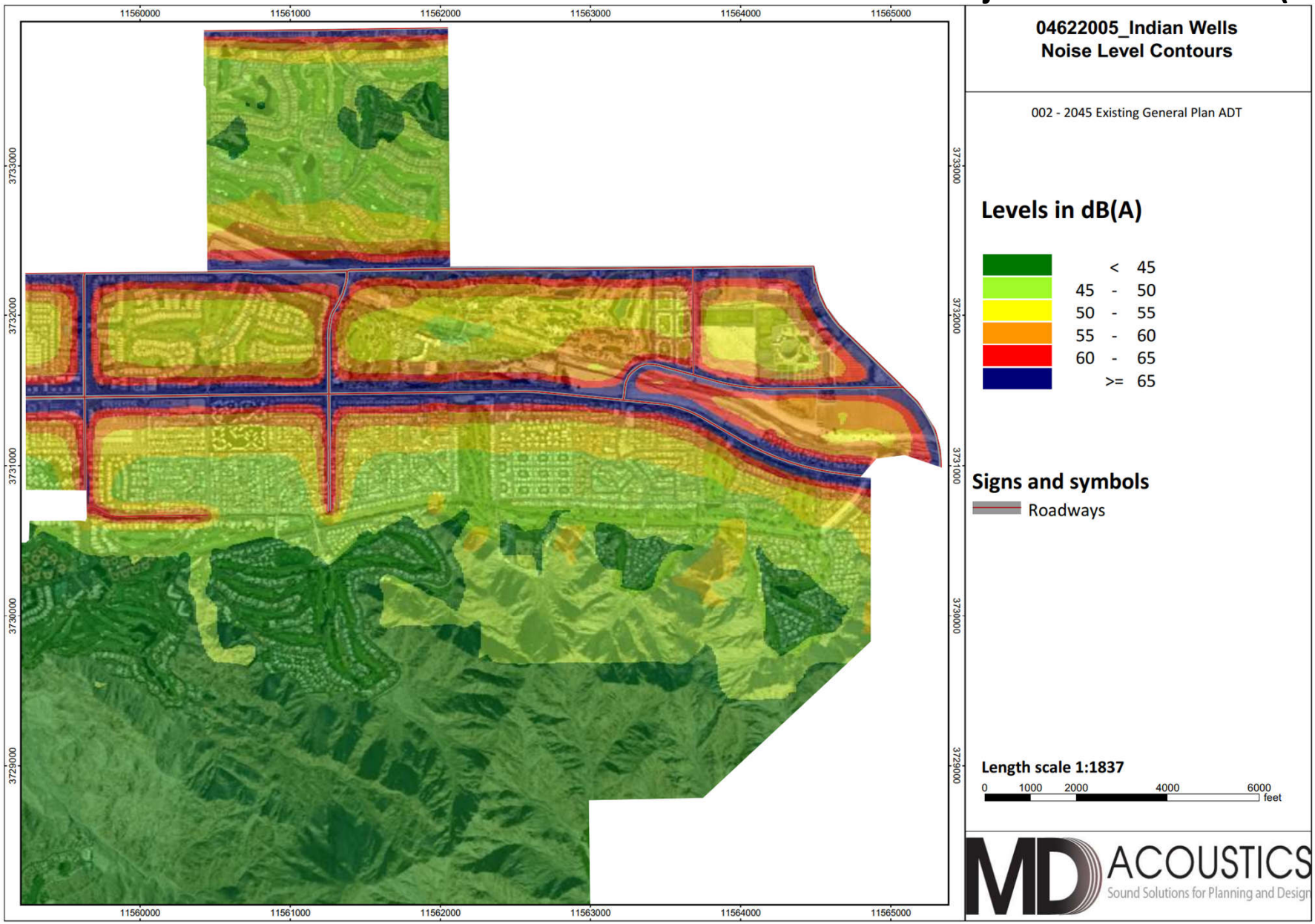


Exhibit J-1

2045 With Project Noise Contours (CNEL)

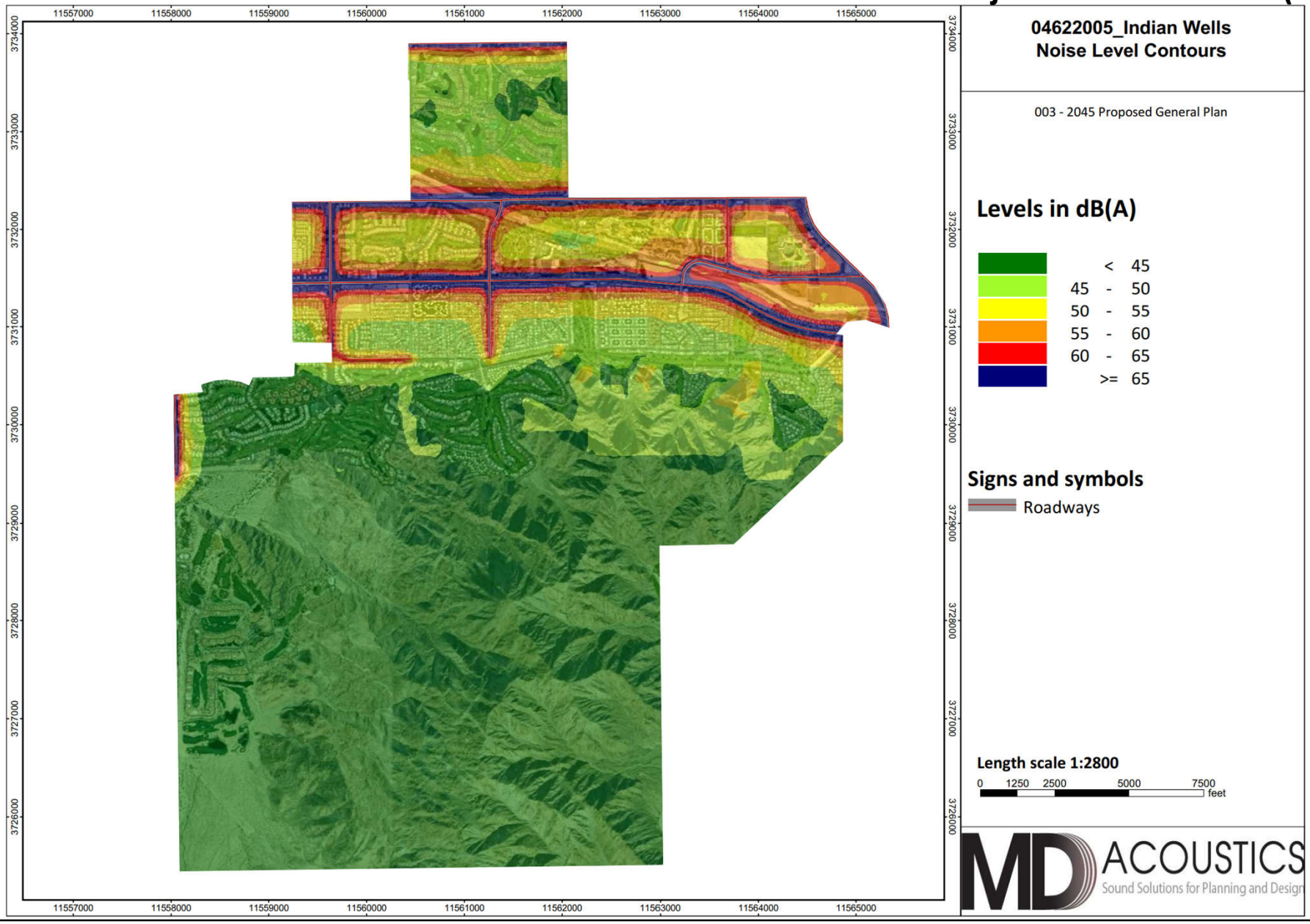
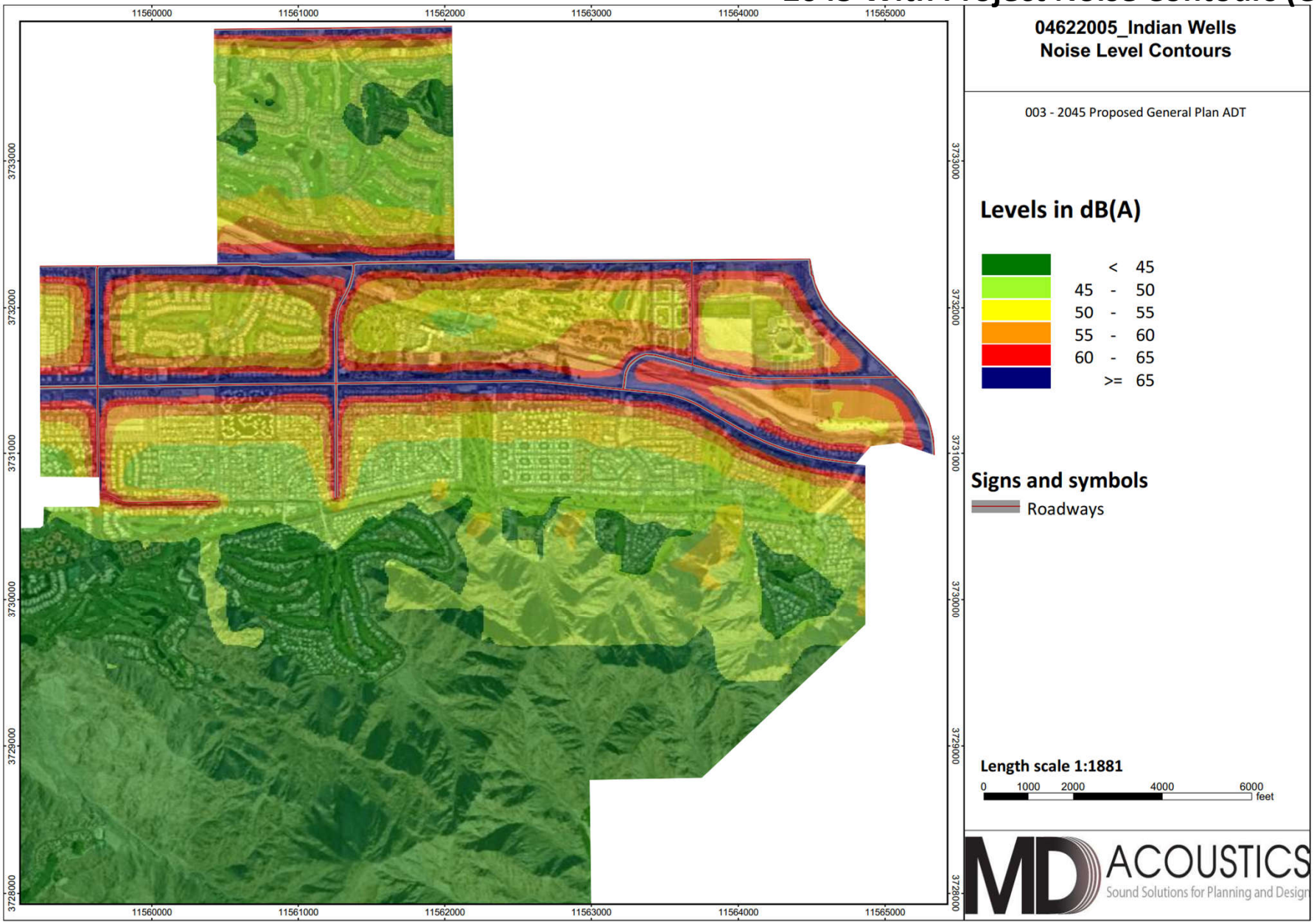


Exhibit J-2

2045 With Project Noise Contours (CNEL)



7.2 Stationary Noise

Implementation of the Project could result in the future development of land uses that generate noise levels in excess of applicable City noise standards for non-transportation noise sources as outlined in Section 4.3.2. While the Project does not explicitly propose any new noise-generating uses, Project implementation would allow for the development of mixed-uses, increased residential development at higher densities, and new commercial development, which may result in new noise sources. Specific development projects and the details of future noise-generating land uses that may be located in the Project Area in the future are not known at this time. Additionally, noise from existing stationary sources, as identified in the Existing Settings Section, would continue to impact noise-sensitive land uses in the vicinity of the noise sources.

While no specific projects are proposed under the Project, changes in land use may allow for more intensive noise-generating uses in closer proximity to noise-sensitive uses. Where this occurs, detailed noise studies would be required to ensure that noise control measures are implemented into the project design. Such measures could include the redesign of stationary noise sources away from sensitive uses, construction of sound walls or berms between noise generating uses and sensitive uses, using buildings to create additional buffer distance and screening, or other site design measures to ensure that non-transportation (stationary) noise sources do not cause exterior and interior noise levels to exceed allowable standards at sensitive receptors. The impact is less than significant with the implementation of the Indian Wells Noise Ordinance and the proposed General Plan policies PS-6.1, PS-6.2, PS-6.3, PS-6.5 and actions PS-6a, PS-6b, PS-6c, and PS-6i.

7.3 Construction Noise

The degree of construction noise may vary for different projects within the scope of the proposed Project and also vary depending on the construction activities. Noise levels associated with the construction will vary with the different phases of construction. Construction must occur between the hours of 7:00 a.m. and 5:00 p.m. on Monday through Friday, between the hours of 8:00 a.m. and 5:00 p.m. on Saturdays, or any time on Sunday or a national holiday per Section 9.06.047 of the Indian Wells Municipal Code. Construction noise is exempt from the noise ordinance during those times per Section 9.06.041(e) with the use of suitable mufflers.

The Environmental Protection Agency (EPA) has compiled data regarding the noise-generated characteristics of typical construction activities. The data is presented in Table 17. These noise levels would diminish rapidly with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured 50 feet from the noise source would reduce to 80 dBA at 100 feet. At 200 feet from the noise source, the noise level would reduce to 74 dBA. At 400 feet, the noise source would reduce by another 6 dBA to 68 dBA.

Table 17: Typical Construction Noise Levels

Equipment Powered by Internal Combustion Engines	
Type	**Noise Levels (dBA) at 50 Feet**
Earth Moving	
Compactors (Rollers)	73 - 76
Front Loaders	73 - 84
Backhoes	73 - 92
Tractors	75 - 95
Scrapers, Graders	78 - 92
Pavers	85 - 87
Trucks	81 - 94
Materials Handling	
Concrete Mixers	72 - 87
Concrete Pumps	81 - 83
Cranes (Movable)	72 - 86
Cranes (Derrick)	85 - 87
Stationary	
Pumps	68 - 71
Generators	71 - 83
Compressors	75 - 86
Impact Equipment	
Saws	71 - 82
Vibrators	68 - 82
Notes: Source: Reference Noise Levels from the Environmental Protection Agency (EPA)	

7.3.1 Construction-Related Traffic

Individual projects within the scope of the Project would result in short-term noise impacts associated with construction activities. Two types of short-term noise impacts could occur during construction activities. First, the construction crew commute and the transport of construction equipment and materials to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. Truck traffic associated with project construction should be limited to within the permitted construction hours, as listed in the City's Municipal Code Section 9.06.047. Although there would be a relatively high single-event noise exposure potential at a maximum of 87 dBA Lmax at 50 ft from passing trucks, causing possible short-term intermittent annoyances, the effect on ambient noise levels would be less than 1 dBA when averaged over one hour or 24 hours. In other words, the changes in noise levels over 1 hour or 24 hours attributable to passing trucks would not be perceptible to the normal human ear. The impact is less than significant with the implementation of Sections 9.06.041(e) and 9.06.047 of the Municipal Code and proposed General Plan action PS-6g.

7.3.2 On-Site Construction Activities

The site preparation phase, which includes grading and paving, tends to generate the highest noise levels since the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting

equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Site-specific construction activities associated with future development are expected to require the use of scrapers, bulldozers, motor graders, and water and pickup trucks. The maximum noise level generated by each scraper is assumed to be approximately 87 dBA Lmax at 50 ft from the scraper in operation. Each bulldozer would also generate approximately 85 dBA Lmax at 50 ft. The maximum noise level generated by the sound sources with equal strength increases the noise level by 3 dBA. Noise reduction potential will be project and site-specific. Construction noise would be an impact if construction occurred outside of the hours outlined in Section 9.06.047 of the Indian Wells Municipal Code. Potential impacts would be site-specific, depending on the equipment used and distances to sensitive receptors. The impact is less than significant with the implementation of Section 9.06.047 of the Municipal Code and proposed General Plan policy PS-6.6.

7.4 Groundborne Vibration

The main sources of vibration in the project area are related to vehicles and construction. Typical roadway traffic, including heavy trucks, rarely generates vibration amplitudes high enough to cause structural or cosmetic damage. However, there have been cases in which heavy trucks traveling over potholes or other discontinuities in the pavement have caused vibration high enough to result in complaints from nearby residents. These types of issues typically can be resolved by smoothing the roadway surface (Caltrans 2020).

7.4.1 On-Site Construction Activities

Construction activities that produce vibration that can be felt by adjacent land uses include the use of vibratory equipment, large bulldozers, and pile drivers. The primary sources of vibration during construction are usually vibratory rollers and large bulldozers. As shown in Table 18, a vibratory roller has a peak particle velocity (inches/second) of 0.21, and a large bulldozer has a peak particle velocity of 0.089 (inches per second) at 25 feet. The use of pile-driving equipment can generate a peak particle velocity of 1.5 (inches per second) depending on the size and model.

Table 18: Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (VdB) at 25 feet
Pile driver (impact)	1.518 (upper range)	112
	0.644 (typical)	104
Pile driver (sonic)	0.734 upper range	105
	0.170 typical	93
Clam shovel drop (slurry wall)	0.202	94
Hydromill (slurry wall)	0.008 in soil	66
	0.017 in rock	75
Vibratory Roller	0.21	94

Table 18: Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second) at 25 feet	Approximate Vibration Level LV (VdB) at 25 feet
Hoe Ram	0.089	87
Large bulldozer	0.089	87
Caisson drill	0.089	87
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, May 2006.

The California Department of Transportation has published one of the seminal works for the analysis of ground-borne noise and vibration relating to transportation- and construction-induced vibrations and, although the Project is not subject to these regulations, it serves as a useful tool to evaluate vibration impacts (California Department of Transportation, 2013). Table 19 provides maximum PPV levels (inches/second) to be used to determine if groundborne vibration may result in damage, depending on the type of structure. When evaluated in light of the estimated groundborne vibration levels presented in Table 18, it can be determined that construction activities in the project area have the potential to result in significant impacts related to groundborne vibration associated with construction activities. These impacts are less than significant by requiring vibration impact studies when construction utilizes pile drivers within 200 feet of existing buildings or vibratory rollers within 50 feet of existing buildings as required in proposed General Plan policy PS-6.7 and action PS-6j.

Table 19: Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (inches/second)	
	Transient Sources	Continuous/Frequent Intermittent Source
Extremely fragile historic buildings, ruins, ancient monuments	0.1	0.1
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.3
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

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

Note: transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

8.0 CEQA Analysis

The California Environmental Quality Act Guidelines (Appendix G) establishes thresholds for noise impact analysis as presented below:

(a) Would the project result in the 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 Code, or applicable standards of other agencies?

Transportation Noise Impacts

Traffic noise will be significant if levels are increased by more than 3 dBA to levels above 65 dBA CNEL in areas with sensitive uses. Compared to existing traffic noise levels, 2045 plus Project traffic volumes are expected to be up to 1.7 dBA CNEL louder than existing ambient noise levels at existing land uses and will not result in substantial increases in ambient noise along the analyzed roadways (see Table 16).

Implementation of the proposed Project will result in less than significant impacts related to exceedances of the land use compatibility criteria. ***Where existing land uses will be impacted, the impact would be less than significant. Where proposed residential and noise-sensitive land uses are expected to be exposed to noise levels that exceed the 65 dBA CNEL land use compatibility criteria, impacts can be mitigated to "less than significant" with implementation of the proposed General Plan policies PS-6.1, PS-6.2, PS-6.3, and PS-6.8 and actions PS-6a, PS-6f and PS-6k.***

Stationary Noise Sources

Stationary noise will be significant if it exceeds the levels outlined in the Indian Wells Municipal Code as outlined in Section 4.3.2. Implementation of the Project may result in stationary noise impacts from future uses. Implementation of good land use planning and policies and actions can minimize noise impacts related to these sources by avoiding the placement of noise generating equipment near noise-sensitive land uses and where unavoidable, include design measures to the degree practical to avoid violating the noise criteria presented in Section 4.3.2. ***Stationary noise impacts can be mitigated to "less than significant" with implementation of Indian Wells Noise Ordinance and the proposed General Plan policies PS-6.1, PS-6.2, PS-6.3, PS-6.5 and actions PS-6a, PS-6b, PS-6c, and PS-6i.***

Construction Noise and Vibration

Construction noise will be significant if construction occurs outside of the hours specified in Section 9.06.047 of the Indian Wells Municipal Code. The potential impact is site-specific and depends on the construction equipment used and distance to adjacent sensitive receptors. Implementation of the proposed Project could result in short-term noise impacts associated with construction activities. Two types of short-term noise impacts could occur during construction activities, on-site and off-site.

Construction crew commute and the transport of construction equipment and materials to the site for the proposed Project would incrementally increase noise levels on access roads leading to the site. Truck traffic associated with project construction should be limited to within the permitted construction hours,

as listed in the City's Municipal Code. Although there would be a relatively high single-event noise exposure potential at a maximum of 87 dBA Lmax at 50 ft from passing trucks, causing possible short-term intermittent annoyances, the effect on ambient noise levels would be less than 1 dBA when averaged over one hour or 24 hours. In other words, the changes in noise levels over 1 hour or 24 hours attributable to passing trucks would not be perceptible to the normal human ear.

The site preparation phase of on-site construction activities, which includes grading and paving, tends to generate the highest noise levels since the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 or 4 minutes at lower power settings. Site-specific construction activities associated with future development are expected to require the use of scrapers, bulldozers, motor graders, and water and pickup trucks. The maximum noise level generated by each scraper is assumed to be approximately 87 dBA Lmax at 50 ft from the scraper in operation. Each bulldozer would also generate approximately 85 dBA Lmax at 50 ft. The maximum noise level generated by the sound sources with equal strength increases the noise level by 3 dBA. Noise reduction potential will be Project and site-specific. ***Implementation of Sections 9.06.041(e) and 9.06.047 of the Municipal Code and the proposed General Plan policy PS-6.7 and actions PS-6g and PS-6j will reduce the impact to less than significant.***

b) Generate excessive ground-borne vibration or ground-borne noise levels?
Construction vibration within the Project Area is not anticipated to be significant unless an individual development uses pile driving or vibratory rollers. These impacts can be avoided by requiring vibration impact studies when construction utilizes pile drivers within 200 feet of existing buildings or vibratory rollers within 50 feet of existing buildings. ***This impact would be less than significant with the implementation of proposed General Plan policy PS-6.7 and action PS-6j.***

9.0 References

American National Standards Institute (ANSI)

Specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

California, State of, Building Standards Commission

2019 California Uniform Building Code (UBC), Title 24.
2019 Green Code Section 5.507.4.3 (2019)

California Department of Transportation (Caltrans)

2013 Technical Noise Supplement to the Traffic Noise Analysis Protocol.
2020 Transportation and Construction Vibration Guidance Manual. April.
2021 Caltrans Traffic Counts https://dot.ca.gov/programs/traffic-operations/census

California Office of Noise Control

2017 Guidelines for the Preparation and Content of Noise Elements of the General Plan. February.

Environmental Protection Agency (EPA)

1974 Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Prepared by the EPA, Office of Noise Abatement and Control.

Federal Interagency Committee on Noise

1992 Federal Agency Review of Selected Airport Noise Analysis Issues. August.

Federal Transit Administration

2006 Transit Noise and Vibration Impact Assessment. Typical Construction Equipment Vibration Emissions. FTAVA-90-1003-06.

Indian Wells, City of

1996 General Plan.
Municipal Code Chapter 9.06.

Office of Planning and Research, State of California

2017 Office of Planning and Research, General Plan Guidelines.

Appendix A:
SoundPLAN Data

ROADWAY SEGMENT AVERAGE DAILY TRAFFIC VOLUMES (ADTs)

#	ROADWAY	2024 ADT	2045 Existing General Plan	2045 Proposed General Plan	Speed (mph)	Speed (kmh)	Length (Feet)	Length (Meters)	Lane Length
1	Hovely Lane between East City Boundary and West City Boundary	15,630	15,100	15,080	50	80.5	65.0	19.8	9.9
2	Fred Waring Drive between Eldorado Drive and Cook Street	37,930	42,700	42,550	50	80.5	85.0	25.9	13.0
3	Cook Street between Fred Warning Drive and Highway 111	18,990	22,200	22,090	40	64.4	70.0	21.3	10.7
4	Eldorado Drive between Fred Waring Drive and Highway 111	4,870	5,400	5,340	40	64.4	72.0	21.9	11.0
5	Warner Trail between Fred Waring Drive and Miles Avenue	4,330	6,300	6,200	35	56.3	35.0	10.7	5.3
6	Highway 111 from Cook Street to Rancho Palmeras Drive	34,610	46,800	46,310	45	72.4	75.0	22.9	11.4
7	Miles Avenue from Warner Trail and Washington Street	6,970	10,500	10,340	50	80.5	60.0	18.3	9.1
8	Cook Street from Highway 111 and Fairway Drive	13,080	14,300	14,270	35	56.3	54.0	16.5	8.2
9	Eldorado Drive from Highway 111 to Fairway Drive	5,210	5,400	5,420	35	56.3	72.0	21.9	11.0
10	Highway 111 from Miles Avenue to Washington Street	37,330	48,200	47,830	45	72.4	62.0	18.9	9.4
11	Fairway Drive from Cook Street to Rancho Palmeras Drive	4,160	4,300	4,260	35	56.3	25.0	7.6	3.8
12	Portola Avenue from Mockingbird Trail to South City Limit	12,340	13,500	13,430	40	64.4	60.0	18.3	9.1
	SOUNDPLAN ONLY								
13	Highway 111 from Deep Canyon Road to Cook Street	38,805	50,447	50,447	45	72.4	90.0	27.4	13.7
14	Highway 111 from Rancho Palmeras Drive to Miles Avenue	43,843	56,996	56,996	45	72.4	62.0	18.9	9.4
15	Fred Waring Drive from Deep Canyon Road to Cook Street	35,124	39,339	39,339	45	72.4	62.0	18.9	9.4
16	Fred Waring Drive from Eldorado Drive to Palm Royale Drive	32,253	36,123	36,123	50	80.5	85.0	25.9	13.0
17	Cook Street from Fred Smith Way to Fred Waring Drive	31,754	36,517	36,517	40	64.4	75.0	22.9	11.4
18	Washington Avenue from Palm Royale Drive to Highway 111	42,444	50,084	50,084	50	80.5	98.0	29.9	14.9
19	Miles Avenue from Highway 111 to Washington Avenue	5,675	8,399	8,399	50	80.5	65.0	19.8	9.9

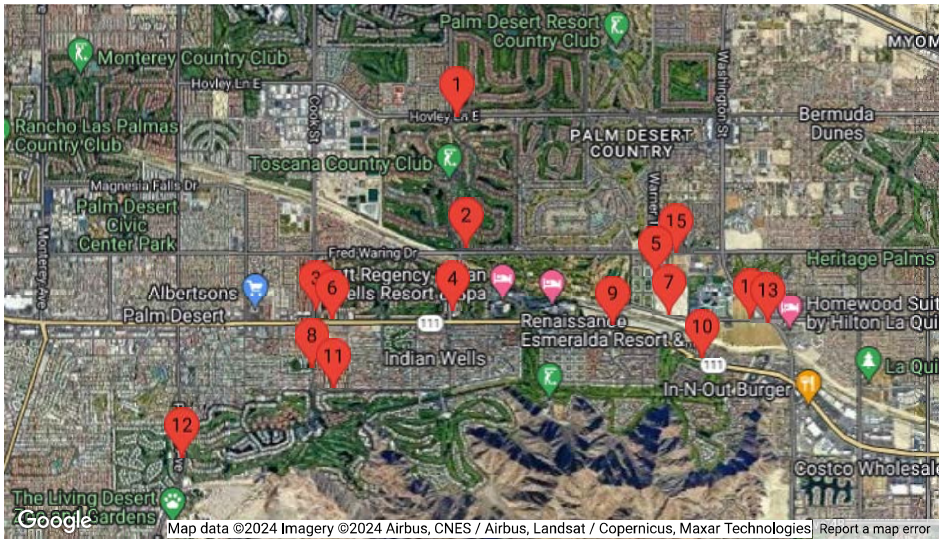
		2010	2011	2013	2015	2017	2024	2045
Hwy 111	E/O Deep Canyon	41592	45892	35093	34651	38805		
Hwy 111	E/O Cook	43947	37489	35215	38146	40933	34610	46310
Hwy 111	E/O El Dorado	38275	37814	31606	39393	43843		
Hwy 111	E/O Miles	30032	34834	29353	41433	45777	37330	47830
Fred Waring	E/O Portola	30046	30329	27907	31001	35406		
Fred Waring	W/O Cook	33213	29122	31788	32878	35124		
Fred Waring	E/O Cook	31992	29994	30583	33760	37054	37930	42550
Fred Waring	W/O El Dorado	34777	24278	32052	27852	31727	37930	42550
Fred Waring	W/O Warner	26172	26152	30517	38775	33481		
Fred Waring	W/O Washington	29397	25582	28997	28869	32253		
Fred Waring	E/O Washington	24492	20675	23047	23337	26792		
Cook	S/O Hovley	25796	24752	23117	27030	30982		
Cook	N/O Fred Waring	25669	23280	25143	27017	31754		
Cook	S/O Fred Waring	14157	13273	13578	14973	18770	18990	22090
Cook	S/O 111	5299	5858	4842	5047	5601	13080	14270
El Dorado	S/O Fred Waring	4485	3457	3666	7184	7580	4870	5340
El Dorado	S/O 111						5210	5420
Washington	N/O Fred Waring	37426	36776	37579	38900	42444		
Washington	S/O Fred Waring	40633	35799	36591	36783	41925		
Washington	N/O Miles	35791	32874	34340	34290	40194		
Washington	S/O Miles	32915	27422	35258	37370	45022		
Miles	N/O 111	4131	4697	5090	5240	5675		
Miles	W/O Warner			4763	4519	5166		
Miles	E/O Warner			6084	6445	7269	6970	10340
Miles	W/O Washington	6165	5427	7659	6279	6723	6970	10340
Miles	E/O Washington	9828	11302	9717	10340	10962		
Warner	N/O Fred Waring			4174	4563	4929		
Warner	S/O Fred Waring						4330	6200
Hovley							15630	15080
Fairway	E/O Cook						4160	4260
Portola	S/O Mockingboird						12340	13430

Appendix B:

Noise Measurement Data and Field Sheets

15-Minute Continuous Noise Measurement Datasheet

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Observations:**
Project: #/Name:	0462-2020-005	71F Clear skys winds 0-7MPH.
Site Address/Location:		
Date:	03/26/2024	
Field Tech/Engineer:	Jason Schuyler/ Claire Pincock	
Sound Meter:	XL2, NTI **SN:** A2A-08562-E0	
Settings:	A-weighted, slow, 1-sec, 15-minute interval	
Site Id:	ST1, ST10, ST11, ST12, ST13, ST2, ST3, ST5, ST6, ST7, ST8	



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15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location:

Site Id: ST1, ST10, ST11, ST12, ST13, ST2, ST3, ST5, ST6, ST7, ST8

Figure 1: ST1

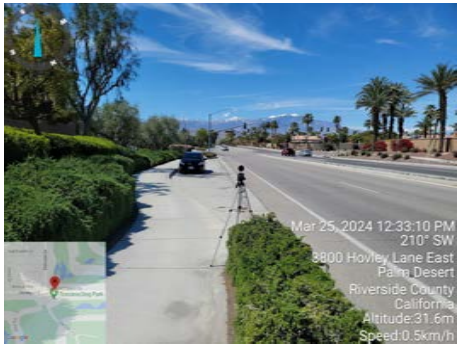


Figure 2: ST2

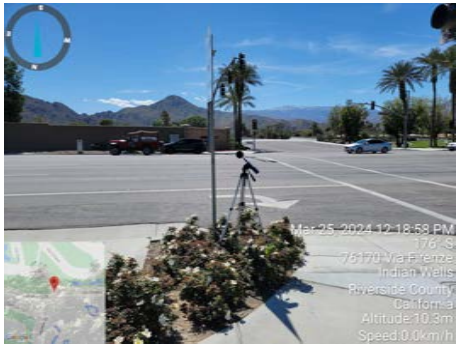


Figure 3: ST3



15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location:

Site Id: ST1, ST10, ST11, ST12, ST13, ST2, ST3, ST5, ST6, ST7, ST8

Figure 4: LT4



Figure 5: ST5

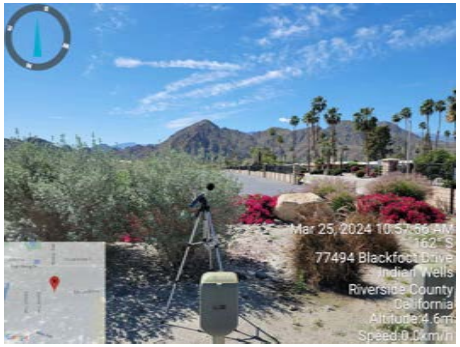
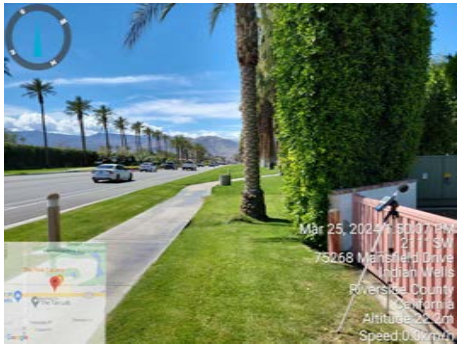


Figure 6: ST6



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15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location:

Site Id: ST1, ST10, ST11, ST12, ST13, ST2, ST3, ST5, ST6, ST7, ST8

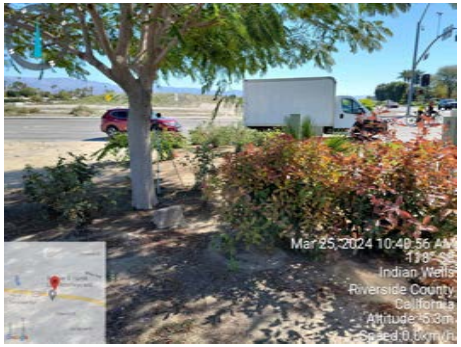
Figure 7: ST7



Figure 8: ST8



Figure 9: LT9



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15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location:

Site Id: ST1, ST10, ST11, ST12, ST13, ST2, ST3, ST5, ST6, ST7, ST8

Figure 10: ST10



Figure 11: ST11



Figure 12: ST12



15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location:

Site Id: ST1, ST10, ST11, ST12, ST13, ST2, ST3, ST5, ST6, ST7, ST8

Figure 13: ST13



Figure 14: LT14



Figure 15: LT15



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15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location:

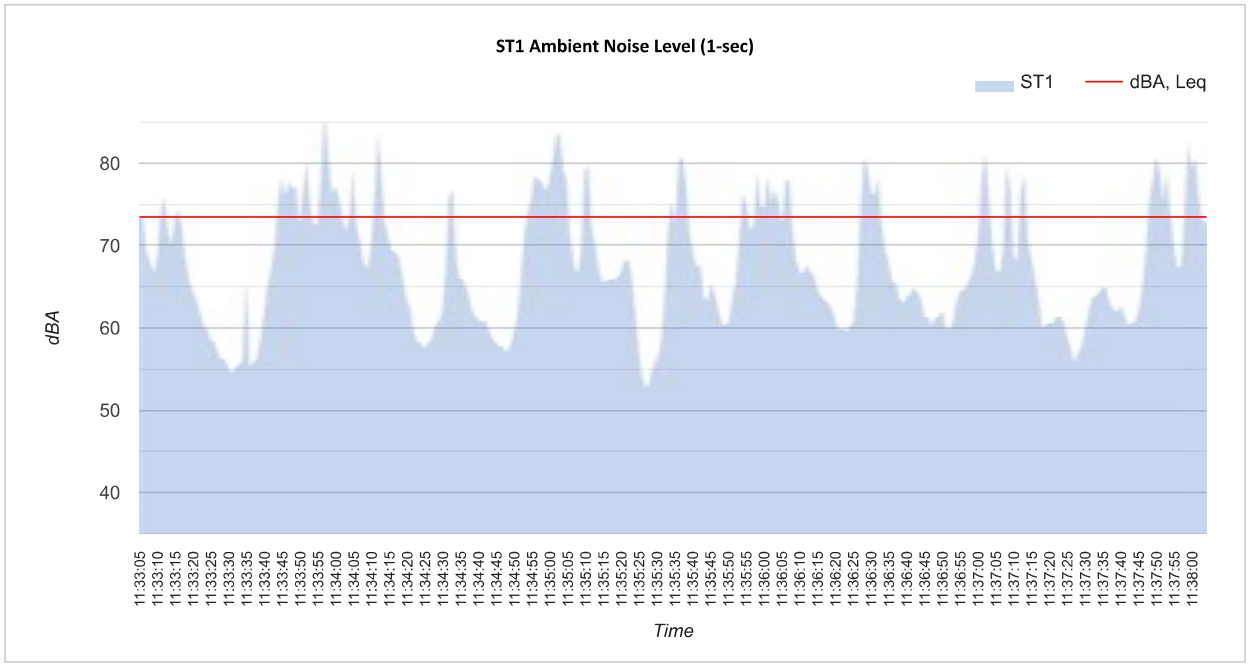
Site Id: ST1, ST10, ST11, ST12, ST13, ST2, ST3, ST5, ST6, ST7, ST8

Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST1	11:33 AM	11:38 AM	73.5	85.0	54.4	81.1	78.6	74	66.8	58.3
ST10	10:59 AM	11:05 AM	67.5	74.2	55.6	71.8	70.6	69	67	59.5
ST11	12:13 PM	12:19 PM	62.3	73.6	43.1	70.4	67.7	62.5	55.9	47.8
ST12	12:30 PM	12:36 PM	65.1	75.6	57.4	72	68.4	65	62.9	59.8
ST13	10:47 AM	10:53 AM	72.1	79.2	51.2	77.8	76.5	74.1	70.1	57.1
ST2	11:18 AM	11:23 AM	72.4	82.0	51.4	80.6	77.4	73	68.5	58.2
ST3	11:52 AM	11:57 AM	65.4	79.7	49.4	73.9	69	64.1	59.7	52.4
ST5	9:57 AM	10:03 AM	55.2	64.1	41.1	62.8	60.4	55.4	50.4	45.9
ST6	12:50 PM	12:56 PM	67.1	76.3	47.3	73	70.4	67.8	65.8	58.2
ST7	10:35 AM	10:41 AM	68	83.1	41.5	78.1	72.9	63.7	53	43.1
ST8	12:04 PM	12:10 PM	67.3	82.1	41.6	74.7	72.2	66.3	59.2	44.6

15-Minute Continuous Noise Measurement Datasheet - Cont.

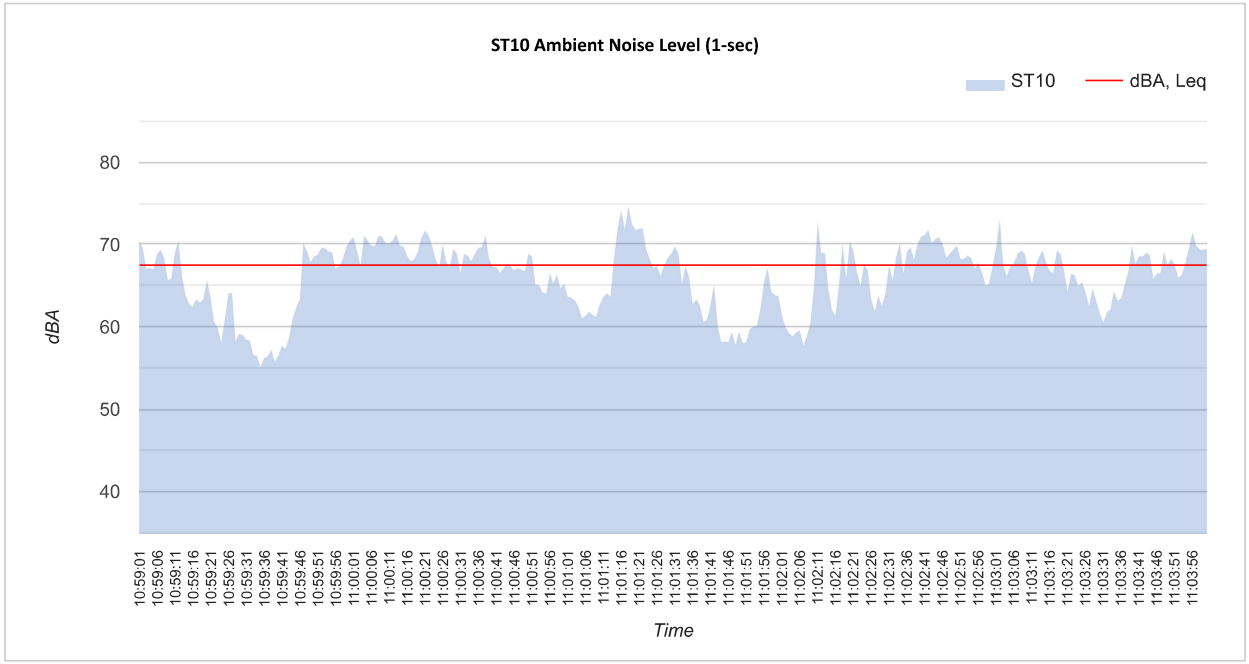
Project Name:	General Plan Noise and Vibration City of Indian	**Site Topo:**	Buildings 1-2 stories tall	**Noise Source(s) w/ Distance:**
Wells		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Address/Location:		**Ground Type:**	buildings, road with sound walls, and homes	
Site Id:	ST1			



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15-Minute Continuous Noise Measurement Datasheet - Cont.

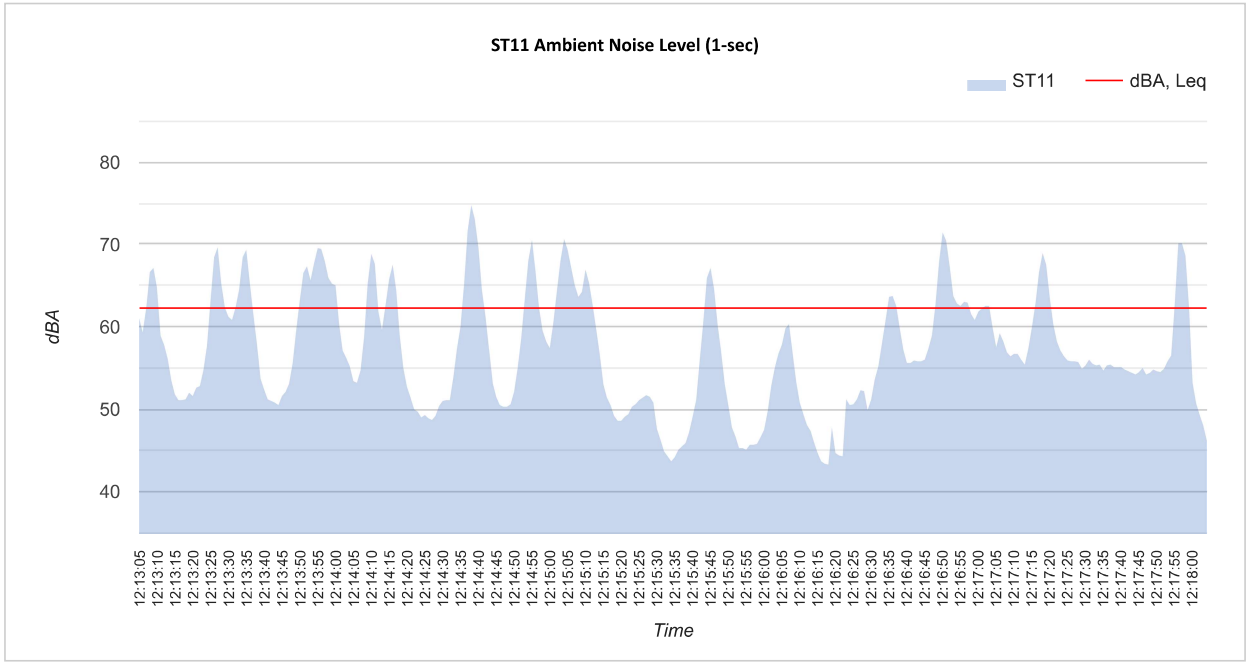
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories tall	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Id:	ST10	**Ground Type:**	buildings and asphalt	



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15-Minute Continuous Noise Measurement Datasheet - Cont.

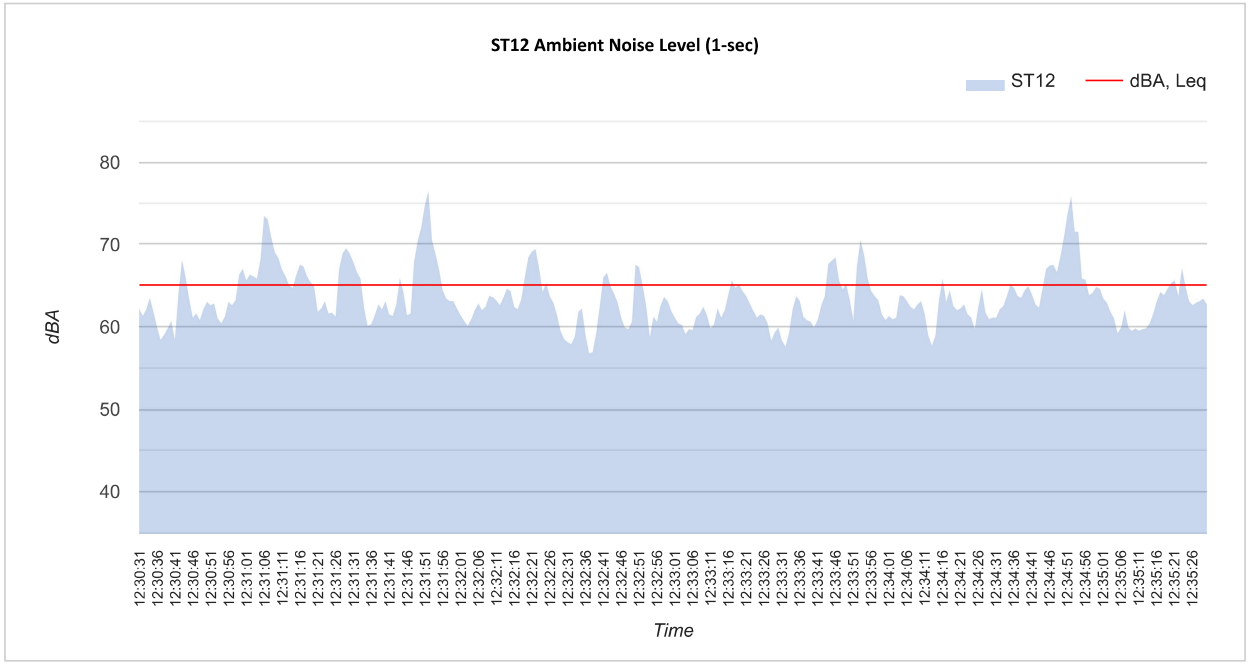
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories tall	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Id:	ST11	**Ground Type:**	Sandy soil and clay	



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15-Minute Continuous Noise Measurement Datasheet - Cont.

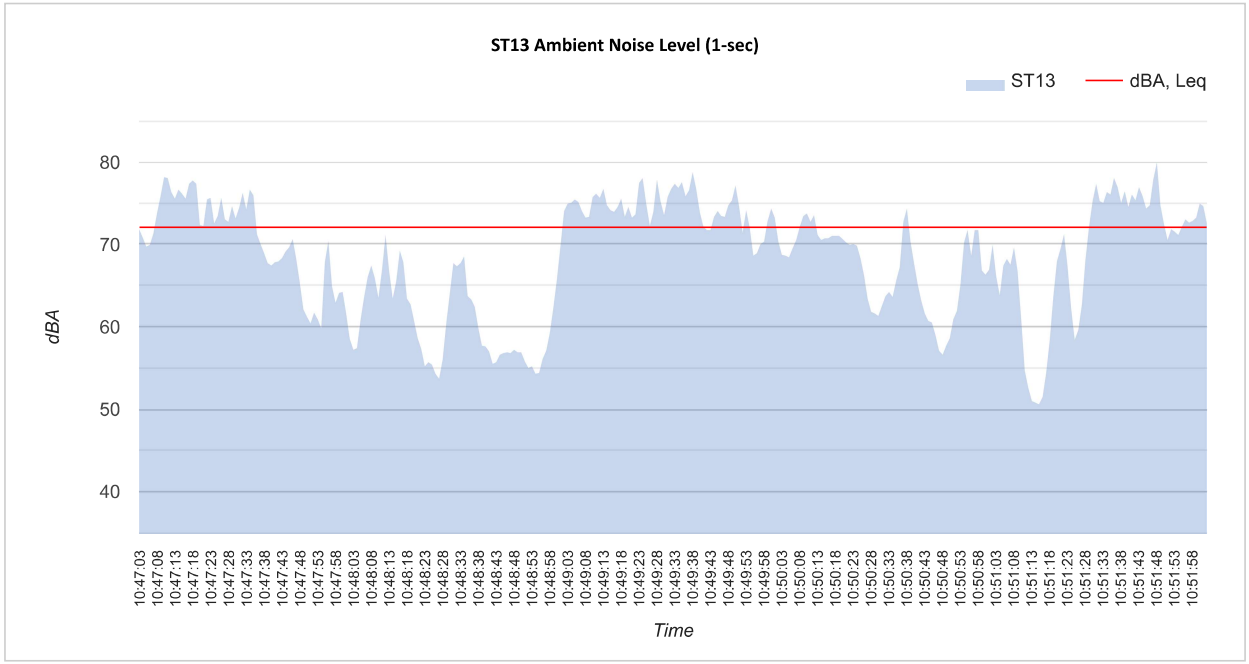
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories tall	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Id:	ST12	**Ground Type:**	Residential Homes	



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15-Minute Continuous Noise Measurement Datasheet - Cont.

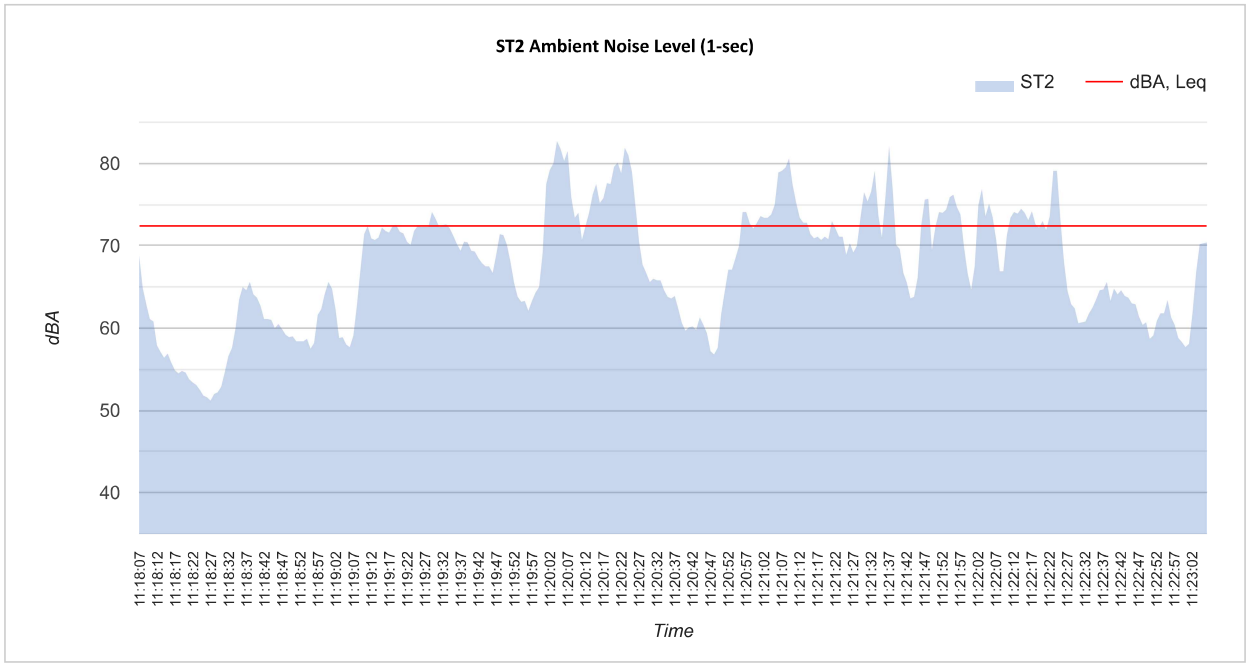
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories tall openi	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Id:	ST13	**Ground Type:**	Sandy soil and clay	



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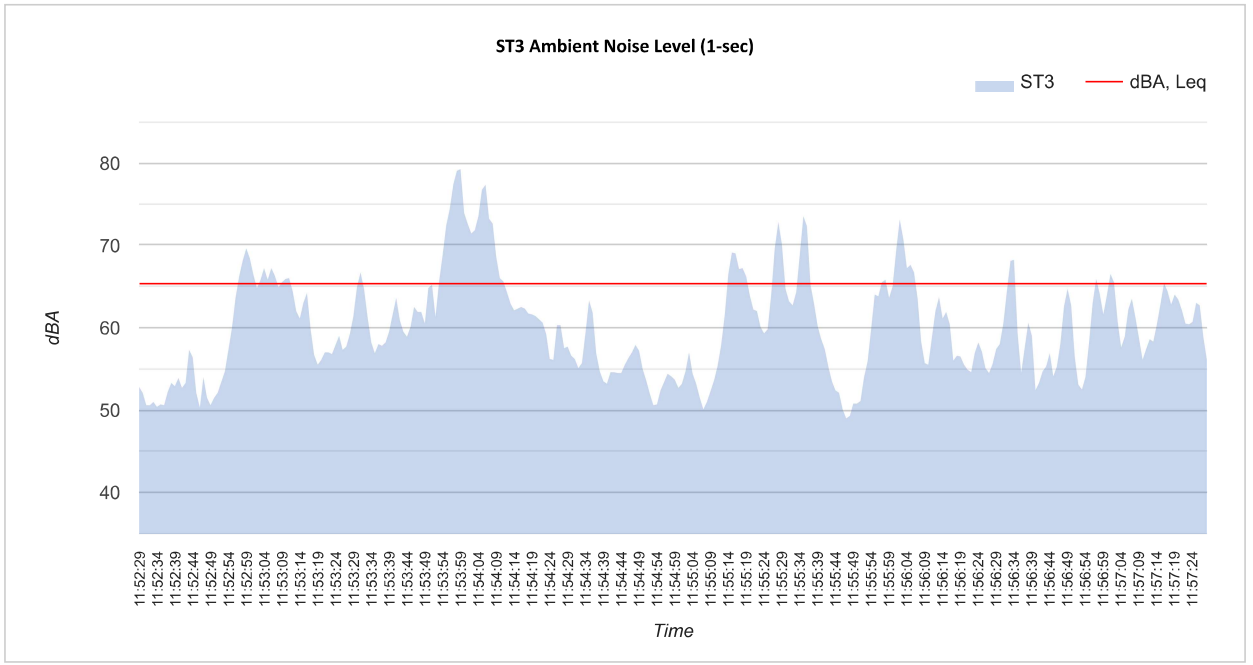
15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian	**Site Topo:**	Buildings 1-2 stories tall	**Noise Source(s) w/ Distance:**
Wells		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Address/Location:		**Ground Type:**	buildings, road with sound walls, and homes	
Site Id:	ST2			



15-Minute Continuous Noise Measurement Datasheet - Cont.

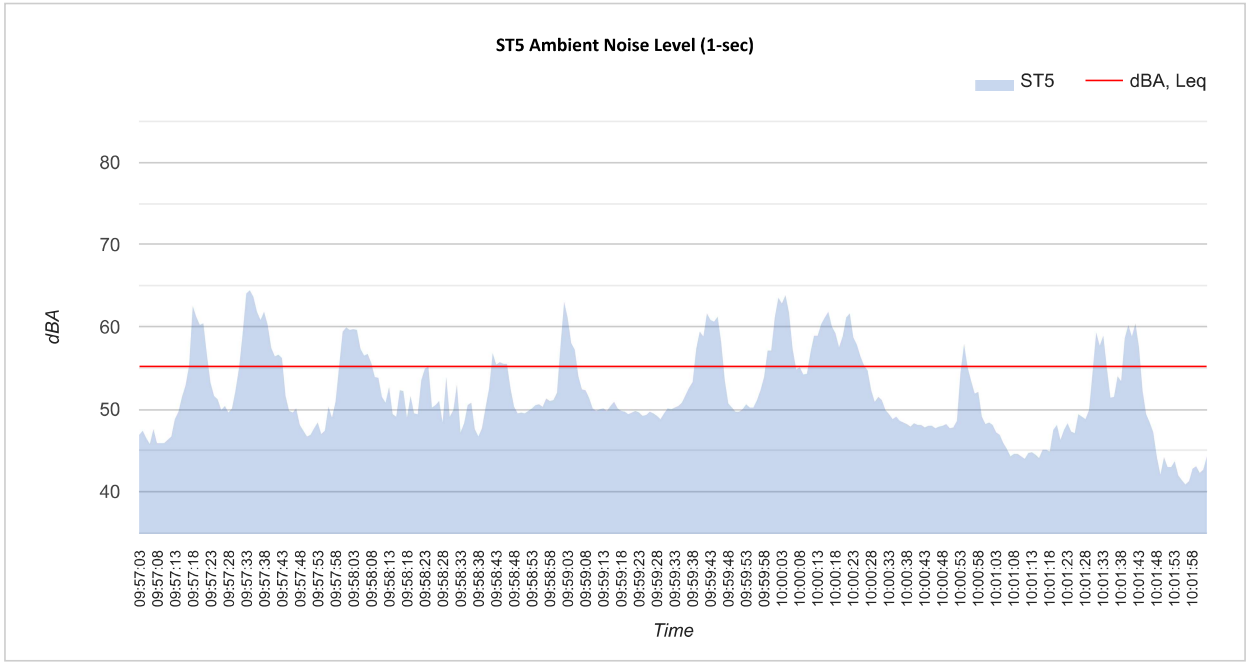
Project Name:	General Plan Noise and Vibration City of Indian	**Site Topo:**	Buildings 1-2 stories tall site	**Noise Source(s) w/ Distance:**
Wells		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Address/Location:		**Ground Type:**	buildings, road with sound walls, and homes	
Site Id:	ST3			



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont.

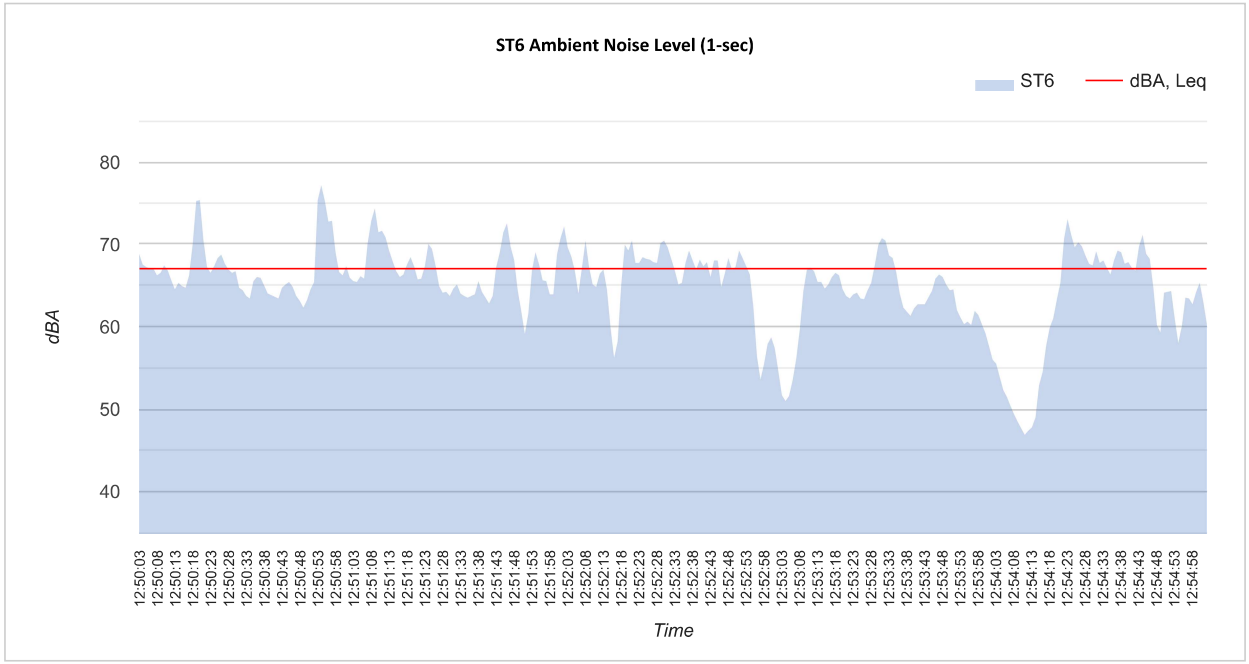
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories tall site	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and School noise
Site Id:	ST5	**Ground Type:**	Open Park	



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont.

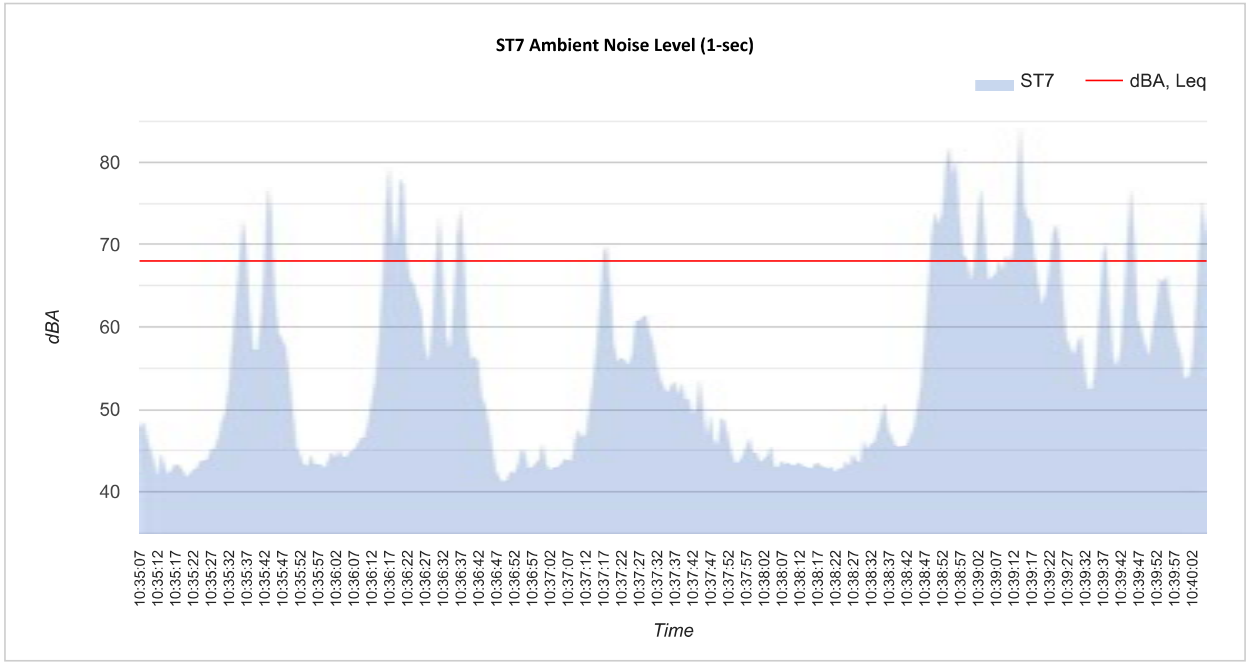
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories tall	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Id:	ST6	**Ground Type:**	Sandy soil and clay	



MD ACOUSTICS

15-Minute Continuous Noise Measurement Datasheet - Cont.

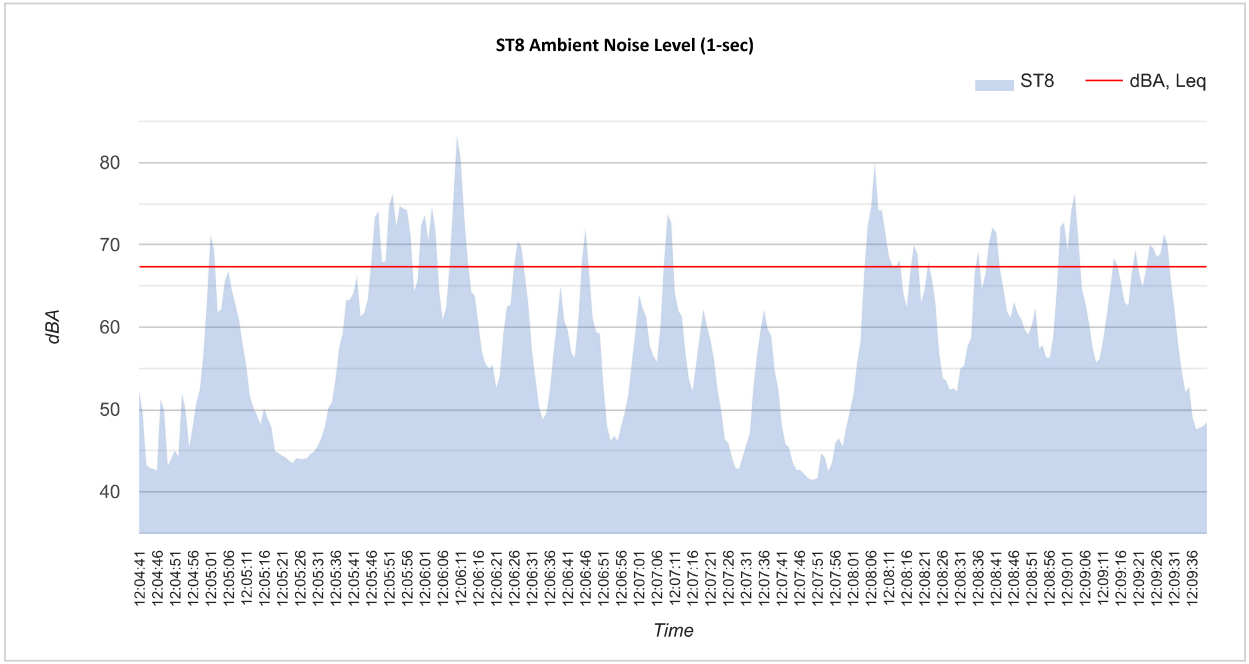
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	open Lots	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Id:	ST7	**Ground Type:**	Sandy soil and clay	



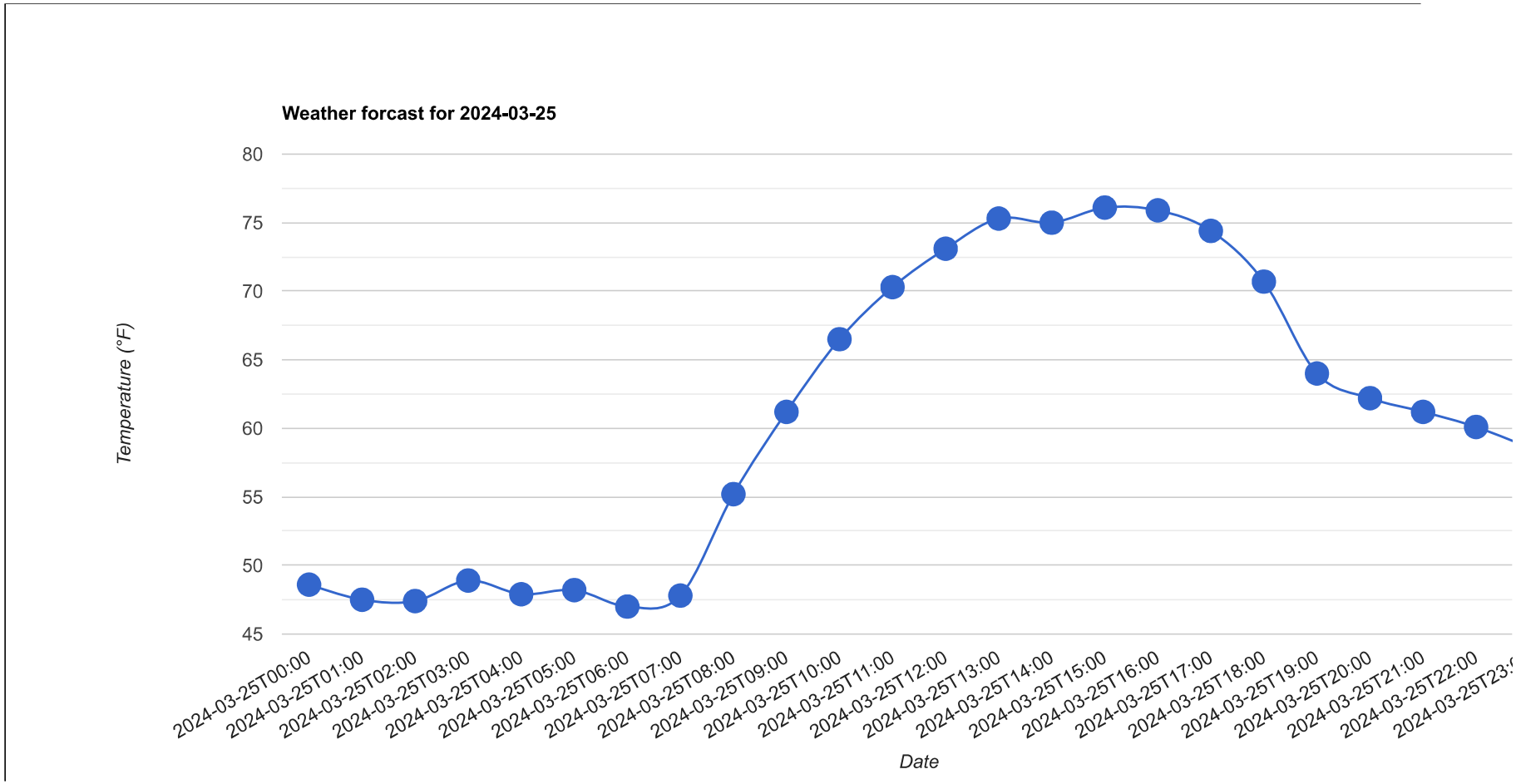
MD ACOUSTICS

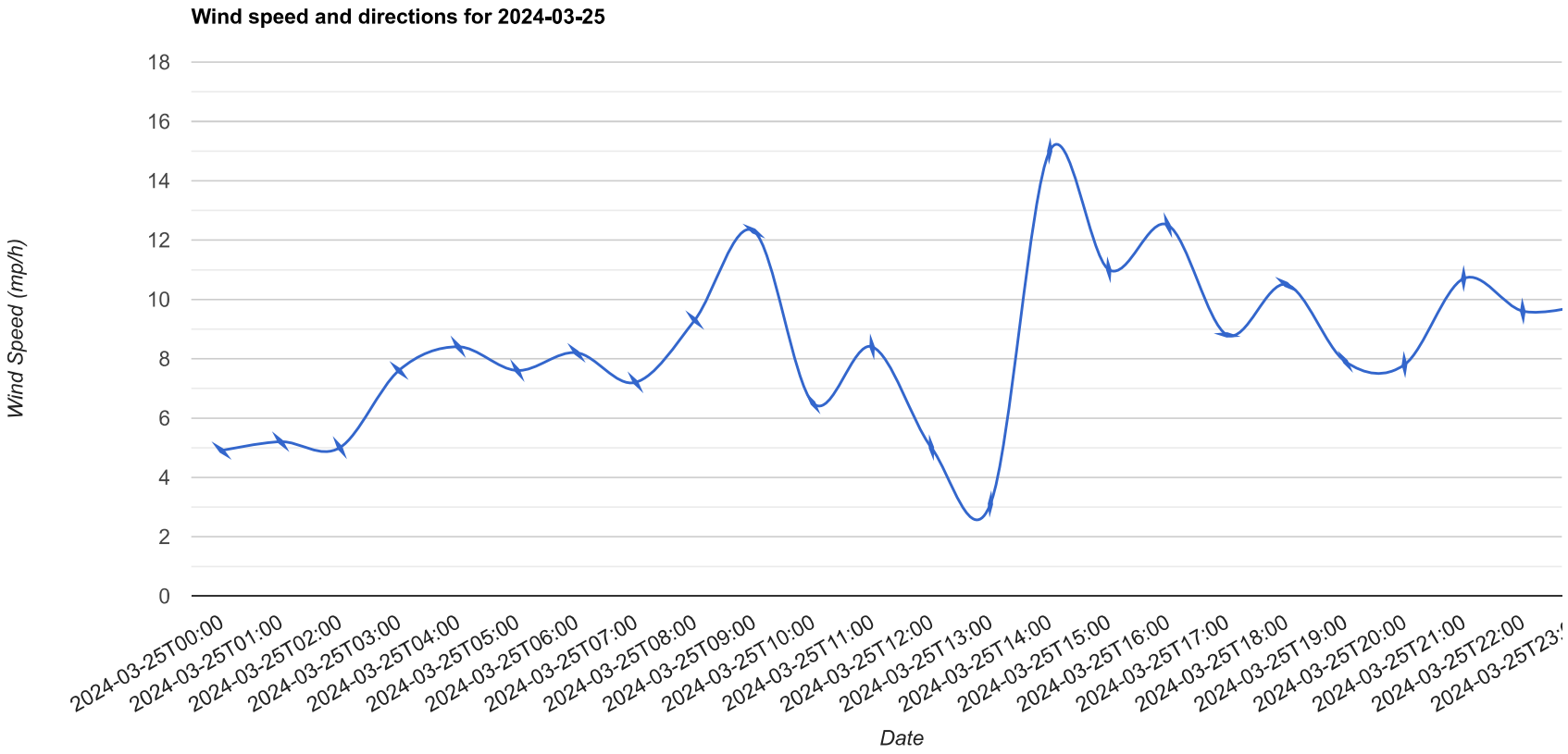
15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories tall	**Noise Source(s) w/ Distance:**
Site Address/Location:		**Meteorological Cond.:**	72F Winds 0-5mph	road noise and residential noise
Site Id:	ST8	**Ground Type:**	buildings and asphalt	



MD ACOUSTICS


Weather forcast for 2024-03-25
Temperature (°F)
80
75
70
65
60
55
50
45
2024-03-25T00:00
2024-03-25T01:00
2024-03-25T02:00
2024-03-25T03:00
2024-03-25T04:00
2024-03-25T05:00
2024-03-25T06:00
2024-03-25T07:00
2024-03-25T08:00
2024-03-25T09:00
2024-03-25T10:00
2024-03-25T11:00
2024-03-25T12:00
2024-03-25T13:00
2024-03-25T14:00
2024-03-25T15:00
2024-03-25T16:00
2024-03-25T17:00
2024-03-25T18:00
2024-03-25T19:00
2024-03-25T20:00
2024-03-25T21:00
2024-03-25T22:00
Date



Source: Global Forecast System (GFS) weather forcast model

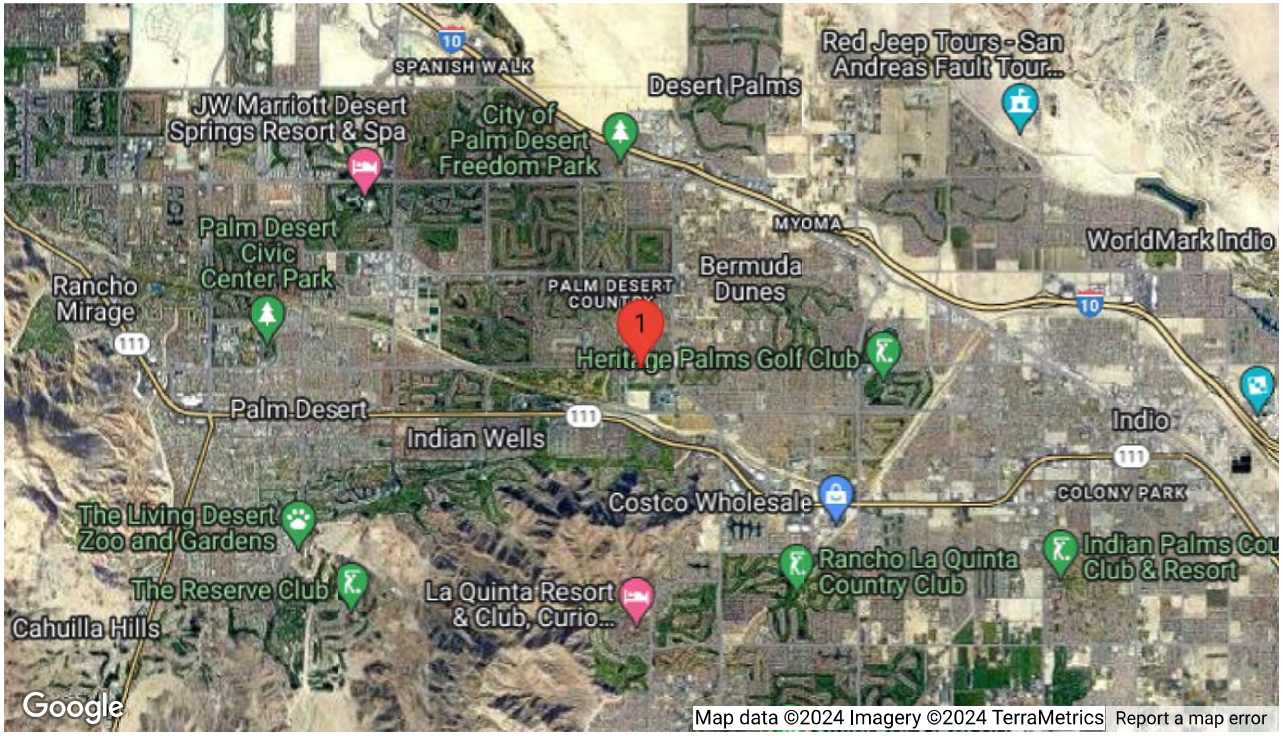
24-Hour Continuous Noise Measurement Datasheet

Project Name:	General Plan Noise and Vibration City of Indian Wells
Project: #/Name:	0462-2020-005
Site Address/Location:	Indian Wells, CA
Date:	04/25/2024
Field Tech/Engineer:	Jason Schuyler/ Claire Pincock

Site Observations:

Clear Sky's temps in the 70F. LT4 and LT15 were retaken on 4/10 after a data loss in the original files.

Sound Meter:	Piccolo-II, Soft dB	**SN:**	PO222022803
Settings:	A-weighted, slow, 1-min, 24-hour duration		
Site Id:	LT14, LT15, LT4, LT9		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location: Indian Wells, CA

Site Id: LT14, LT15, LT4, LT9

Figure 1: LT4



Figure 2: LT9



Figure 3: LT14



Figure 4: LT15



24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4	
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**	
Site Id:	LT14	**Meteorological Cond.:**	70F Sunny	road noise and residential noise	
		Ground Type:	Sandy soil and clay		

Table 1: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
3/26/2024	1:48 PM	2:48 PM	61.2	75.6	40.4	65.6	65	62	61	54.7
3/26/2024	2:48 PM	3:48 PM	61.3	78.1	39.5	66.5	63.8	62.3	60.5	56.4
3/26/2024	3:48 PM	4:48 PM	61.2	80.2	43.7	66.5	64.8	62.1	59.6	55.8
3/26/2024	4:48 PM	5:48 PM	60.7	76.1	42.2	64.6	64.2	61.7	59.5	55
3/26/2024	5:48 PM	6:48 PM	59.4	78	42.6	64.7	62.5	60.3	58.4	54.9
3/26/2024	6:48 PM	7:48 PM	57.4	78.1	43.4	61.9	60.3	57.9	56.1	52.3
3/26/2024	7:48 PM	8:48 PM	57.3	81.1	42.3	60.6	60	58.4	56.3	49.5
3/26/2024	8:48 PM	9:48 PM	57.7	81.2	39.7	64.8	60.9	58	55.2	45.8
3/26/2024	9:48 PM	10:48 PM	53.8	71.4	38.5	58.6	58.1	55.5	52.7	45
3/26/2024	10:48 PM	11:48 PM	51.8	73	35.3	60.1	56.9	52.8	44.7	40.6
3/26/2024	11:48 PM	12:48 AM	49.4	71.6	35.1	58.3	55.3	45.7	40.8	38.9
3/27/2024	12:48 AM	1:48 AM	47.4	69.3	35.6	56.2	53.3	43.7	41.9	39
3/27/2024	1:48 AM	2:48 AM	46.6	72.3	34.2	57.9	46.6	39.9	37.7	35.6
3/27/2024	2:48 AM	3:48 AM	45.9	70	34.2	56.9	49.3	39.6	38.2	36.3
3/27/2024	3:48 AM	4:48 AM	49.7	71.6	36.2	58.6	54.1	49.3	45.6	41.3
3/27/2024	4:48 AM	5:48 AM	54.6	72	40.2	59.6	58.3	55.7	53.5	46.6
3/27/2024	5:48 AM	6:48 AM	58	76.1	43.3	63.7	61.5	59	56.8	50.8
3/27/2024	6:48 AM	7:48 AM	61.8	76.3	49.2	66	64.6	63.1	60.9	56.6
3/27/2024	7:48 AM	8:48 AM	63.3	76.3	43.4	66.4	65.9	64.6	62.8	58.6
3/27/2024	8:48 AM	9:48 AM	61.5	73.4	42.3	64.5	63.7	62.7	61.4	57.8
3/27/2024	9:48 AM	10:48 AM	60.6	79	38.7	65.6	64.4	61.2	59.9	56.1
3/27/2024	10:48 AM	11:48 AM	60.2	79.4	40.9	64.7	62.8	61.2	59.1	56.4
3/27/2024	11:48 AM	12:48 PM	59.8	76.1	39.4	64	62.8	60.7	59.2	54.6
3/27/2024	12:48 PM	1:48 PM	61.4	74.3	41.9	66.3	64.2	61.8	60	56.1
3/27/2024	1:48 PM	1:54 PM	60.5	70.3	45.1	62.7	62.2	61.1	60.4	58.2

	DNL	61.4

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 2 of 4	
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**	
Site Id:	LT15	**Meteorological Cond.:**	70F Sunny	road noise and residential noise	
		Ground Type:	Sandy soil and clay		

Table 2: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
4/10/2024	5:58 PM	6:58 PM	76.5	94.9	46	80.1	78.8	77.7	76.9	69.9
4/10/2024	6:58 PM	7:58 PM	75.3	89.1	43.6	78.8	78.1	77.1	74.6	69.2
4/10/2024	7:58 PM	8:58 PM	74.9	90.9	46.1	78	77.6	75.8	74.6	70.8
4/10/2024	8:58 PM	9:58 PM	74.2	96.1	46.6	78	76.3	75.7	73.4	69.3
4/10/2024	9:58 PM	10:58 PM	73.1	97.2	40.6	76.7	75.5	73.5	71.9	67.7
4/10/2024	10:58 PM	11:58 PM	68.6	89	38	73.2	72.1	70.4	66.8	62.7
4/10/2024	11:58 PM	12:58 AM	65.7	87.3	36.7	71.4	70.5	67.3	62.5	48.7
4/11/2024	12:58 AM	1:58 AM	64.2	88.8	35.8	71.3	68.9	65.4	61.1	40.4
4/11/2024	1:58 AM	2:58 AM	62.9	84	35.7	69.3	67.6	64.1	59.1	37.9
4/11/2024	2:58 AM	3:58 AM	62	84.9	36	69.7	66.8	63.3	57	38
4/11/2024	3:58 AM	4:58 AM	67.7	89.9	35.6	72.3	71.2	69	66.6	56.7
4/11/2024	4:58 AM	5:58 AM	70.2	89.1	43	74.4	73.3	71.8	69.7	63
4/11/2024	5:58 AM	6:58 AM	73.8	89.3	44.3	78.3	76.5	75	73.1	69.8
4/11/2024	6:58 AM	7:58 AM	76.7	95	47.8	81.1	79.4	78	76.1	72.1
4/11/2024	7:58 AM	8:58 AM	76.8	88.8	51	79.5	79.2	78.3	76.4	72.4
4/11/2024	8:58 AM	9:58 AM	75.4	92.2	47	78.7	78.2	77	75.1	70.2
4/11/2024	9:58 AM	10:58 AM	75.1	87.5	42	77.7	77.1	76.2	75.3	70.9
4/11/2024	10:58 AM	11:58 AM	75.1	89.8	42.1	78.6	77.1	76.3	74.8	71.2
4/11/2024	11:58 AM	12:58 PM	75.3	87.3	44.4	78.2	77.4	76.2	75	72.7
4/11/2024	12:58 PM	1:58 PM	75.6	90.1	44	78.4	77.9	76.6	74.9	73.1
4/11/2024	1:58 PM	2:58 PM	76.8	93.2	45.5	80	78.8	77.7	76.7	72.7
4/11/2024	2:58 PM	3:58 PM	76.8	90.9	44	79.5	78.6	77.9	76.5	74.6
4/11/2024	3:58 PM	4:58 PM	77.6	90.9	40.5	80.3	79.5	78.5	77.3	74.7
4/11/2024	4:58 PM	5:58 PM	77.7	92.1	44.4	80.7	80	78.7	77.5	74.4
4/11/2024	5:58 PM	6:58 PM	77	92.1	46.4	80.1	79.6	78.3	76.7	73
4/11/2024	6:58 PM	7:58 PM	75.6	95.5	44.2	79.5	77.9	76.6	75.2	71.4
4/11/2024	7:58 PM	8:58 PM	75.3	91.9	46.9	79.6	77.7	76.3	74.9	69.2
4/11/2024	8:58 PM	9:58 PM	74.1	89.5	47.6	77.3	76.3	75	74.2	70.9
4/11/2024	9:58 PM	10:58 PM	73.5	96.6	44.8	77.2	75.4	74	73	69.3
4/11/2024	10:58 PM	11:58 PM	71.2	93.7	41.2	76	73.9	72.1	70.5	63.3

4/11/2024	11:58 PM	12:58 AM	67.7	86.4	39	72.2	71.3	68.9	66.4	62.9
4/12/2024	12:58 AM	1:58 AM	66.3	86	37.3	72.6	70.5	67	64.4	58
4/12/2024	1:58 AM	2:58 AM	63.7	86.4	34.5	71.2	67.5	64.9	60.2	41.7
4/12/2024	2:58 AM	3:58 AM	63.7	85.2	36	69.1	68.3	65.2	60.7	40.6
4/12/2024	3:58 AM	4:58 AM	66.8	87.4	34.3	72.4	71.3	67.7	64.9	51.8
4/12/2024	4:58 AM	5:58 AM	71.3	97.4	39.3	76	74.2	71.5	69.8	63.8
4/12/2024	5:58 AM	6:16 AM	71	88.8	50.1	73.4	73.1	71.9	71.1	67.5

	DNL	78

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name: General Plan Noise and Vibration City of Indian Wells

Site Address/Location: Indian Wells, CA

Site Id: LT4

Site Topo: Buildings 1-2 stories tall

Meteorological Cond.: 70F Sunny Winds 0-10 Mph

Ground Type: Sandy and clay

Day: 3 of 4

Noise Source(s) w/ Distance: Road and commercial noise

Table 3: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
4/10/2024	6:06 PM	7:05 PM	59.1	80.3	39.8	65.5	62.6	59.7	57.9	50.7
4/10/2024	7:05 PM	8:05 PM	60.1	79.0	40.2	63.6	62.5	61	59.8	52.6
4/10/2024	8:05 PM	9:05 PM	56.1	71.6	36.9	60.2	59.4	57.5	55.9	47.3
4/10/2024	9:05 PM	10:05 PM	56.9	73.8	42.1	61.2	60.4	58.4	55.9	50.3
4/10/2024	10:05 PM	11:05 PM	56.4	72.1	42.7	61.3	60.7	57.4	55.1	50.1
4/10/2024	11:05 PM	12:05 AM	52.4	72.4	38.0	59.2	56.9	53.1	49.4	43.7
4/11/2024	12:05 AM	1:05 AM	49.2	74.2	36.3	56.7	55	46.5	44.1	42.2
4/11/2024	1:05 AM	2:05 AM	47.2	69.2	34.5	57.6	48	45.3	43.2	39.2
4/11/2024	2:05 AM	3:05 AM	43.7	64.3	33.3	49.8	46.8	43.8	41.9	37.8
4/11/2024	3:05 AM	4:05 AM	52.9	81.0	34.0	58.1	54.8	50.9	44.4	38.5
4/11/2024	4:05 AM	5:05 AM	52	72.6	34.9	59.6	57.2	51.6	48.7	43.8
4/11/2024	5:05 AM	6:05 AM	55.2	73.0	39.3	60.3	58.8	56.6	53.6	48.5
4/11/2024	6:05 AM	7:05 AM	60.7	76.2	46.6	66	63.3	62.1	59.8	55.8
4/11/2024	7:05 AM	8:05 AM	62.8	80.8	47.8	67.2	65.7	64.3	61.7	57.6
4/11/2024	8:05 AM	9:05 AM	62.3	77.4	43.4	65.7	64.7	63.3	62.2	58.7
4/11/2024	9:05 AM	10:05 AM	62.3	83.9	41.3	67.9	65.6	63.1	60.8	56.9
4/11/2024	10:05 AM	11:05 AM	61.7	82.5	39.1	68.6	64	62.3	60	54.8
4/11/2024	11:05 AM	12:05 PM	59.9	74.6	39.1	63.1	62.4	61.1	59.6	54.6
4/11/2024	12:05 PM	1:05 PM	60.1	80.8	40.5	64.8	62.7	61.3	59.2	54.3
4/11/2024	1:05 PM	2:05 PM	60	77.1	38.5	64.3	62.8	61.4	59.3	53.6
4/11/2024	2:05 PM	3:05 PM	61	75.9	38.0	65	63.8	62.4	60.3	54.9
4/11/2024	3:05 PM	4:05 PM	61.5	86.6	39.6	66.5	63.8	62.4	59.8	54.1
4/11/2024	4:05 PM	5:05 PM	60.6	78.9	37.3	66.9	62.6	61.1	59.7	55.5
4/11/2024	5:05 PM	6:05 PM	59.4	75.9	39.1	64.7	63.1	60.3	58.6	51.5
4/11/2024	6:05 PM	7:05 PM	59.6	87.8	38.9	63	61	59.2	56.9	48.8
4/11/2024	7:05 PM	8:05 PM	56.9	73.4	39.4	61.4	59.8	58.2	56.1	49.6
4/11/2024	8:05 PM	9:05 PM	57.3	72.9	39.1	61	60.4	58.6	56.9	50.8
4/11/2024	9:05 PM	10:05 PM	57.9	74.2	40.2	62	60.9	59.2	57.5	51.8
4/11/2024	10:05 PM	11:05 PM	57.5	76.2	44.0	62.4	60.9	58.6	56.6	51.2
4/11/2024	11:05 PM	12:05 AM	55	70.4	39.7	59.5	58.4	56.7	53.8	48.6

4/12/2024	12:05 AM	1:05 AM	53.5	72.3	37.7	59.3	57.2	55	52	46.3
4/12/2024	1:05 AM	2:05 AM	52.9	73.7	36.4	59.2	57.8	54.2	48.7	43.7
4/12/2024	2:05 AM	3:05 AM	49.1	73.3	35.9	55.2	54	47.5	45	42.2
4/12/2024	3:05 AM	4:05 AM	49.1	70.1	33.9	56.3	54.3	50.8	44.3	40
4/12/2024	4:05 AM	5:05 AM	51.5	69.5	34.8	58.4	57.2	50.9	48.2	42.8
4/12/2024	5:05 AM	6:05 AM	57.6	81.6	39.0	61.6	59.7	57.9	55.4	50
4/12/2024	6:05 AM	6:23 AM	57.1	71.9	44.3	60.9	59.9	57.7	57	51.9

	DNL	62.6

24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 4 of 4	
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**	
Site Id:	LT9	**Meteorological Cond.:**	70F Sunny	road noise and residential noise	
		Ground Type:	Sandy soil and clay		

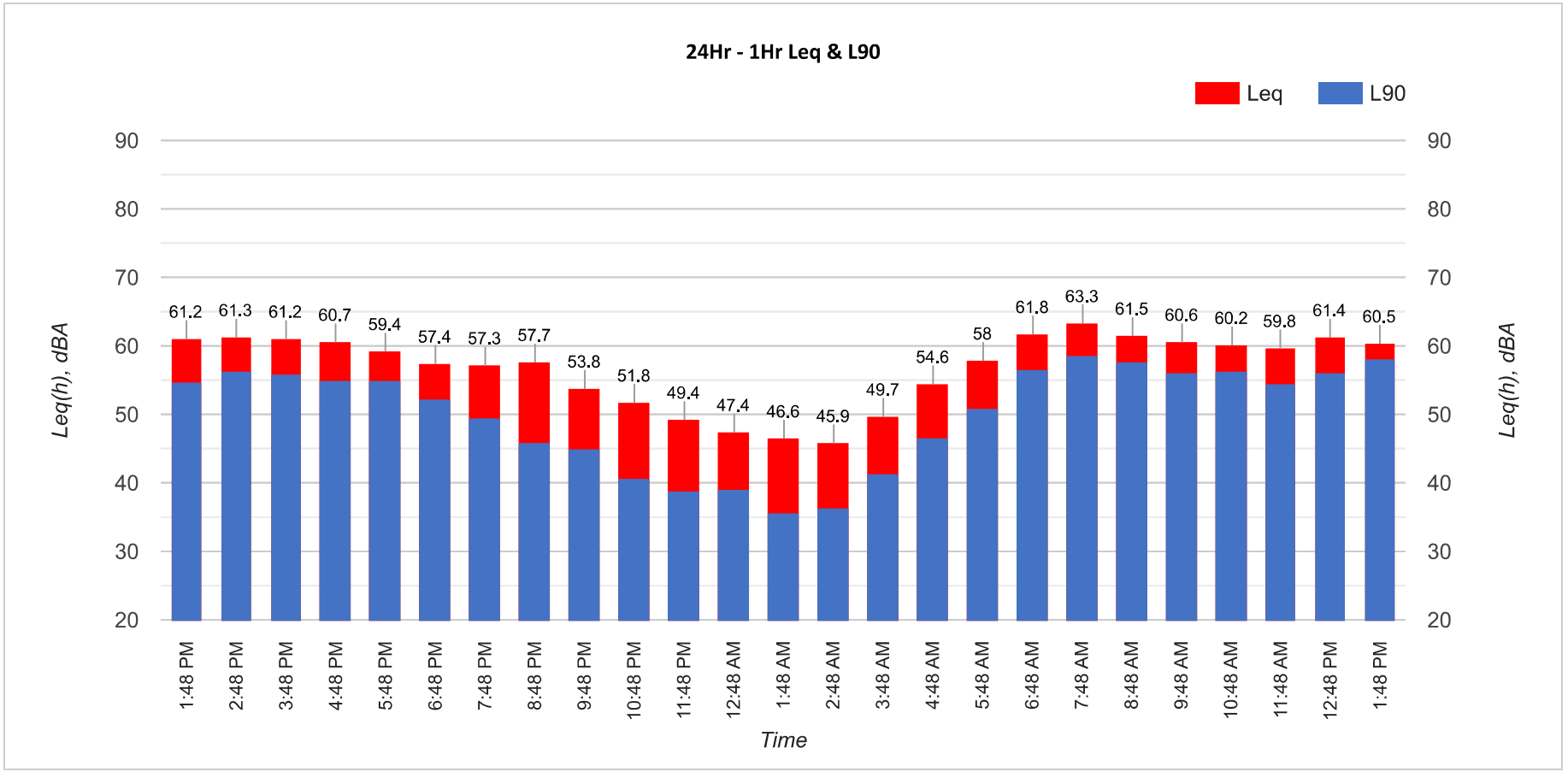
Table 4: Baseline Noise Measurement Summary

Date	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
3/25/2024	10:55 AM	11:57 AM	74.6	92	38.2	79.7	78.9	76.9	72.5	52.3
3/25/2024	11:57 AM	12:57 PM	75.9	88	38.5	79.4	78.5	77.8	75.3	69.9
3/25/2024	12:57 PM	1:57 PM	76	95.4	40.9	80	79.1	78	74.8	68.4
3/25/2024	1:57 PM	2:57 PM	77.4	95.2	42	80.7	80.1	79.1	77.1	72.1
3/25/2024	2:57 PM	3:57 PM	77.7	92.5	47	81.6	80.5	79.6	77.4	71.9
3/25/2024	3:57 PM	4:57 PM	77.9	93.4	45.2	81.6	81	80	77.3	71.2
3/25/2024	4:57 PM	5:57 PM	77.9	90.8	45	81	80.5	79.8	77.7	72.4
3/25/2024	5:57 PM	6:57 PM	76.8	90.7	45.3	80.7	79.6	78.9	76.4	69.9
3/25/2024	6:57 PM	7:57 PM	75.9	95.7	45.9	79.3	78.3	77.6	75.2	70.1
3/25/2024	7:57 PM	8:57 PM	75.1	91.5	46.9	79.7	78.2	76.6	73.7	70.8
3/25/2024	8:57 PM	9:57 PM	74.7	89.6	44.9	77.7	77.1	75.5	74.4	71.7
3/25/2024	9:57 PM	10:57 PM	72.6	87.7	43	77	76.6	73.9	71.7	65.8
3/25/2024	10:57 PM	11:57 PM	69.7	88.4	39	74.7	73.9	71.7	68.1	59.3
3/25/2024	11:57 PM	12:57 AM	65.5	86	36.9	71.3	69.5	66.9	64.9	44.7
3/26/2024	12:57 AM	1:57 AM	60.2	81.1	35.2	67.5	65	61.9	55.5	39.5
3/26/2024	1:57 AM	2:57 AM	62.5	86.1	38.9	70.2	67.5	64.6	55.7	44.8
3/26/2024	2:57 AM	3:57 AM	62.5	84	36.4	69.7	67.7	63.5	58.8	40.3
3/26/2024	3:57 AM	4:57 AM	67.1	86	39.3	72.9	71.1	68.7	65.6	52.6
3/26/2024	4:57 AM	5:57 AM	70.5	88.7	40.1	74.6	74.1	72	69.1	64.1
3/26/2024	5:57 AM	6:57 AM	73.5	88.3	41.7	77.5	76.4	74.5	72.5	68.7
3/26/2024	6:57 AM	7:57 AM	76.9	91.8	51.8	80.6	79.9	78.4	75.9	72.2
3/26/2024	7:57 AM	8:57 AM	77.4	89.8	52	81	80.6	78.9	77	72.1
3/26/2024	8:57 AM	9:57 AM	76.2	90.9	44	79.6	79.2	77.9	75.9	69.9
3/26/2024	9:57 AM	10:57 AM	75.4	87.7	41.4	79.2	78.7	77.3	74.6	68.9
3/26/2024	10:57 AM	11:57 AM	75.7	89.2	45.4	79.4	78.6	77.6	75.4	68.9
3/26/2024	11:57 AM	12:57 PM	76.2	93.4	40.8	80.1	79	78	75.8	69
3/26/2024	12:57 PM	1:23 PM	76.1	88	48.6	79	78.6	78.1	75.4	70.7

	DNL	77.6

24-Hour Continuous Noise Measurement Datasheet - Cont.

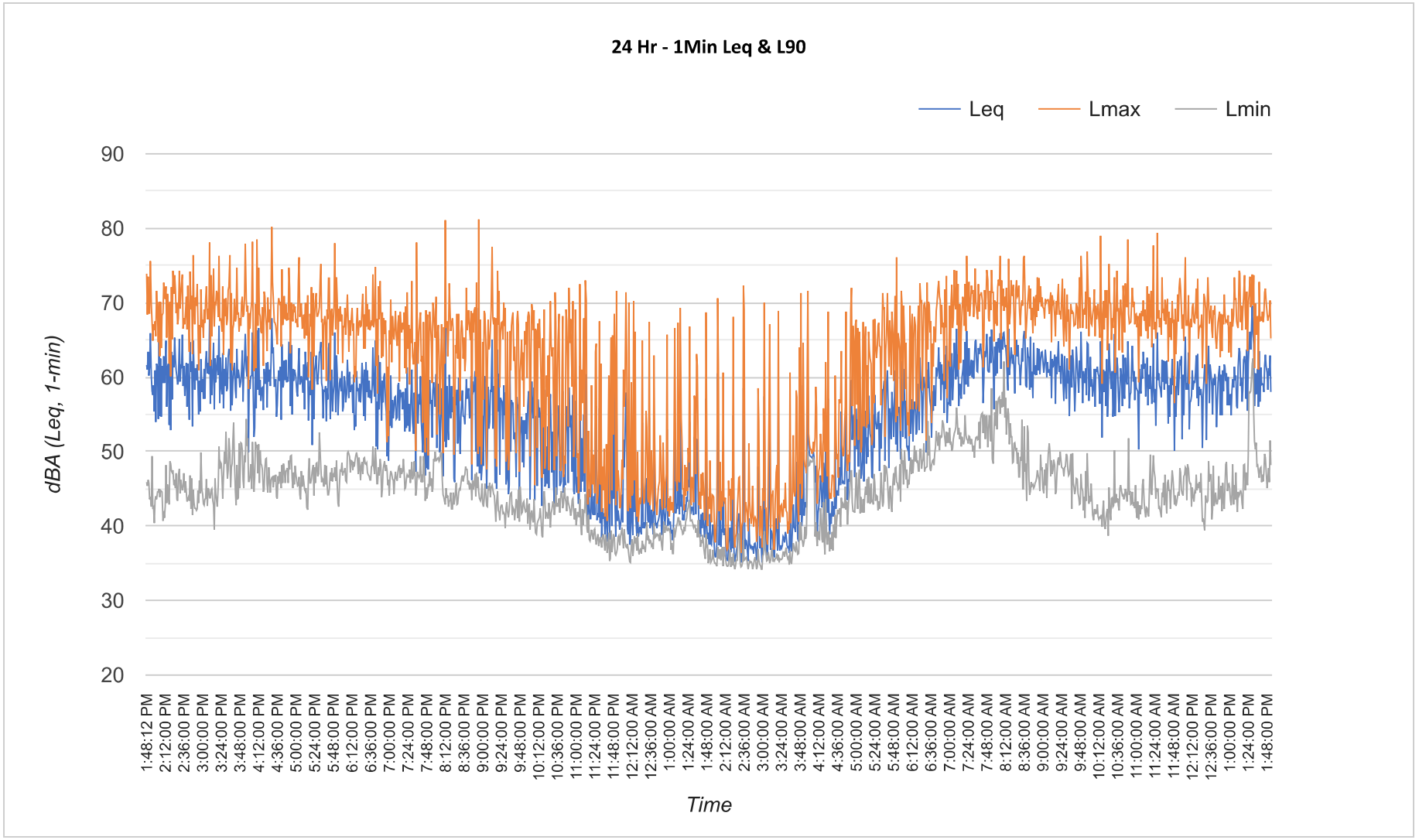
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**
Site Id:	LT14	**Meteorological Cond.:**	70F Sunny	road noise and residential noise
		Ground Type:	Sandy soil and clay	



MD ACOUSTICS

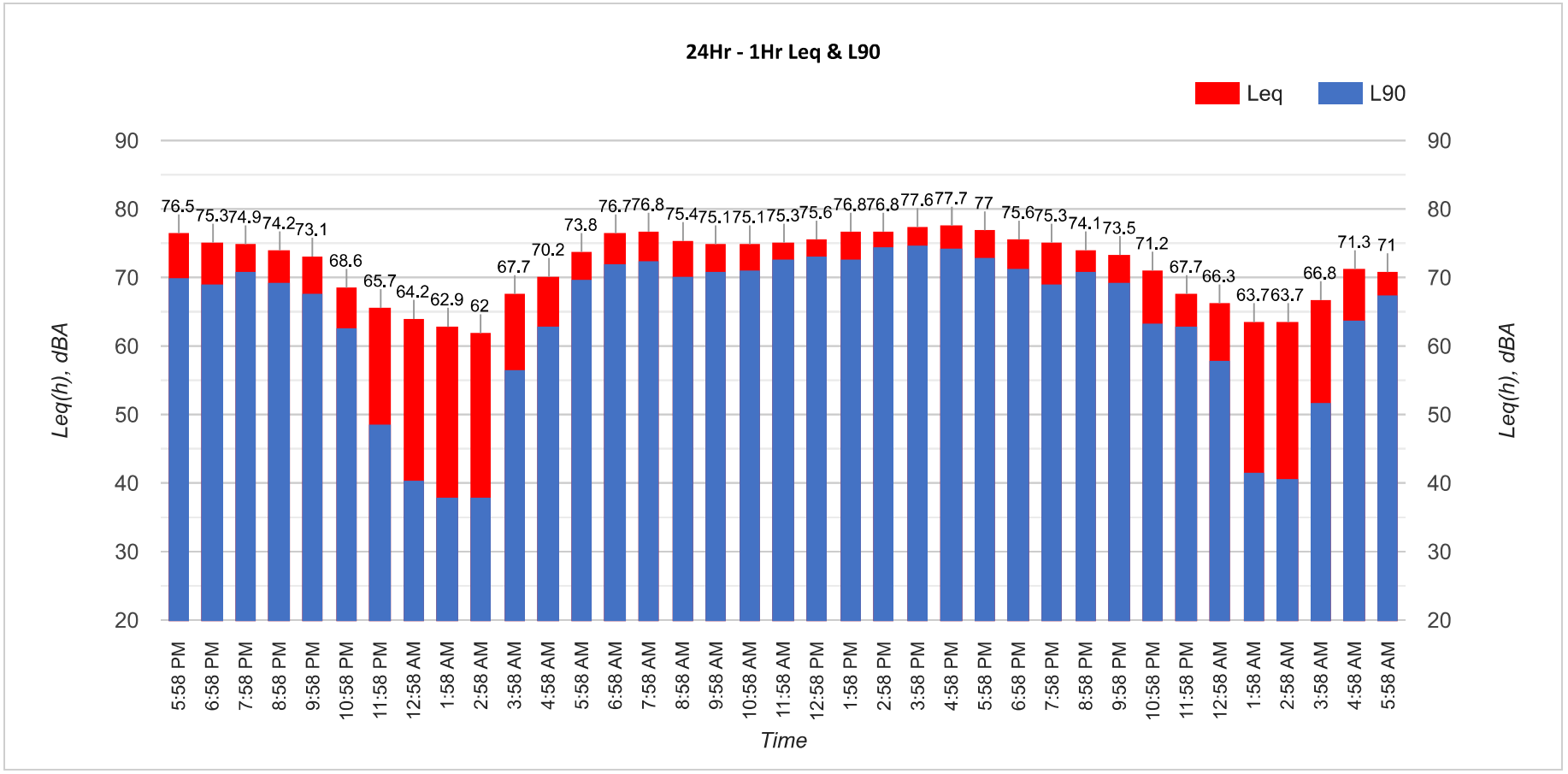
24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**
Site Id:	LT14	**Meteorological Cond.:**	70F Sunny	road noise and residential noise
		Ground Type:	Sandy soil and clay	



24-Hour Continuous Noise Measurement Datasheet - Cont.

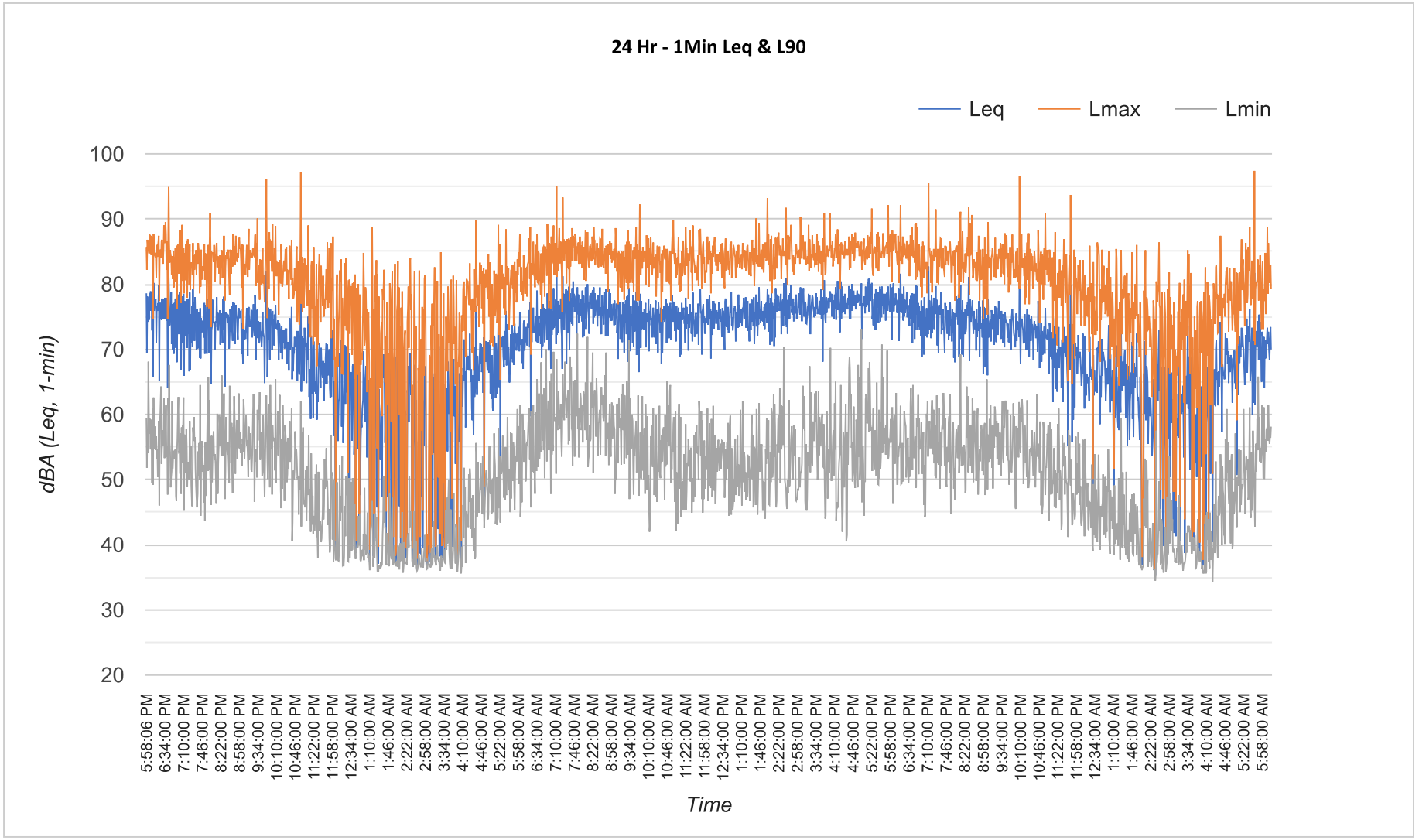
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4	
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**	
Site Id:	LT15	**Meteorological Cond.:**	70F Sunny	road noise and residential noise	
		Ground Type:	Sandy soil and clay		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont.

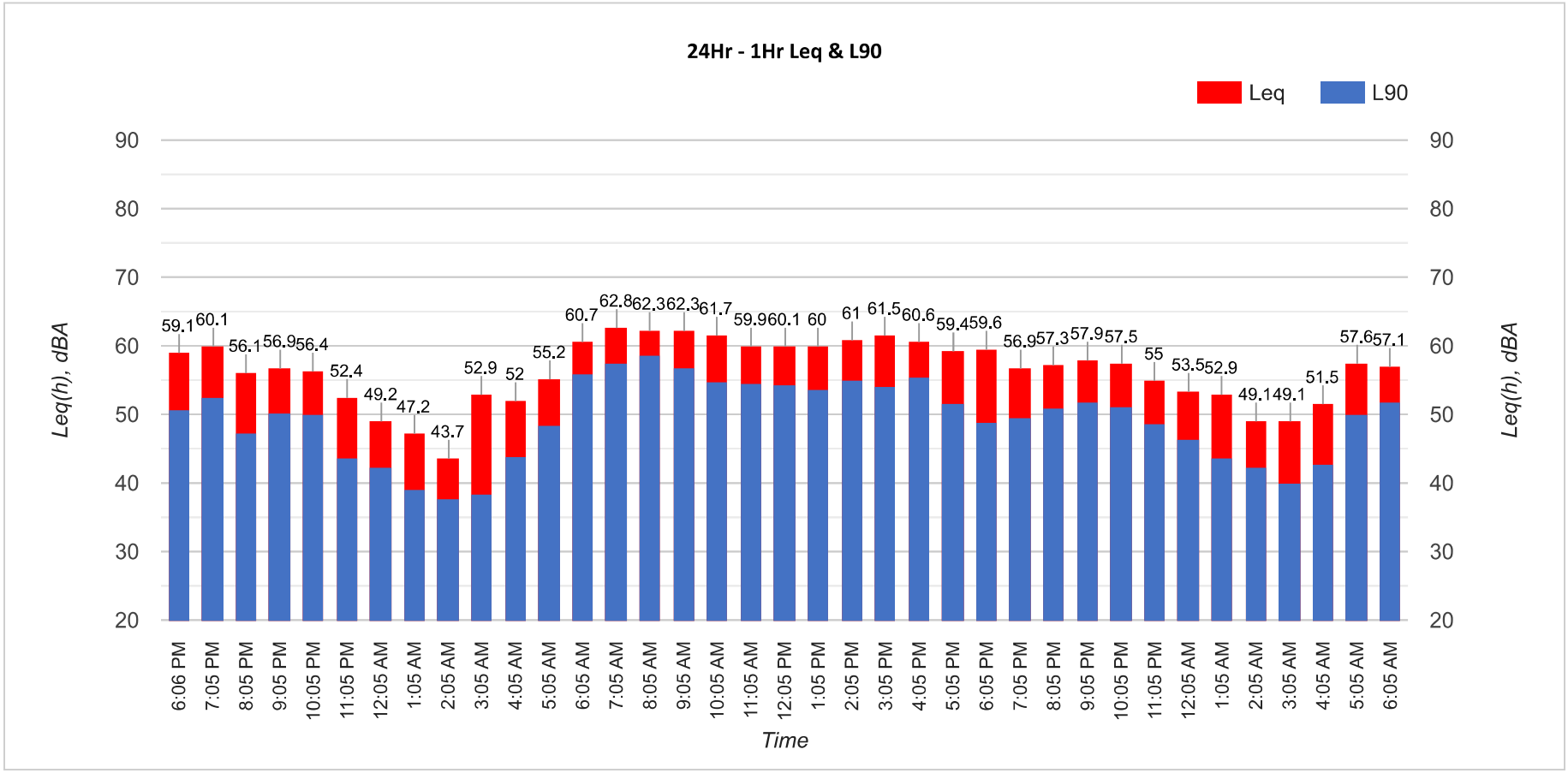
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4	
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**	
Site Id:	LT15	**Meteorological Cond.:**	70F Sunny	road noise and residential noise	
		Ground Type:	Sandy soil and clay		



MD ACOUSTICS

24-Hour Continuous Noise Measurement Datasheet - Cont.

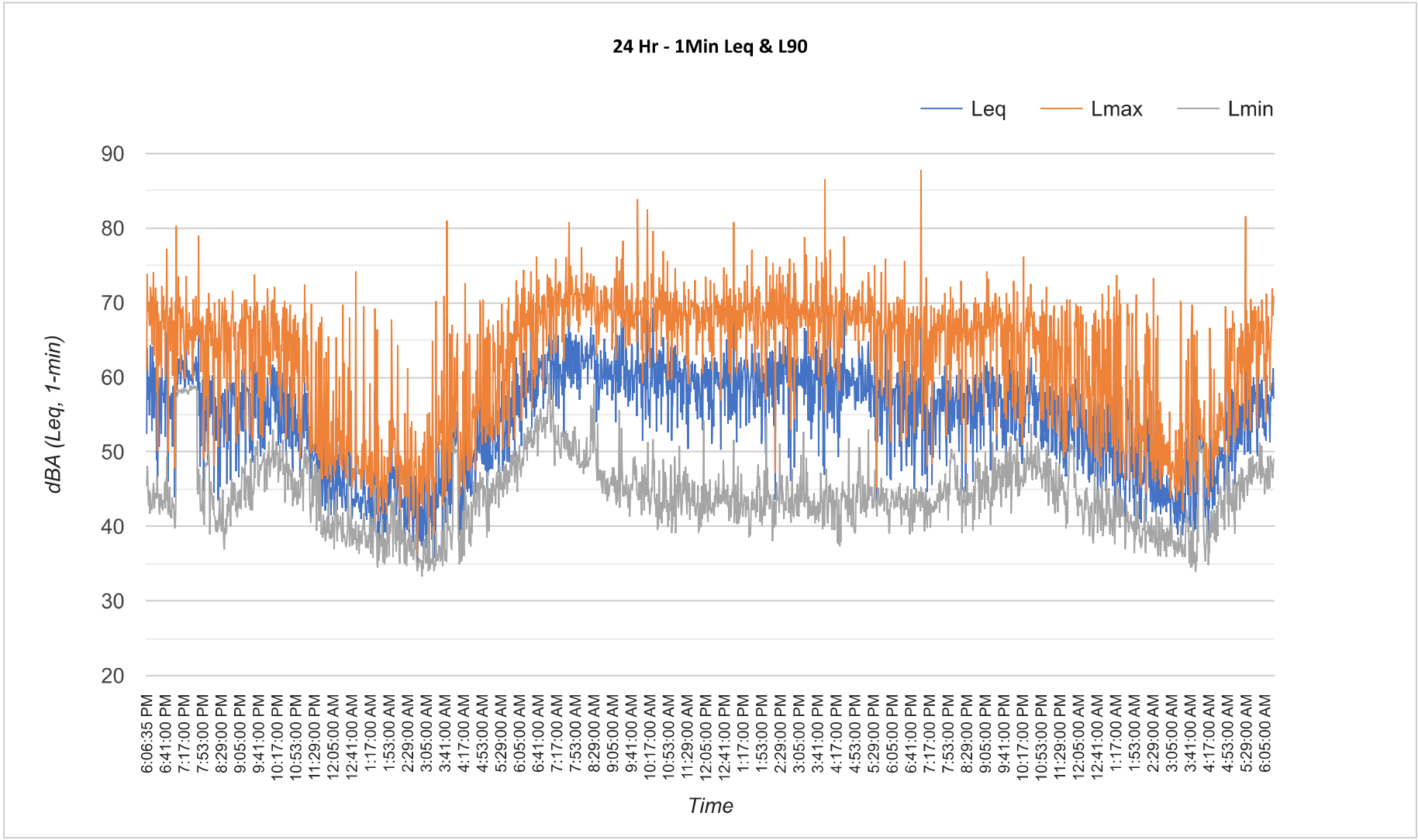
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4
Site Address/Location:	Indian Wells, CA	tall		**Noise Source(s) w/ Distance:**
Site Id:	LT4	**Meteorological Cond.:**	70F Sunny Winds 0-	Road and commercial noise
		10 Mph		
		Ground Type:	Sandy and clay	



MD ACOUSTICS

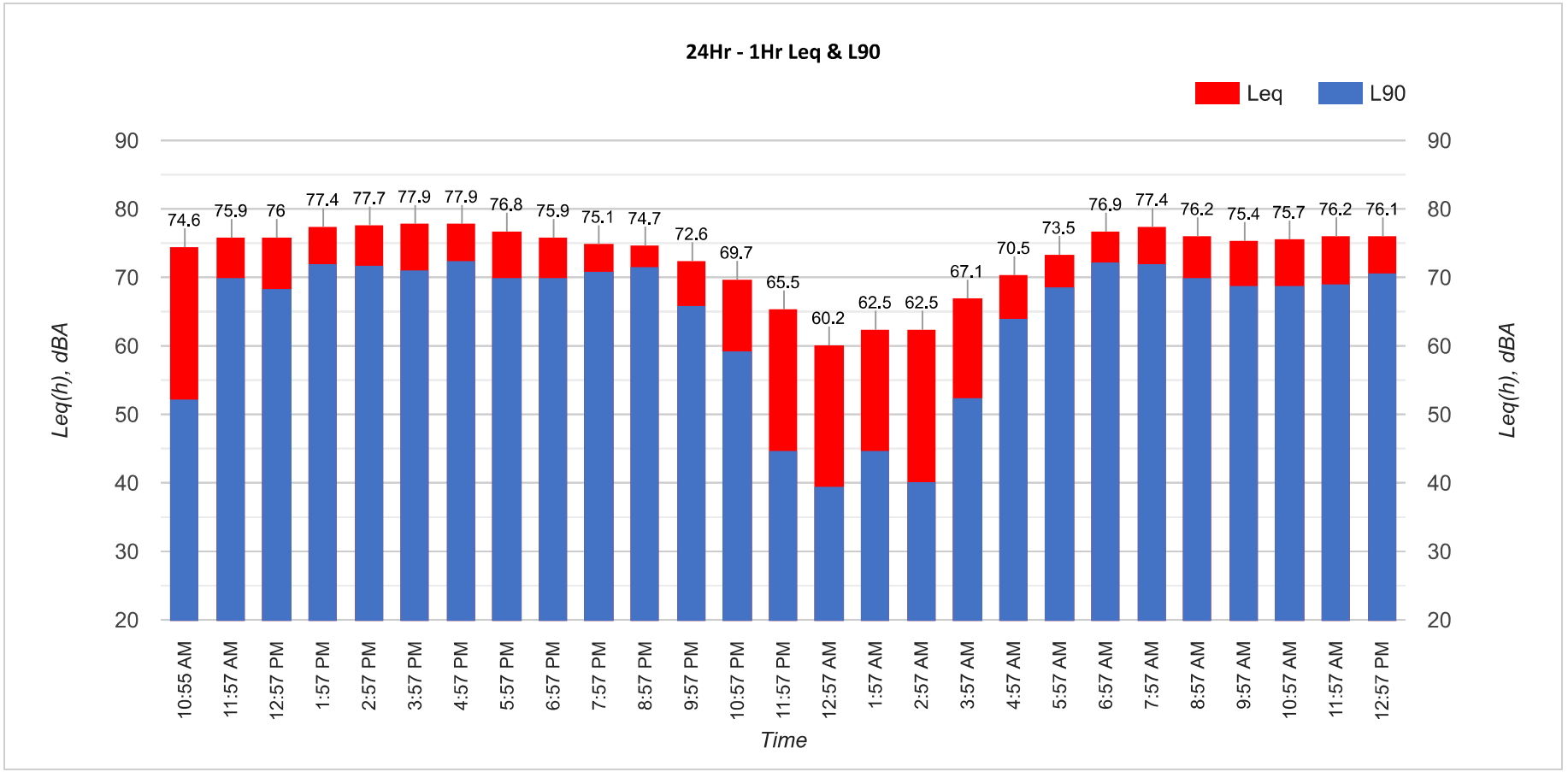
24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4	
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**	
Site Id:	LT4	**Meteorological Cond.:**	70F Sunny Winds 0-	Road and commercial noise	
			10 Mph		
		Ground Type:	Sandy and clay		



24-Hour Continuous Noise Measurement Datasheet - Cont.

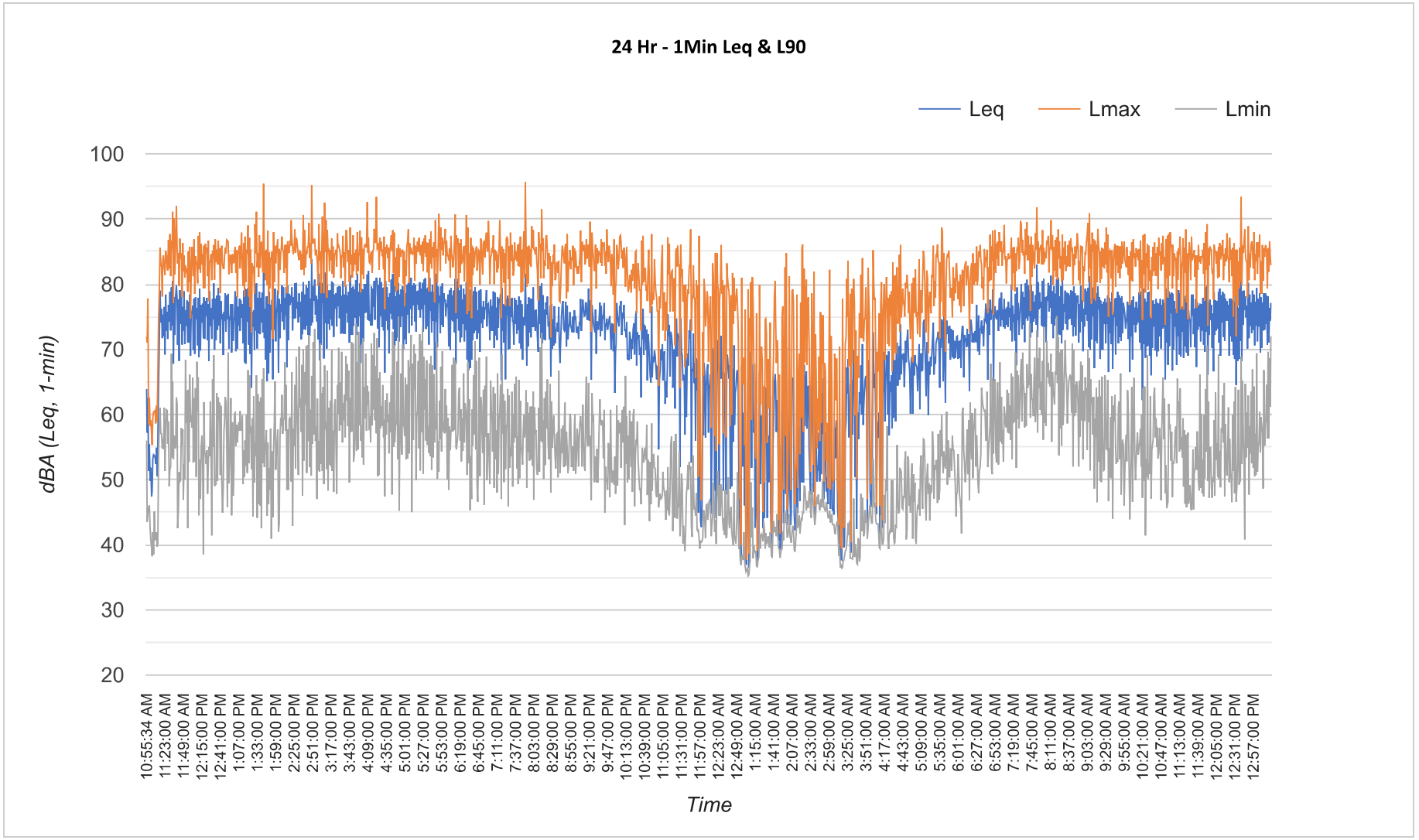
Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4	
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**	
Site Id:	LT9	**Meteorological Cond.:**	70F Sunny	road noise and residential noise	
		Ground Type:	Sandy soil and clay		



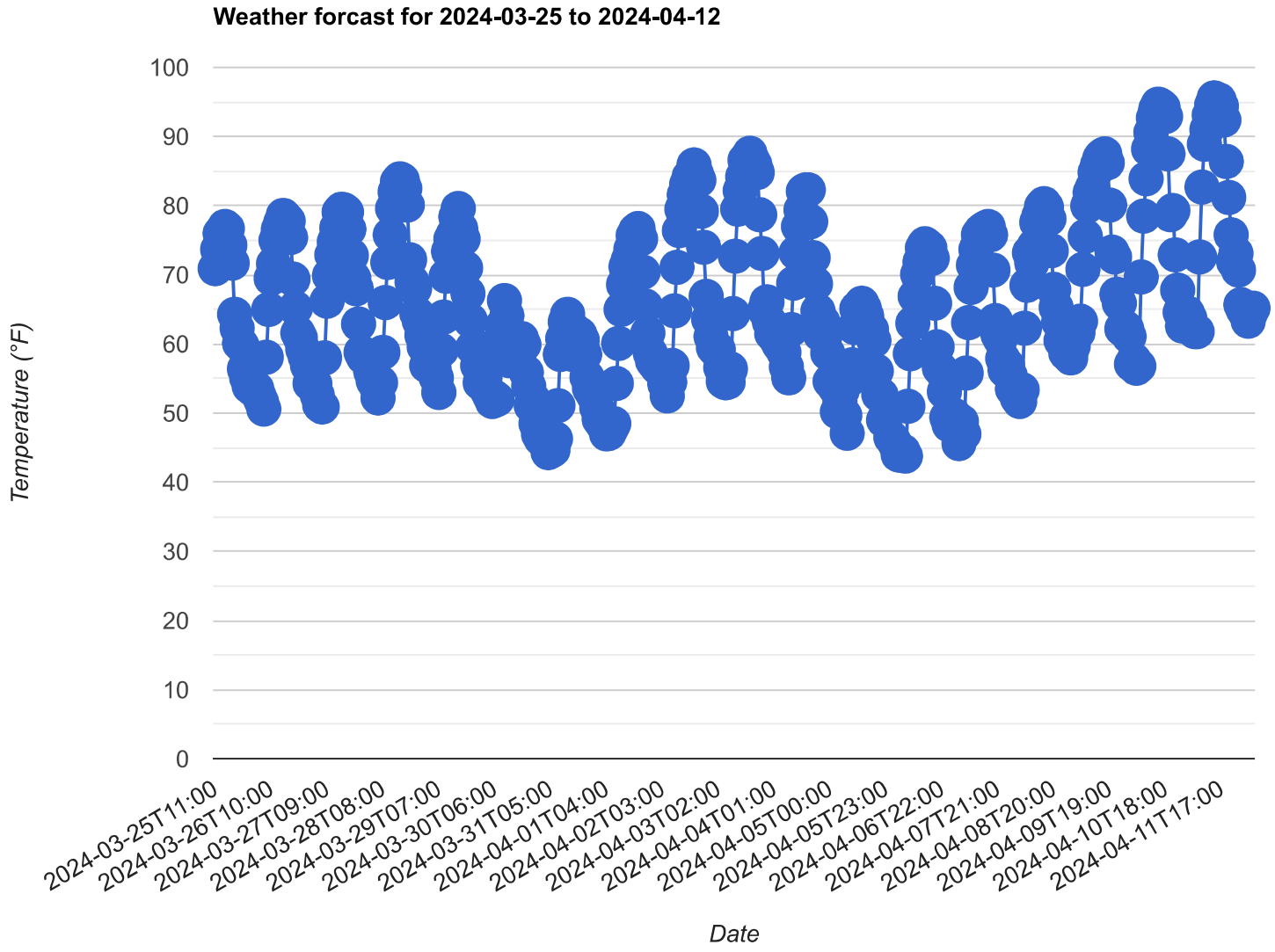
MD ACOUSTICS

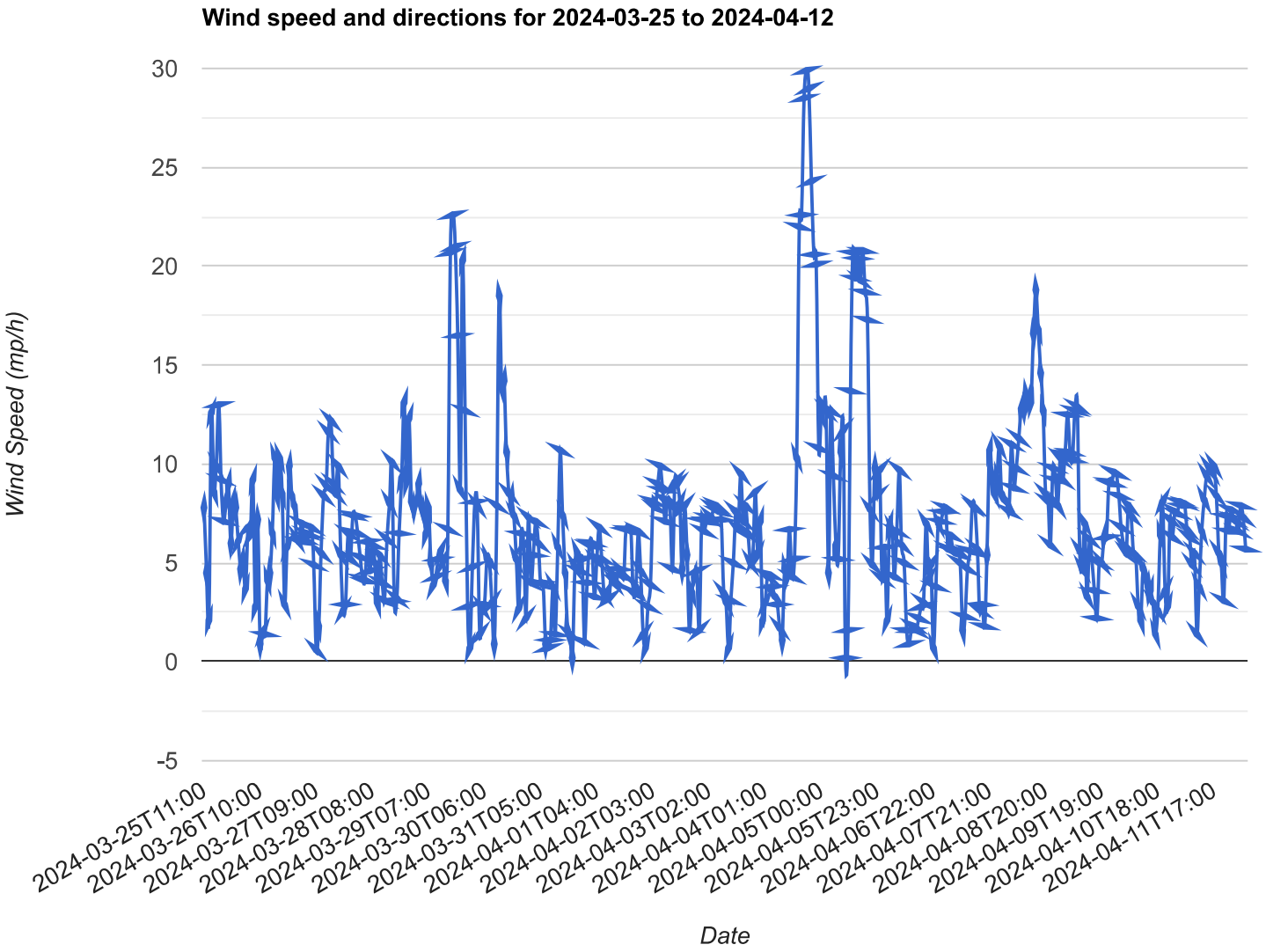
24-Hour Continuous Noise Measurement Datasheet - Cont.

Project Name:	General Plan Noise and Vibration City of Indian Wells	**Site Topo:**	Buildings 1-2 stories	**Day:** 1 of 4
Site Address/Location:	Indian Wells, CA		tall	**Noise Source(s) w/ Distance:**
Site Id:	LT9	**Meteorological Cond.:**	70F Sunny	road noise and residential noise
		Ground Type:	Sandy soil and clay	



MD ACOUSTICS


Weather forcast for 2024-03-25 to 2024-04-12
Temperature (°F)
100
90
80
70
60
50
40
30
20
10
0
2024-03-25T11:00
2024-03-26T10:00
2024-03-27T09:00
2024-03-28T08:00
2024-03-29T07:00
2024-03-30T06:00
2024-03-31T05:00
2024-04-01T04:00
2024-04-02T03:00
2024-04-03T02:00
2024-04-04T01:00
2024-04-05T00:00
2024-04-05T23:00
2024-04-06T22:00
2024-04-07T21:00
2024-04-08T20:00
2024-04-09T19:00
2024-04-10T18:00
2024-04-11T17:00
Date



Source: Global Forecast System (GFS) weather forcast model

Appendix C:
FHWA Roadway Noise Worksheets

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Hovley Lane
SEGMENT East City Boundary to West City Boundary
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,630
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,563

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.4	68.5	66.6	60.9	69.4	70.0
MEDIUM TRUCKS	71.5	69.9	64.4	62.7	70.9	71.1
HEAVY TRUCKS	61.2	59.3	47.3	55.0	62.1	62.1
VEHICULAR NOISE	74.2	72.5	68.7	65.3	73.5	**73.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	123	389	1231	3894
LDN	113	358	1132	3580

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Eldorado Drive
SEGMENT Fred Waring Dr to Highway 111
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,870
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	487

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0 FT
AMBIENT =	0
BARRIER =	0 (0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.2	60.8	56.0	49.6	60.0	60.4
MEDIUM TRUCKS	66.1	64.9	55.0	54.1	64.1	64.2
HEAVY TRUCKS	56.8	55.7	37.5	45.8	55.2	55.2
VEHICULAR NOISE	67.9	66.7	58.6	55.8	65.9	**66.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	20	64	203	642
LDN	19	61	193	611

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Cook Street
SEGMENT Fred Waring Dr to Highway 111
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	18,990
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,899

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0 FT
AMBIENT =	0
BARRIER =	0 (0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.4	66.5	64.6	58.9	67.4	68.0
MEDIUM TRUCKS	70.8	69.2	63.7	62.0	70.2	70.4
HEAVY TRUCKS	61.1	59.2	47.2	54.9	62.0	62.0
VEHICULAR NOISE	73.1	71.3	67.2	64.3	72.4	**72.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	95	299	945	2989
LDN	87	276	874	2765

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Fred Waring Drive
SEGMENT Eldorado Dr to Cook St
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,930
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,793

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.2	73.3	71.4	65.7	74.2	74.8
MEDIUM TRUCKS	76.4	74.7	69.2	67.5	75.7	76.0
HEAVY TRUCKS	66.0	64.1	52.1	59.8	66.9	66.9
VEHICULAR NOISE	79.1	77.3	73.5	70.2	78.4	**78.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	373	1178	3727	11785
LDN	343	1083	3426	10833

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Cook Street
SEGMENT Highway 111 to Fairway Dr
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,080
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,308

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.0	63.1	61.1	55.5	64.0	64.6
MEDIUM TRUCKS	68.2	66.5	61.0	59.3	67.5	67.7
HEAVY TRUCKS	58.8	56.9	44.9	52.6	59.7	59.7
VEHICULAR NOISE	70.2	68.5	64.1	61.4	69.6	**69.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	49	154	487	1541
LDN	45	143	452	1430

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Eldorado Drive
SEGMENT Highway 111 to Fairway Dr
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	5,210
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	46
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	521

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.5	- -
MEDIUM TRUCKS=	4.00	44.4	- -
HEAVY TRUCKS =	8.01	44.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.8	59.4	54.5	48.2	58.6	59.0
MEDIUM TRUCKS	65.4	64.2	54.3	53.4	63.4	63.5
HEAVY TRUCKS	56.5	55.4	37.2	45.5	54.9	54.9
VEHICULAR NOISE	67.1	65.9	57.5	55.1	65.1	**65.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	17	53	168	531
LDN	16	51	160	507

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Warner Trail
SEGMENT Fred Waring Dr to Miles Ave
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,330
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	433

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.6	58.2	53.4	47.0	57.4	57.8
MEDIUM TRUCKS	64.2	63.1	53.1	52.2	62.2	62.3
HEAVY TRUCKS	55.3	54.2	36.0	44.3	53.7	53.7
VEHICULAR NOISE	65.9	64.7	56.3	53.9	63.9	**64.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	40	128	404
LDN	12	39	122	385

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Highway 111
SEGMENT Cook St to Rancho Palmeras Dr
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	34,610
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,461

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.5	71.6	69.7	64.0	72.5	73.1
MEDIUM TRUCKS	75.2	73.6	68.1	66.4	74.6	74.8
HEAVY TRUCKS	65.2	63.2	51.3	59.0	66.1	66.1
VEHICULAR NOISE	77.7	76.0	72.0	68.9	77.0	**77.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	275	868	2746	8685
LDN	253	801	2532	8007

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Highway 111
SEGMENT Miles St to Washington St
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	37,330
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	60
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	3,733

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	40.1	- -
MEDIUM TRUCKS=	4.00	40.0	- -
HEAVY TRUCKS =	8.01	40.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	73.2	71.3	69.4	63.7	72.2	72.8
MEDIUM TRUCKS	75.0	73.3	67.8	66.1	74.3	74.6
HEAVY TRUCKS	64.9	63.0	51.0	58.7	65.8	65.8
VEHICULAR NOISE	77.4	75.7	71.7	68.6	76.8	**77.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	257	813	2571	8129
LDN	237	749	2370	7495

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Miles Ave
SEGMENT Warner Trail to Washington St
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	6,970
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	697

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.9	65.0	63.0	57.4	65.9	66.4
MEDIUM TRUCKS	68.0	66.3	60.9	59.2	67.3	67.6
HEAVY TRUCKS	57.6	55.7	43.7	51.4	58.5	58.5
VEHICULAR NOISE	70.7	68.9	65.1	61.8	70.0	**70.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	54	171	542	1714
LDN	50	158	498	1576

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Fairway Dr
SEGMENT Cook St to Rancho Palmeras Dr
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,160
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	416

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.4	58.0	53.2	46.8	57.2	57.6
MEDIUM TRUCKS	64.0	62.9	53.0	52.0	62.0	62.2
HEAVY TRUCKS	55.1	54.0	35.8	44.2	53.5	53.5
VEHICULAR NOISE	65.7	64.5	56.1	53.7	63.7	**63.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	12	39	123	388
LDN	12	37	117	370

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Portola Ave
SEGMENT Mockingbird Trail to South City Limit
LOCATION: City of Indian Wells, CA SCENARIO: Existing

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	12,340
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	40
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,234

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.9	- -
MEDIUM TRUCKS=	4.00	45.8	- -
HEAVY TRUCKS =	8.01	45.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.0	64.7	59.8	53.4	63.8	64.3
MEDIUM TRUCKS	69.9	68.8	58.8	57.9	67.9	68.0
HEAVY TRUCKS	60.6	59.5	41.3	49.7	59.0	59.0
VEHICULAR NOISE	71.7	70.5	62.4	59.7	69.7	**69.9**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	49	156	492	1557
LDN	47	148	469	1483

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Hovley Lane
SEGMENT East City Boundary to West City Boundary
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,080
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,508

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.3	68.4	66.4	60.8	69.3	69.8
MEDIUM TRUCKS	71.4	69.8	64.3	62.6	70.7	71.0
HEAVY TRUCKS	61.0	59.1	47.2	54.8	61.9	62.0
VEHICULAR NOISE	74.1	72.3	68.5	65.2	73.4	**73.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	119	376	1188	3757
LDN	109	345	1092	3454

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Eldorado Drive
SEGMENT Fred Waring Dr to Highway 111
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	5,340
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	534

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.6	61.2	56.4	50.0	60.4	60.8
MEDIUM TRUCKS	66.5	65.3	55.4	54.5	64.5	64.6
HEAVY TRUCKS	57.2	56.1	37.9	46.2	55.6	55.6
VEHICULAR NOISE	68.3	67.1	59.0	56.2	66.3	**66.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	22	70	223	704
LDN	21	67	212	670

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Cook Street
SEGMENT Fred Waring Dr to Highway 111
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,090
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,209

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.1	67.2	65.2	59.6	68.1	68.7
MEDIUM TRUCKS	71.5	69.8	64.4	62.7	70.8	71.1
HEAVY TRUCKS	61.7	59.8	47.9	55.5	62.6	62.7
VEHICULAR NOISE	73.7	72.0	67.9	64.9	73.1	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	110	348	1100	3477
LDN	102	322	1017	3216

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Fred Waring Drive
SEGMENT Eldorado Dr to Cook St
LOCATION: City of Indian Wells, CA
SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	42,550
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,255

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.7	73.8	71.9	66.2	74.7	75.3
MEDIUM TRUCKS	76.9	75.2	69.7	68.0	76.2	76.5
HEAVY TRUCKS	66.5	64.6	52.6	60.3	67.4	67.4
VEHICULAR NOISE	79.6	77.8	74.0	70.7	78.9	**79.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	418	1322	4181	13220
LDN	384	1215	3843	12153

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Cook Street
SEGMENT Highway 111 to Fairway Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,270
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,427

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.4	63.5	61.5	55.9	64.4	64.9
MEDIUM TRUCKS	68.5	66.9	61.4	59.7	67.9	68.1
HEAVY TRUCKS	59.2	57.2	45.3	53.0	60.0	60.1
VEHICULAR NOISE	70.6	68.8	64.5	61.8	69.9	**70.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	53	168	532	1681
LDN	49	156	493	1560

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Eldorado Drive
SEGMENT Highway 111 to Fairway Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	5,420
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	46
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	542

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.5	- -
MEDIUM TRUCKS=	4.00	44.4	- -
HEAVY TRUCKS =	8.01	44.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.9	59.6	54.7	48.3	58.7	59.2
MEDIUM TRUCKS	65.6	64.4	54.5	53.6	63.6	63.7
HEAVY TRUCKS	56.7	55.5	37.3	45.7	55.0	55.1
VEHICULAR NOISE	67.2	66.0	57.7	55.2	65.2	**65.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	17	55	175	552
LDN	17	53	167	527

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Warner Trail
SEGMENT Fred Waring Dr to Miles Ave
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	6,200
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	620

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.1	59.8	54.9	48.5	58.9	59.4
MEDIUM TRUCKS	65.8	64.6	54.7	53.8	63.8	63.9
HEAVY TRUCKS	56.9	55.7	37.5	45.9	55.2	55.3
VEHICULAR NOISE	67.4	66.2	57.9	55.4	65.4	**65.6**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	18	58	183	578
LDN	17	55	174	552

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Highway 111
SEGMENT Cook St to Rancho Palmeras Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	46,310
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,631

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.8	72.9	70.9	65.3	73.8	74.4
MEDIUM TRUCKS	76.5	74.9	69.4	67.7	75.8	76.1
HEAVY TRUCKS	66.4	64.5	52.6	60.2	67.3	67.4
VEHICULAR NOISE	79.0	77.2	73.3	70.1	78.3	**78.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	367	1162	3675	11620
LDN	339	1071	3388	10713

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Highway 111
SEGMENT Miles St to Washington St
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	47,830
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	60
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,783

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	40.1	- -
MEDIUM TRUCKS=	4.00	40.0	- -
HEAVY TRUCKS =	8.01	40.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.3	72.4	70.5	64.8	73.3	73.9
MEDIUM TRUCKS	76.0	74.4	68.9	67.2	75.4	75.6
HEAVY TRUCKS	66.0	64.0	52.1	59.8	66.8	66.9
VEHICULAR NOISE	78.5	76.8	72.8	69.7	77.8	**78.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	329	1042	3294	10416
LDN	304	960	3037	9603

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Miles Ave
SEGMENT Warner Trail to Washington St
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	10,340
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,034

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.6	66.7	64.7	59.1	67.6	68.2
MEDIUM TRUCKS	69.7	68.1	62.6	60.9	69.0	69.3
HEAVY TRUCKS	59.3	57.4	45.5	53.1	60.2	60.3
VEHICULAR NOISE	72.4	70.6	66.8	63.5	71.7	**72.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	80	254	804	2543
LDN	74	234	739	2338

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Fairway Dr
SEGMENT Cook St to Rancho Palmeras Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,260
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	426

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.5	58.1	53.3	46.9	57.3	57.7
MEDIUM TRUCKS	64.1	63.0	53.1	52.1	62.1	62.3
HEAVY TRUCKS	55.2	54.1	35.9	44.3	53.6	53.6
VEHICULAR NOISE	65.8	64.6	56.2	53.8	63.8	**64.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	40	126	397
LDN	12	38	120	379

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Portola Ave
SEGMENT Mockingbird Trail to South City Limit
LOCATION: City of Indian Wells, CA SCENARIO: Future Plus Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,430
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	40
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,343

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.9	- -
MEDIUM TRUCKS=	4.00	45.8	- -
HEAVY TRUCKS =	8.01	45.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.4	65.0	60.2	53.8	64.2	64.6
MEDIUM TRUCKS	70.3	69.1	59.2	58.3	68.3	68.4
HEAVY TRUCKS	61.0	59.9	41.7	50.0	59.4	59.4
VEHICULAR NOISE	72.1	70.9	62.8	60.1	70.1	**70.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	54	169	536	1695
LDN	51	161	510	1614

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Hovley Lane
SEGMENT East City Boundary to West City Boundary
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	15,100
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	50
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,510

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	43.4	- -
MEDIUM TRUCKS=	4.00	43.3	- -
HEAVY TRUCKS =	8.01	43.4	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	70.3	68.4	66.4	60.8	69.3	69.9
MEDIUM TRUCKS	71.4	69.8	64.3	62.6	70.7	71.0
HEAVY TRUCKS	61.0	59.1	47.2	54.8	61.9	62.0
VEHICULAR NOISE	74.1	72.3	68.5	65.2	73.4	**73.8**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	119	376	1190	3762
LDN	109	346	1094	3458

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Eldorado Drive
SEGMENT Fred Waring Dr to Highway 111
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	5,400
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	540

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	62.6	61.3	56.4	50.0	60.4	60.9
MEDIUM TRUCKS	66.5	65.4	55.4	54.5	64.5	64.6
HEAVY TRUCKS	57.2	56.1	37.9	46.3	55.6	55.6
VEHICULAR NOISE	68.4	67.1	59.0	56.3	66.3	**66.5**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	23	71	225	712
LDN	21	68	214	678

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Eldorado Drive
SEGMENT Highway 111 to Fairway Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	5,400
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	46
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	540

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.5	- -
MEDIUM TRUCKS=	4.00	44.4	- -
HEAVY TRUCKS =	8.01	44.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	60.9	59.6	54.7	48.3	58.7	59.2
MEDIUM TRUCKS	65.6	64.4	54.5	53.6	63.5	63.7
HEAVY TRUCKS	56.6	55.5	37.3	45.7	55.0	55.0
VEHICULAR NOISE	67.2	66.0	57.6	55.2	65.2	**65.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	17	55	174	550
LDN	17	53	166	525

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Warner Trail
SEGMENT Fred Waring Dr to Miles Ave
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	6,300
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	630

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	61.2	59.8	55.0	48.6	59.0	59.4
MEDIUM TRUCKS	65.8	64.7	54.8	53.8	63.8	64.0
HEAVY TRUCKS	56.9	55.8	37.6	46.0	55.3	55.3
VEHICULAR NOISE	67.5	66.3	57.9	55.5	65.5	**65.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	19	59	186	587
LDN	18	56	177	561

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Highway 111
SEGMENT Cook St to Rancho Palmeras Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	46,800
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,680

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.8	72.9	71.0	65.3	73.8	74.4
MEDIUM TRUCKS	76.6	74.9	69.4	67.7	75.9	76.2
HEAVY TRUCKS	66.5	64.6	52.6	60.3	67.4	67.4
VEHICULAR NOISE	79.0	77.3	73.3	70.2	78.4	**78.7**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	371	1174	3714	11743
LDN	342	1083	3424	10827

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Highway 111
SEGMENT Miles St to Washington St
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	48,200
SPEED =	45
PK HR % =	10
NEAR LANE/FAR LANE DIST =	60
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,820

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0 FT
AMBIENT =	0
BARRIER =	0 (0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	40.1	- -
MEDIUM TRUCKS=	4.00	40.0	- -
HEAVY TRUCKS =	8.01	40.1	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	74.3	72.4	70.5	64.9	73.3	73.9
MEDIUM TRUCKS	76.1	74.4	68.9	67.2	75.4	75.7
HEAVY TRUCKS	66.0	64.1	52.1	59.8	66.9	66.9
VEHICULAR NOISE	78.5	76.8	72.8	69.7	77.9	**78.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	332	1050	3319	10497
LDN	306	968	3060	9677

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Miles Ave
SEGMENT Warner Trail to Washington St
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	10,500
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,050

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0 FT
AMBIENT =	0
BARRIER =	0 (0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	68.6	66.7	64.8	59.2	67.6	68.2
MEDIUM TRUCKS	69.8	68.1	62.6	60.9	69.1	69.4
HEAVY TRUCKS	59.4	57.5	45.5	53.2	60.3	60.3
VEHICULAR NOISE	72.5	70.7	66.9	63.6	71.8	**72.1**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	82	258	817	2583
LDN	75	237	751	2374

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Fred Waring Drive
SEGMENT Eldorado Dr to Cook St
LOCATION: City of Indian Wells, CA
SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	42,700
SPEED =	50
PK HR % =	10
NEAR LANE/FAR LANE DIST =	72
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	4,270

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	34.8	- -
MEDIUM TRUCKS=	4.00	34.7	- -
HEAVY TRUCKS =	8.01	34.8	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	75.7	73.8	71.9	66.3	74.8	75.3
MEDIUM TRUCKS	76.9	75.2	69.7	68.0	76.2	76.5
HEAVY TRUCKS	66.5	64.6	52.6	60.3	67.4	67.4
VEHICULAR NOISE	79.6	77.8	74.0	70.7	78.9	**79.2**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	420	1327	4195	13267
LDN	386	1220	3857	12196

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Cook Street
SEGMENT Fred Waring Dr to Highway 111
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	22,200
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	48
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	2,220

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	44.0	- -
MEDIUM TRUCKS=	4.00	43.9	- -
HEAVY TRUCKS =	8.01	44.0	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	69.1	67.2	65.2	59.6	68.1	68.7
MEDIUM TRUCKS	71.5	69.9	64.4	62.7	70.8	71.1
HEAVY TRUCKS	61.8	59.8	47.9	55.6	62.6	62.7
VEHICULAR NOISE	73.8	72.0	67.9	65.0	73.1	**73.4**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	111	349	1105	3495
LDN	102	323	1022	3232

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Cook Street
SEGMENT Highway 111 to Fairway Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	14,300
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	42
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,430

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.775	0.124	0.102	0.814
MEDIUM TRUCKS	0.824	0.058	0.118	0.180
HEAVY TRUCKS	0.771	0.012	0.217	0.006

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.5	- -
MEDIUM TRUCKS=	4.00	45.4	- -
HEAVY TRUCKS =	8.01	45.5	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	65.4	63.5	61.5	55.9	64.4	65.0
MEDIUM TRUCKS	68.5	66.9	61.4	59.7	67.9	68.1
HEAVY TRUCKS	59.2	57.2	45.3	53.0	60.1	60.1
VEHICULAR NOISE	70.6	68.8	64.5	61.8	70.0	**70.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	53	168	533	1685
LDN	49	156	494	1564

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Portola Ave
SEGMENT Mockingbird Trail to South City Limit
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	13,500
SPEED =	40
PK HR % =	10
NEAR LANE/FAR LANE DIST =	40
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	1,350

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	45.9	- -
MEDIUM TRUCKS=	4.00	45.8	- -
HEAVY TRUCKS =	8.01	45.9	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	66.4	65.1	60.2	53.8	64.2	64.7
MEDIUM TRUCKS	70.3	69.1	59.2	58.3	68.3	68.4
HEAVY TRUCKS	61.0	59.9	41.7	50.1	59.4	59.4
VEHICULAR NOISE	72.1	70.9	62.8	60.1	70.1	**70.3**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	54	170	539	1703
LDN	51	162	513	1622

FHWA-RD-77-108 ROADWAY TRAFFIC NOISE PREDICTION MODEL (CNEL) - CALVENO

PROJECT: General Plan
ROADWAY Fairway Dr
SEGMENT Cook St to Rancho Palmeras Dr
LOCATION: City of Indian Wells, CA SCENARIO: Future No Project

JOB #: 0462-20-05
DATE: 21-Aug-24
ENGINEER: C. Pincock

NOISE INPUT DATA

ROADWAY CONDITIONS

ADT =	4,300
SPEED =	35
PK HR % =	10
NEAR LANE/FAR LANE DIST =	24
ROAD ELEVATION =	0
GRADE =	0
PK HR VOL =	430

RECEIVER INPUT DATA

RECEIVER DISTANCE =		50
DIST C/L TO WALL =		0
RECEIVER HEIGHT =		5
WALL DISTANCE FROM RECEIVER =		50
PAD ELEVATION =		0
ROADWAY VIEW:	LF ANGLE	-90
	RT ANGLE	90
	DF ANGLE	180

SITE CONDITIONS

AUTOMOBILES	10	
MED TRUCKS	10	(HARD SITE=10, SOFT SITE=15)
HVY TRUCKS	10	

WALL INFORMATION

HTH WALL =	0	FT
AMBIENT =	0	
BARRIER =	0	(0=WALL,1=BERM)

VEHICLE MIX DATA

VEHICLE TYPE	DAY	EVE	NIGHT	DAILY
AUTOMOBILES	0.879	0.072	0.050	0.756
MEDIUM TRUCKS	0.920	0.023	0.057	0.234
HEAVY TRUCKS	0.924	0.004	0.072	0.009

MISC. VEHICLE INFO

VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT
AUTOMOBILES =	2.00	48.6	- -
MEDIUM TRUCKS=	4.00	48.5	- -
HEAVY TRUCKS =	8.01	48.6	0.0

NOISE OUTPUT DATA

NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	59.5	58.2	53.3	46.9	57.3	57.8
MEDIUM TRUCKS	64.2	63.0	53.1	52.2	62.2	62.3
HEAVY TRUCKS	55.3	54.1	36.0	44.3	53.6	53.7
VEHICULAR NOISE	65.9	64.7	56.3	53.8	63.8	**64.0**

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	13	40	127	401
LDN	12	38	121	383

Appendix F

Transportation Analysis
Kittelson and Associates, Inc.

KITTELSON & ASSOCIATES

INDIAN WELLS GENERAL PLAN UPDATE TRANSPORTATION ANALYSIS

INDIAN WELLS, CA

August 27, 2024



Inside front cover

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Indian Wells General Plan Update Transportation Analysis

Indian Wells, CA

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August 27, 2024

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Executive Summary

EXECUTIVE SUMMARY

The City of Indian Wells is proposing a comprehensive General Plan Update (i.e., the "project"). The General Plan is a state-mandated document that outlines goals, policies, and programs that provide the framework for future development in the City. The General Plan Update (GPU) addresses land use, mobility, open space, conservation, safety, noise, and economic development. As previously identified, the City's Housing Element has been updated under separate cover and was adopted by the City Council in 2022. The GPU will be organized into six elements: Land Use, Mobility, Resource Management, Public Safety, Economic Development, and Housing. New policies are proposed that emphasize maintaining its tranquil and luxurious resort environment, promoting fiscal resiliency, and creating a sustainable and resident future for current and future residents.

The General Plan Update includes an update to the City's Land Use Map. The project proposes to change the current land use designation at two locations, as indicated in the table below.

Table 1: Changes to the General Plan Land Use

Location	APN	Existing Use	Current Land Use Designation	Proposed Land Use Designation (GPU)
1	633-150-077 & 633-150-071	Golf Course	Golf and Recreation	Resort Commercial
2	633-310-035 & 633-410-051	Vacant	Community Commercial	Resort Commercial

Source: MSA Consulting, Environmental Initial Study for the Indian Wells General Plan Update, July 2024.

In addition, the General Plan Update proposes changes to the Whitewater River Channel consistent with ongoing efforts to improve the Channel. Specifically, approximately 6.82 acres of the Whitewater River Channel will be removed from designation as part of the storm channel and added to the designation of developable acreage for resort commercial uses utilizing approved channel re-design. The improvements will include engineered fill material and new slope protection on the southern slope of the Channel in the vicinity of Miles Avenue.

Buildout of the proposed General Plan would result in 5,455 single family units and 816 multifamily units, for a total of 6,271 residential units (consistent with the Current General Plan); 5,159,667 square feet of nonresidential space (27,563 more square feet than the Current General Plan); and 6,310 jobs (93 more jobs than the Current General Plan).

The following presents transportation analysis to comply with CEQA. It also provides an assessment of existing and future roadway and intersection operation, which is provided outside CEQA review.

CEQA RELATED ANALYSES

VMT IMPACT ASSESSMENT

Per current CEQA requirements, VMT is the most appropriate metric to evaluate a project's transportation impact. Since the City has not officially adopted VMT thresholds and guidelines for the preparation of transportation studies, this analysis relies on guidance from the California Governor's Office of Planning and Research (OPR) technical advisory to evaluate CEQA guidelines for VMT. A significant impact would occur if the project's 2045 VMT per capita or VMT per employee exceeds 15 percent below the existing CVAG countywide average VMT per capita, or VMT per employee, respectively.

If a project level impact occurs, a significant impact would also occur. As described in OPR's SB743 Technical Advisory, "A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa."

Project VMT Impact Assessment

The projected vehicle-miles of travel (VMT) impacts due to the Project were calculated using the Coachella Valley Association of Governments (CVAG) regional travel model as shown in **Table 2**.

Table 2: Summary of VMT Impact

Units	Existing (2024 Base Year)	2045 Adopted General Plan (No Project)	2045 Proposed General Plan (Project)
Capita			
VMT Per Capita	25.4	22.6	22.6
Impact Threshold[1]	N/A	N/A	14.0
EXCEEDS THRESHOLD	**N/A**	**N/A**	**YES**
Employee			
VMT Per Employee	31.5	27.9	27.9
Impact Threshold[1]	N/A	N/A	30.1
EXCEEDS THRESHOLD	**N/A**	**N/A**	**NO**
Total Project VMT			
City of Indian Wells	347,400	538,149	542,972

Source: Kittelson and Associates, 2024.
[1] Impact threshold is 15% below CVAG 2024 base year value
N/A = not applicable.

Future conditions with the proposed Project would result in decreased VMT per employee and VMT per capita in comparison to 2024 baseline conditions. The VMT per capita and VMT per employee in the 2045 No Project and 2045 Project scenarios are the same, because the population and employment numbers are expected to remain the same in both scenarios. The impact threshold for residential VMT would be exceeded for the Project. The impact threshold for office VMT would not be exceeded for the Project.

Cumulative VMT Impact Assessment

A significant transportation cumulative impact would occur if there would be a net increase in total regional VMT under horizon year 2045 conditions. The total VMT within the City's boundaries was calculated under the Cumulative (2045) condition without and with implementation of the Project. The Cumulative Daily VMT within the City under No Project conditions would be 538,149. The Cumulative Daily VMT with Project would be

542,972. Therefore, the Project (under maximum development potential) would result in a Citywide VMT increase of 4,823. This corresponds to a 0.90% percent increase in the total VMT compared to the No Project scenario.

Buildout of the General Plan would result in cumulative VMT impacts and would require a reduction of approximately 27% of the total VMT to offset the increase. The Project already includes several policies that would promote non-automobile travel and promote densification which result in a more efficient land use and travel network. However, a reduction of this magnitude is not feasible. Future development projects consistent with the General Plan would need to consider transportation demand management (TDM) consistent with those identified in the Circulation Element. TDM techniques include commuter assistance programs; and making home, work, and shopping closer together to shorten travel distances. Because it cannot be guaranteed that the effectiveness of TDM measures would offset VMT, cumulative residential VMT impacts are considered significant and unavoidable.

Potential Conflict with a program, plan, ordinance, or policy addressing the circulation system

Relevant City circulation system policies, programs, and plans were reviewed to confirm consistency and that the proposed Project plans would not preclude implementation of existing plans. Moreover, it was determined that there would be less than significant impact to emergency vehicle access.

Potential Increase in Hazards

The Indian Wells General Plan Update does not propose any specific developments. The update will change the current land use designation at two locations (APN 633-150-077 & 633-150-070, and APN 633-310-035 & 633-410-051) from golf and recreation land use to resort commercial, and community commercial land use to resort commercial, respectively.

In addition, changes to the Whitewater River Channel are proposed as part of the proposed project consistent with ongoing efforts to improve the Channel. Approximately 6.82 acres of the Whitewater River Channel will be removed from the storm channel and added to developable acreage for resort commercial uses.

Prior to implementation, any improvements would be subject to a detailed review and future consideration by the City's Public Works engineering staff. An evaluation of the roadway alignments, intersection geometrics, and traffic control features would be needed at the project design level. Roadway improvements would have to be made in accordance with the City's circulation plan and roadway design guidelines and meet design guidelines in the California Manual of Uniform Traffic Control Devices and the Caltrans Roadway Design Manual.

Overall, implementation of the General Plan Update would not result in hazardous conditions. As individual projects and circulation improvements would undergo review by Public Works and Planning departments for approval and construction and would have to meet design guidelines, no impacts would occur.

LOS IMPACT ANALYSES

This section discusses the impact assessment as related to the level-of-service (LOS) analysis.

TRAFFIC CONDITIONS WITH CURRENT ROADWAY NETWORK

No specific development projects are proposed as part of the Indian Wells General Plan Update. While widening of Highway 111 within Indian Wells is included under the RCTC LRTS, there is no committed funding for the widening. For this analysis, the roadway and intersection configurations are kept consistent from the existing scenario, including Highway 111 with 2 lanes in each direction and all study intersections with the same lane configurations and signal phasing.

Table 3 presents a summary of the study intersection operations during the AM and PM peak hours under existing and 2045 conditions. Under existing conditions, the following intersections operate below the target LOS ("D"):

- 3. Cook Street at Highway 111 (LOS E during the AM peak hour)
- 4. Eldorado Drive at Highway 111 (LOS E during the PM peak hour)

Under 2045 conditions, the following intersections operate below the target LOS ("D"):

- 3. Cook Street at Highway 111 (LOS E during the AM peak hour)
- 4. Eldorado Drive at Highway 111 (LOS E during the PM peak hour)
- 5. Indian Wells Lane at Highway 111 (LOS F during the AM and PM peak hour)

In addition to intersections 3 and 4, intersection 5 would also operate below target LOS under 2045 conditions during the AM and PM peak hours.

Table 3: Intersection Operations Summary

ID	Study Intersection	Existing AM		Existing PM		2045 AM		2045 PM	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Eldorado Drive at Fred Waring Dr.	12.3	B	10.5	B	16.6	B	11.9	B
2	Warner Trail at Fred Waring Drive	46.0	D	46.5	D	46.0	D	48.9	D
3	Cook Street at Highway 111	**61.3**	**E**	40.3	D	**55.9**	**E**	47.6	D
4	Eldorado Drive at Highway 111	49.2	D	**57.9**	**E**	47.8	D	**90.4**	**F**
5	Indian Wells Lane at Highway 111	53.8	D	37.9	D	**166.8**	**F**	**86.7**	**F**
6	Miles Avenue at Highway 111	37.7	D	21.0	C	45.0	D	30.9	C
7	Washington Street at Miles Avenue	28.6	C	28.4	C	35.3	D	31.7	C

Source: Kittelson & Associates, Inc. 2024
Bold signifies operations below target LOS ("D").

The roadway segment analysis was performed for average daily traffic volumes (ADT), according to HCM methodologies.

Table 4 presents a summary of the roadway segments not meeting LOS targets and the conditions where they operate below targets. In this analysis, Highway 111 includes 2 lanes in each direction and would operate at LOS F under 2045 conditions.

Table 4. Roadway Segments Not Meeting Targets

Roadway Segment	Scenarios and LOS
Highway 111 (Cook Street to Rancho Palmeras Drive)	Existing (E), 2045 (F)
Highway 111 (Miles Avenue to Washington Street)	Existing (F), 2045 (F)

Source: Kittelson & Associates, 2024
Notes: 2045 corresponds to 2045 General Plan Update (Project) conditions.

TRAFFIC CONDITIONS WITH HIGHWAY 111 WIDENING

Widening of Highway 111 from 4 to 6 lanes within City limits was identified in the RCTS LRTS. The following table provides a summary of the anticipated traffic operations with widening of Highway 111 and study intersections along the corridor.

Table 5. 2045 General Plan Update With Highway 111 Improvements

ID	Study Intersection	Peak Hours Not Meeting Targets (LOS)	
		AM	PM
3	Cook Street at Highway 111	D	D
4	Eldorado Drive at Highway 111	D	D
5	Indian Wells Lane at Highway 111	D	C
6	Miles Avenue at Highway 111	C	C

Source: Kittelson & Associates, 2024

As shown in **Table 5**, widening Highway 111 from 4 to 6 lanes will improve the LOS for intersections to meet the target LOS "D". The roadway segments ADT would also meet target LOS for the study roadway segments on Highway 111.n summary, widening Highway 111 with the provision of a 3rd lane in each direction and widening of the study intersections along Highway 111 with an additional through lane would improve operations under 2045 conditions, meeting the City LOS D standards and also meeting the CMP LOS E standard.

It is recommended that the City continue to monitor traffic volumes on these and other roadway facilities to determine the timing and extent of any improvements. The City of Indian Wells should consider the necessary right of way requirements and conduct a detailed traffic operations study to identify specific lane and intersection configurations including all intersections along the entire corridor within City limits.



Introduction

INTRODUCTION

PURPOSE OF TRANSPORTATION STUDY

The purpose of the study is to assess potentially significant impacts resulting from the implementation of the General Plan Update Project (Project) on the citywide transportation system, and to identify measures to mitigate them. The study also serves as the basis for the transportation component of the Project's Environmental Impact Report (EIR). This study includes a review of the following:

- Review of consistency with existing City programs, plans, ordinances, and policies related to pedestrian and bicyclists, and transit facilities
- Assessment of the existing circulation conditions, including roadways, pedestrian, bicycle, and transit facilities
- Assessment of the Project's Vehicle Miles Traveled (VMT) impact compared to applicable thresholds
- Assessment of impacts and mitigations related to geometric design and emergency access.

PROJECT CHARACTERISTICS

The Indian Wells General Plan Update does not propose any specific developments. The update will change the current land use designation at two locations (APN 633-150-077 & 633-150-070, and APN 633-310-035 & 633-410-051) from golf and recreation land use to resort commercial, and community commercial land use to resort commercial, respectively.

In addition, changes to the Whitewater River Channel are proposed as part of the proposed project consistent with ongoing efforts to improve the Channel. Approximately 6.82 acres of the Whitewater River Channel will be removed from the storm channel and added to developable acreage for resort commercial uses.

The buildout analysis assumes 2045 is to be the full buildout year of the General Plan (the point at which all parcels in the City are developed according to their General Plan land use designation).

DEVELOPMENT POTENTIAL

The General Plan represents the community's view of its future and expresses the long-term growth and development goals. It addresses issues that impact the entire city, such as how land is used, where buildings are built, the locations of roads and parks, safety, noise, and more.

Table 6 provides a statistical summary of the existing development within the City of Indian Wells. **Table 7** provides the proposed general plan designations as adopted in 2045.

Table 6: Existing Development within Indian Wells

Existing Uses	Acres
Commercial	158
Natural Preserve	155
OS, Parks, Golf	6,395
Public Facilities	22
Residential Attached	211
Residential Detached	1,193
Residential/Watercourse Interface	19
Sports Complex	63
Streets	515
Utility/Maintenance Lot	22
Vacant	187
Watercourses, Drainage Channels	391
Total	**9,333**

Source: DeNovo Planning Group, Project Description, May 22, 2024.

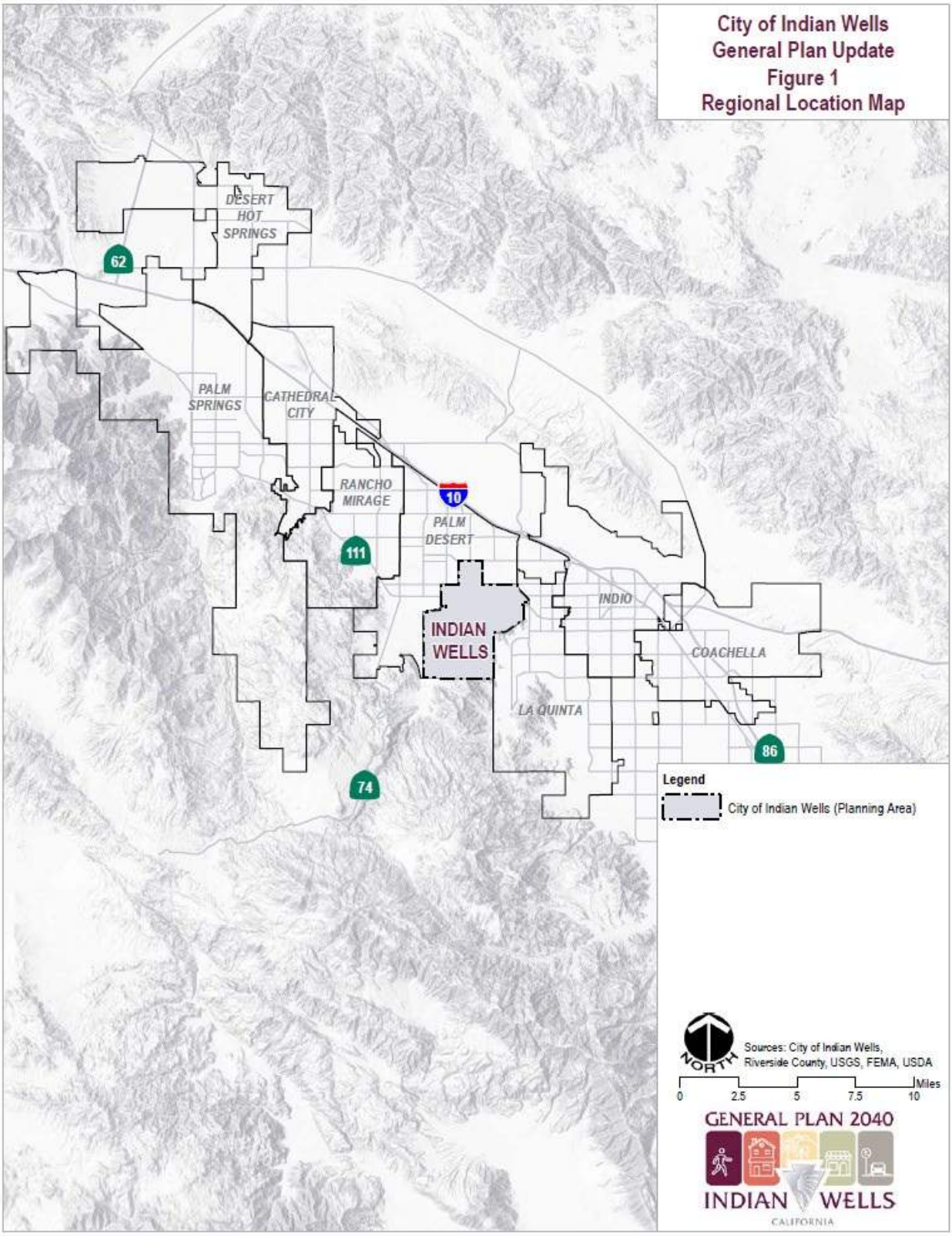
Table 7: Current General Plan Designations

Current General Plan Designation	Acres
Civic, Public Facility	29
Commercial, Community Commercial	88
Commercial, Professional Office	7
Commercial, Resort Commercial	185
Commercial, Sports Complex	63
Low Density Residential	162
Medium Density Residential	46
Medium High Density Residential	18
Open Space, Golf and Recreation	1,317
Open Space, Natural Preserve	195
Open Space, Open Space	4,320
Open Space, Public Benefit (PB-1)	34
Open Space, Public Park	6
Open Space, Watercourse	557
Residential, Very Low Density Residential	2,306
Total	**9,333**

Source: DeNovo Planning Group, Project Description, May 22, 2024.

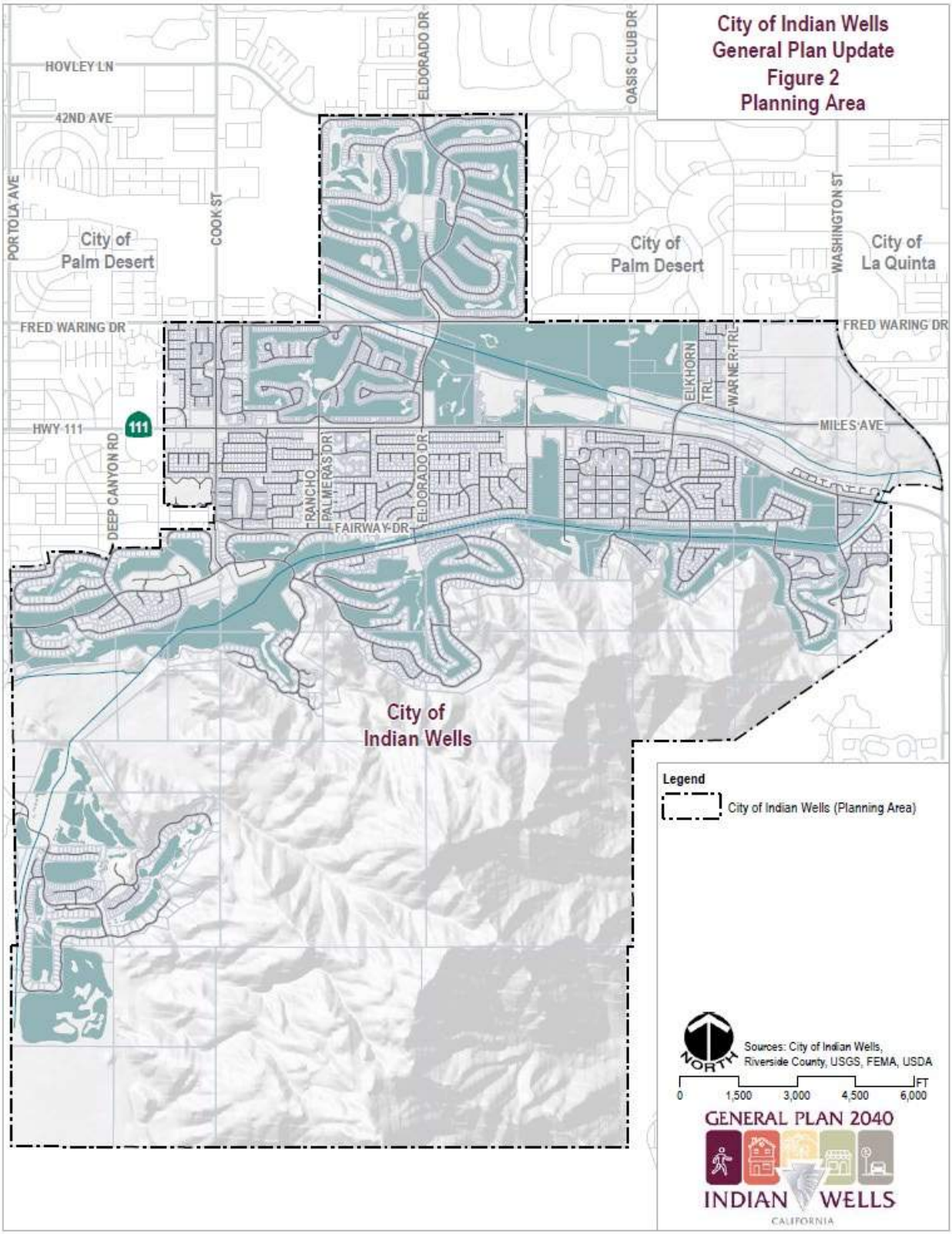
Figure 1 shows the City of Indian Wells (Planning Area) on a regional location map. **Figure 2** illustrates the Indian Wells planning area. **Figure 3** identifies the existing land uses; **Figure 4** identifies the current general plan land use; and **Figure 5** identifies the proposed plan land use.

Figure 1: Regional Location Map



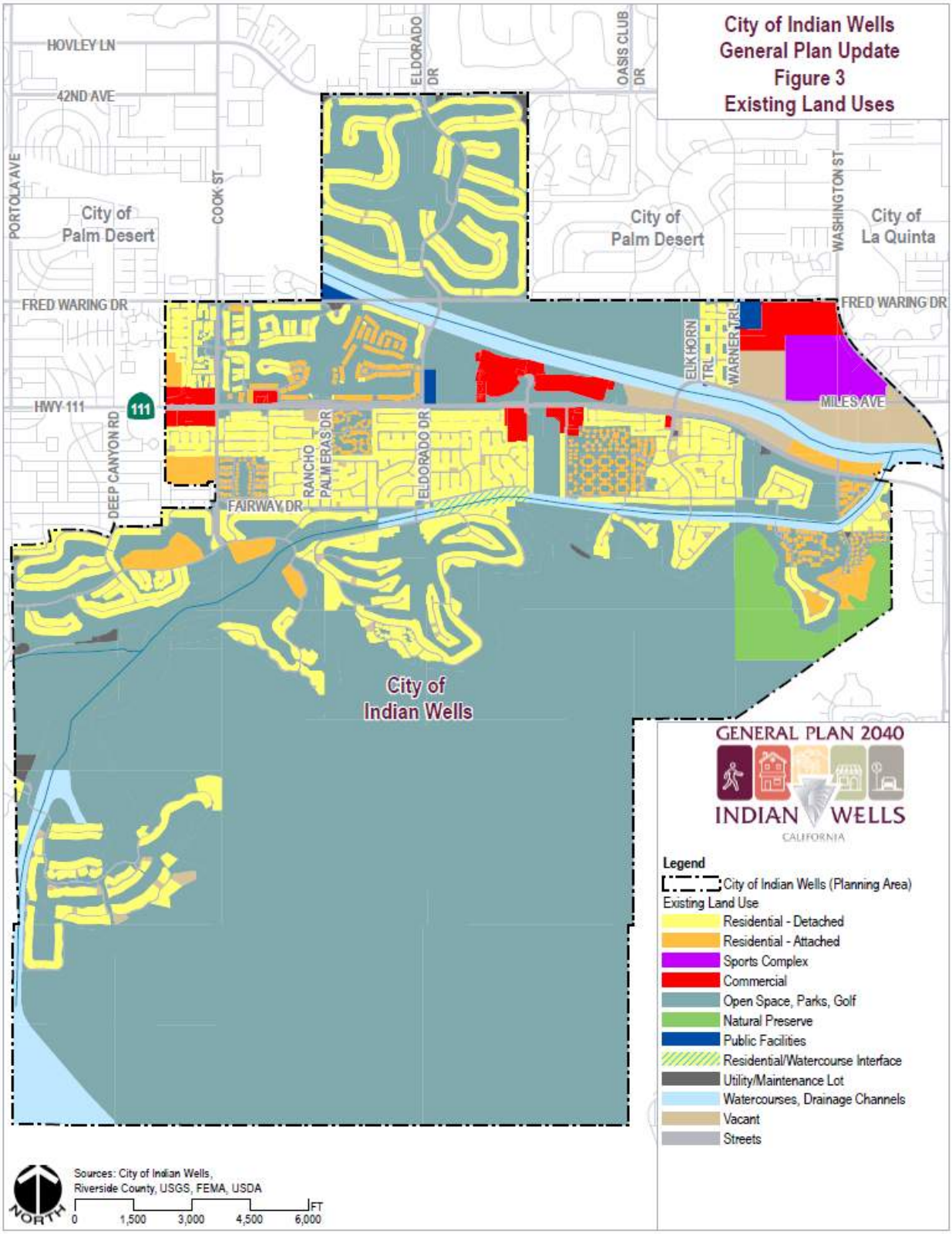
Source: DeNovo Planning Group, 2024.

Figure 2: Planning Area



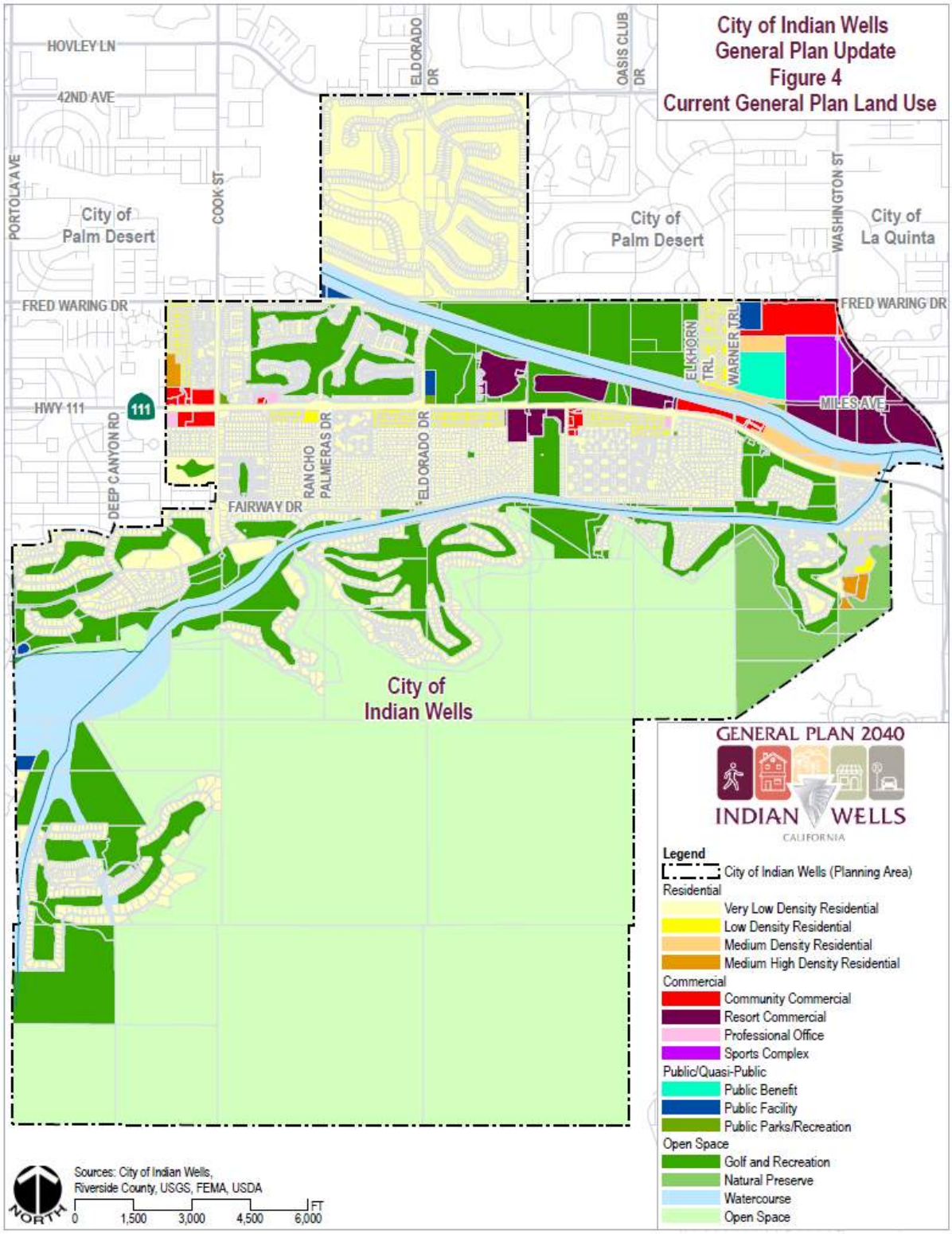
Source: DeNovo Planning Group, 2024.

Figure 3: Existing Land Uses



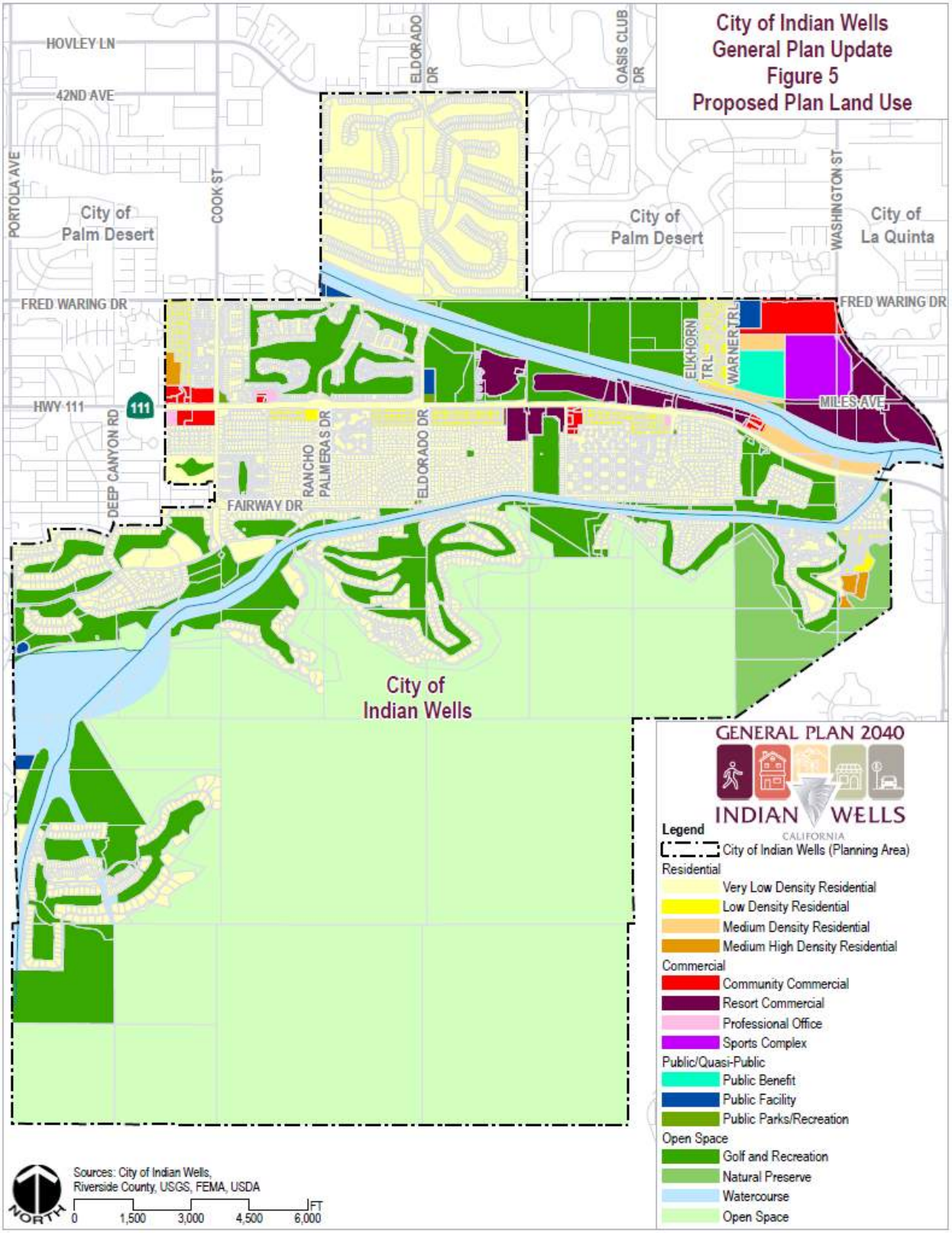
Source: DeNovo Planning Group, 2024.

Figure 4: Current General Plan Land Use



Source: DeNovo Planning Group, 2024.

Figure 5: Proposed Plan Land Use



Source: DeNovo Planning Group, 2024.

CIRCULATION AND PARKING

The General Plan Mobility Element correlates closely with the Land Use Element and identifies the general locations and extent of existing and proposed major thoroughfares, transportation routes, and alternative transportation facilities necessary to support a multi-modal transportation system. This Element is intended to facilitate mobility of people and goods throughout Indian Wells by a variety of transportation modes, including bicycle, pedestrian, and transit.

The Project is not proposing roadway expansions such as adding through lanes to existing roads. The General Plan Mobility Element includes a map of proposed vehicular roadway classifications, as shown in **Figure 6**. The General Plan Mobility Element also includes existing and proposed bicycle and pedestrian networks, as shown in **Figure 7**. **Figure 8** shows the truck routes throughout the City. **Figure 9** shows the neighborhood electric vehicles (NEV) network.

Figure 6: Proposed Vehicular Roadway Classifications

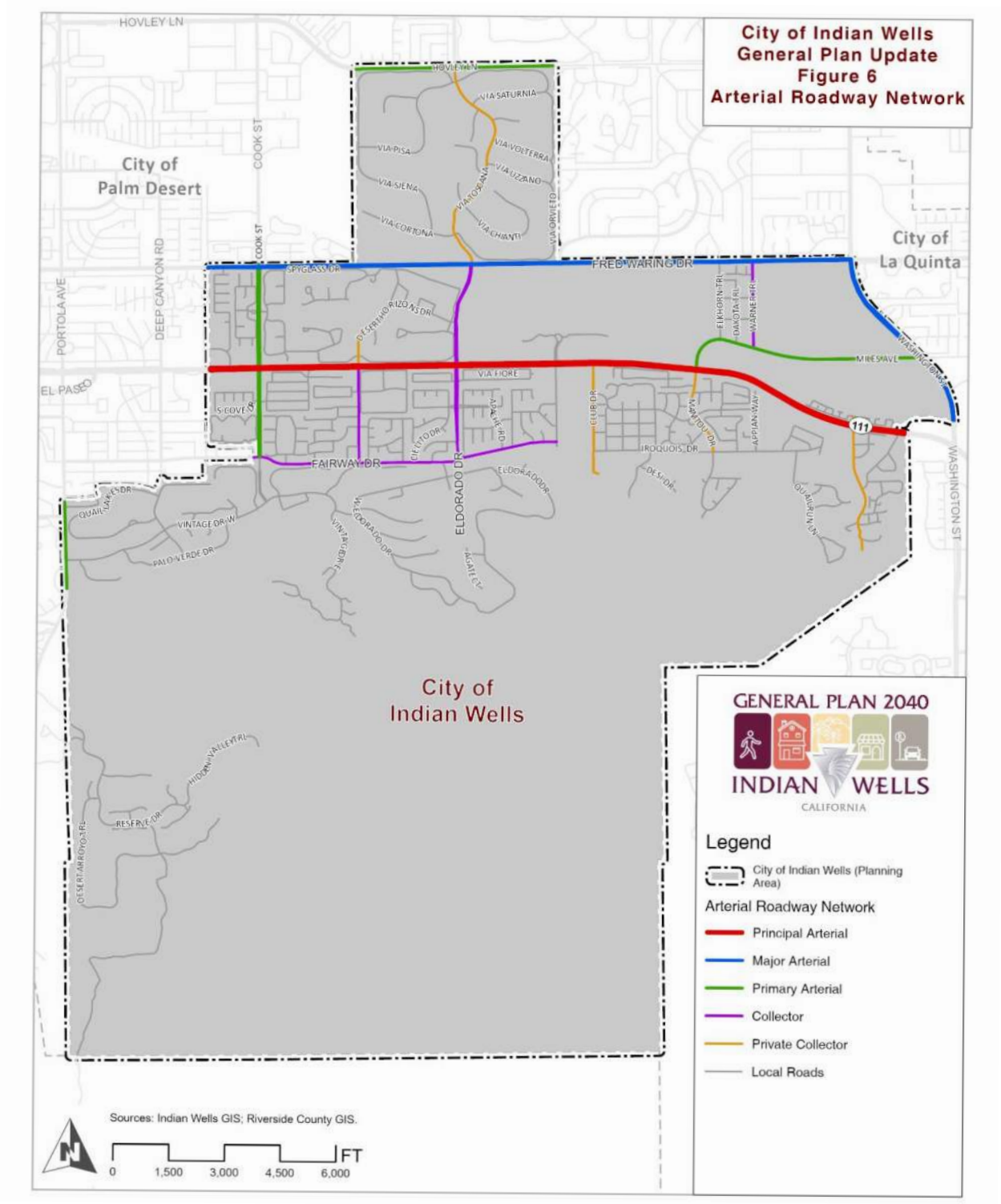


Figure 7: Existing and Proposed Bicycle Network

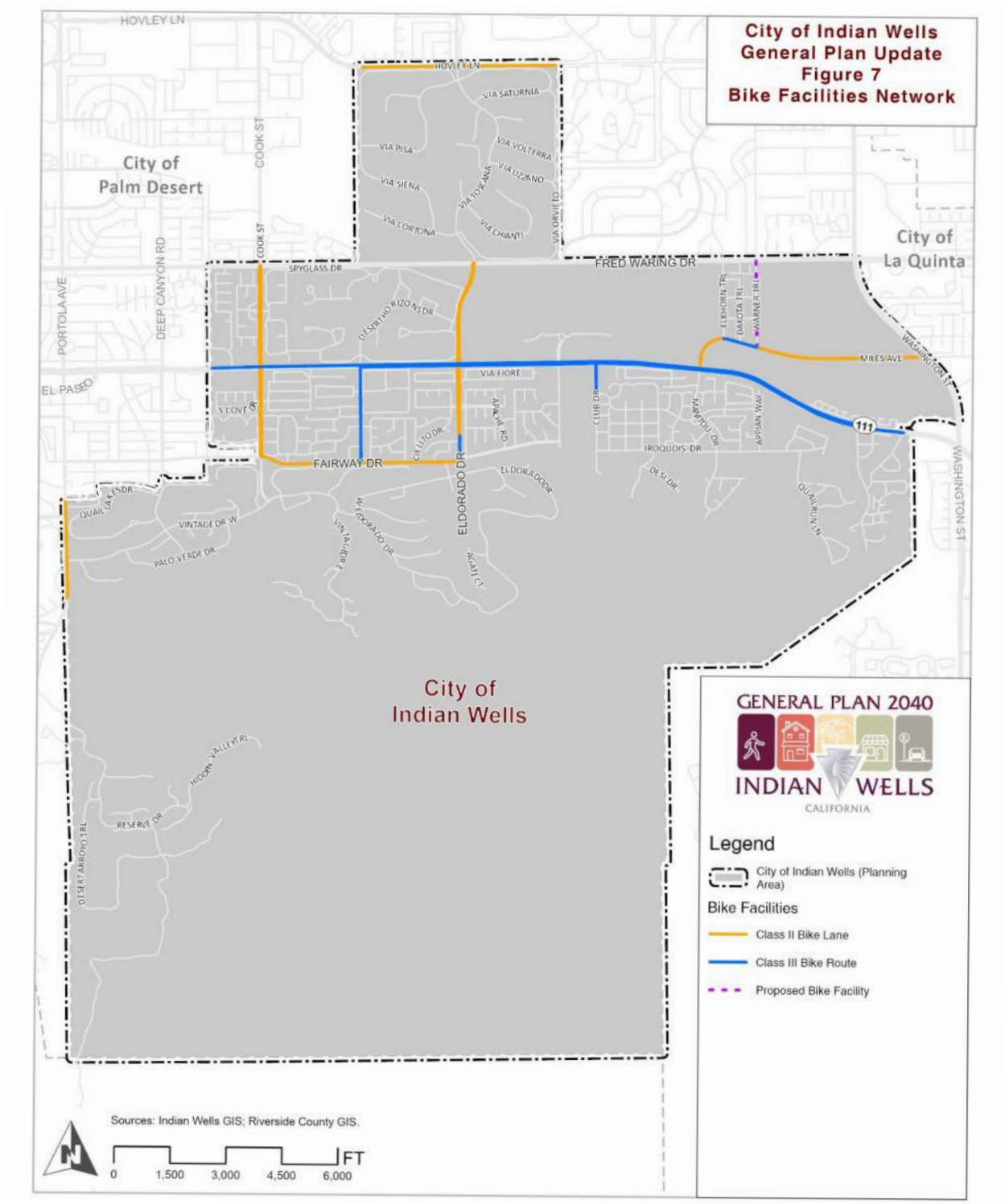


Figure 8: Proposed Truck Routes

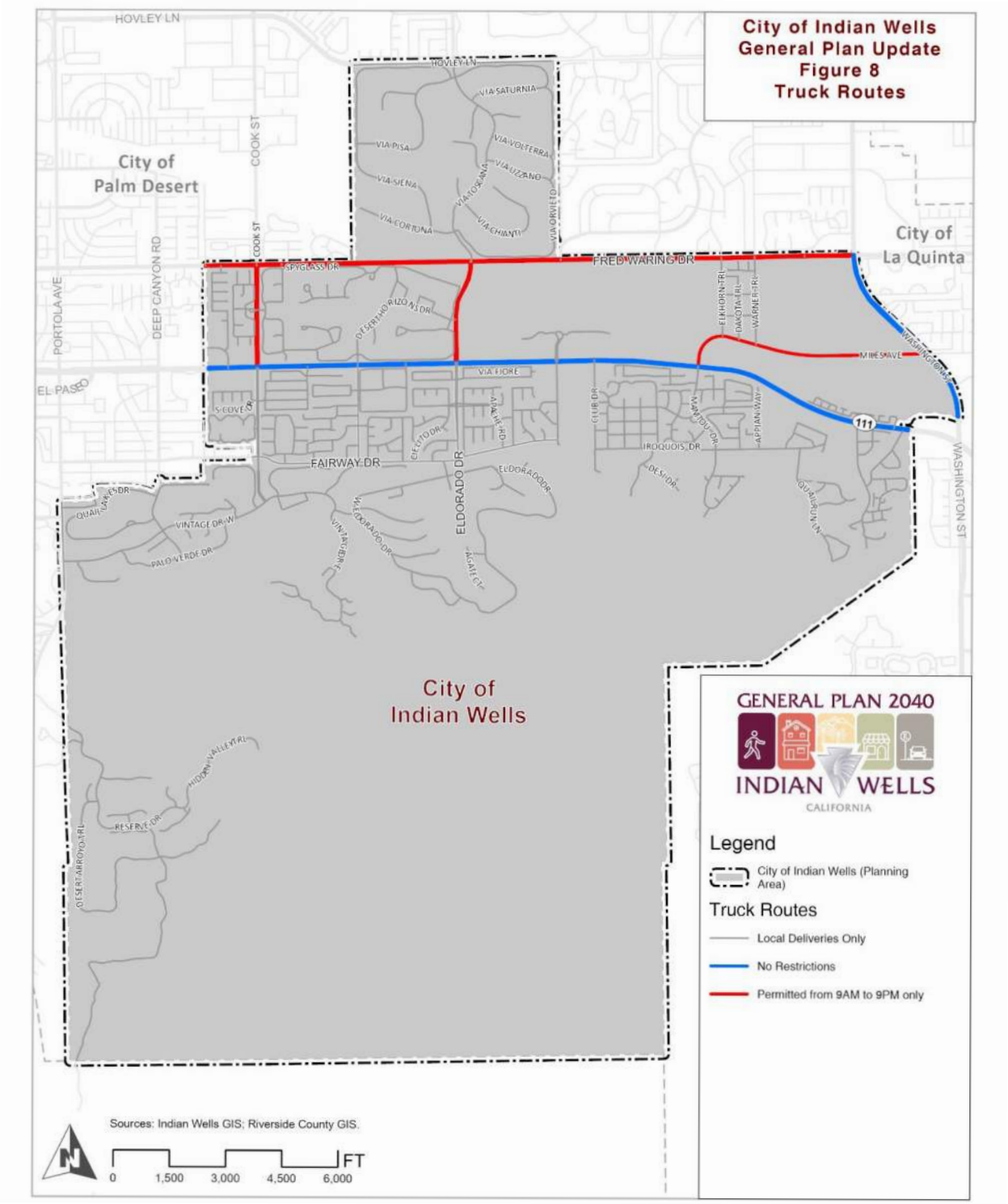
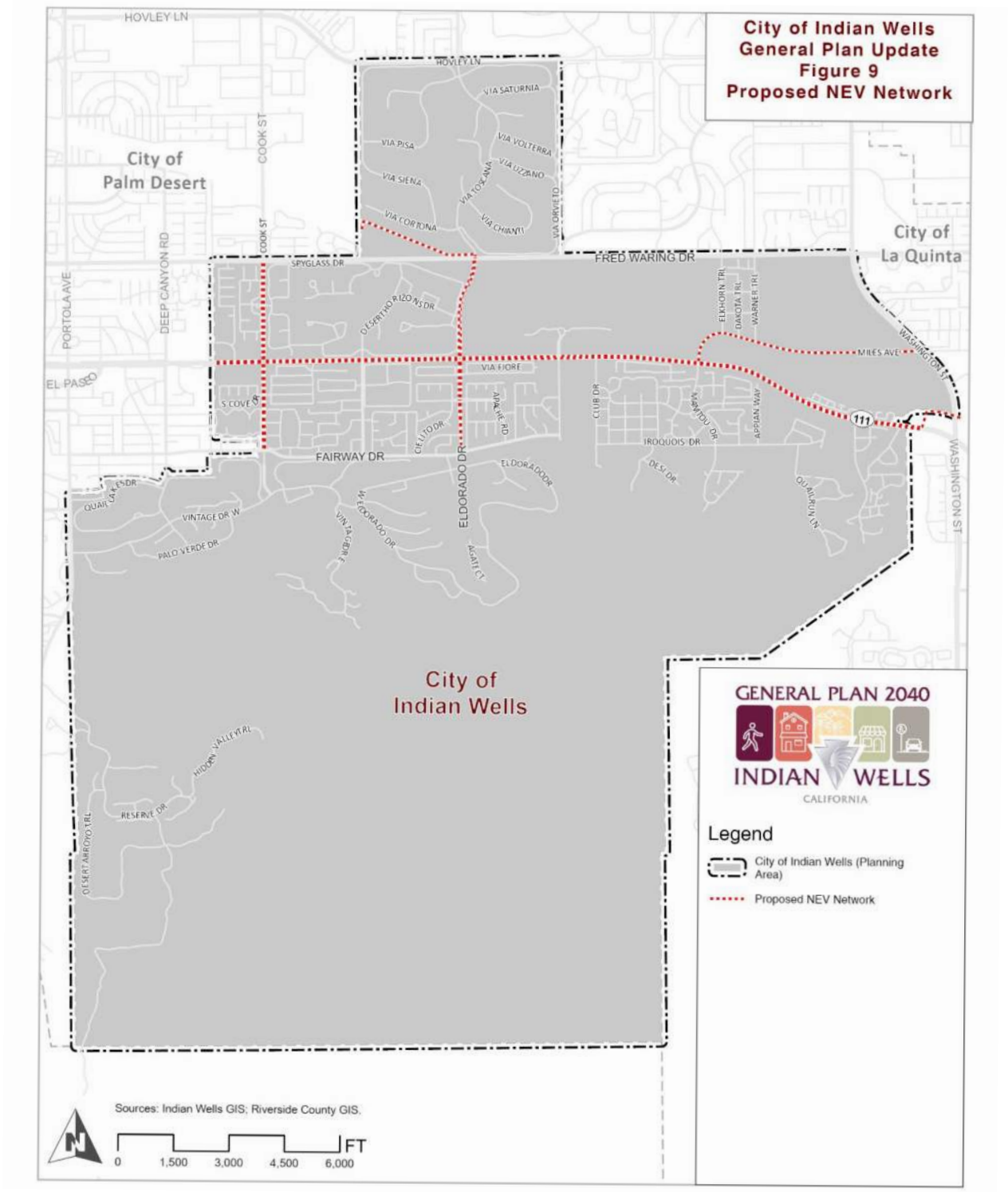


Figure 9: NEV Network



REGULATORY FRAMEWORK

The regulatory framework applicable to the Project includes state, regional and local plans pertinent to the City of Indian Wells and the California Environmental Quality Act (CEQA) review process for transportation and circulation.

STATE REGULATIONS

California Department of Transportation

The California Department of Transportation (Caltrans) manages the operation of state highways and is the primary state agency responsible for transportation issues. One of its duties is the construction and maintenance of the state highway system. Caltrans approves the planning, design, and construction of improvements for all state-controlled facilities, including Interstate 10 (I-10), State Routes 86 and 74 (SR-86 and SR-74), and the associated interchanges. Highway 111 has been relinquished the portion of the road within the City of Indian Wells, the City maintains the road and must ensure the continuity of traffic flow[1]. Caltrans has developed procedures to determine if state-controlled facilities require improvements. For projects that may physically affect facilities under its administration, Caltrans requires encroachment permits before any construction work may be undertaken. For projects that would not physically affect facilities but may influence traffic flow and operational deficiencies at such facilities, Caltrans may recommend measures to address adverse effects from traffic caused by such projects. Caltrans also prepares comprehensive planning documents, including Corridor System Management Plans and Transportation Concept Reports, which are long-range planning documents that establish a planning concept for state facilities.

Freeway segments and intersections associated with freeway on- and off-ramps fall under Caltrans jurisdiction. Caltrans updated its guidance in 2020 to include metrics to evaluate transportation impacts based on vehicle miles traveled (VMT) and no longer sets a minimum acceptable LOS for its facilities. Based on the Caltrans *Vehicle Miles Traveled-Focused Transportation Impact Study Guide*, Caltrans is transitioning away from LOS performance standards and instead focused on VMT to identify significant impacts.

> "For land use projects and plans, automobile delay is no longer considered a significant impact on the environment under CEQA (SB 743, 2013). Caltrans review of land use projects and plans is focused on a VMT metric, consistent with changes to the CEQA Guidelines (California Code of Regulations Section 15064.3(b)(1)). This VMT-focused TISG provides a foundation for review of how lead agencies apply the VMT metric to CEQA project analysis.
>
> Beyond or in addition to the use of the VMT metric, determining how the State Highway System may otherwise be affected by a land use project may still be necessary at times, particularly as it relates to the safety of the traveling public. Additional future guidance will include the basis for requesting transportation impact analysis that is not based on VMT. This guidance will include a simplified safety analysis approach that reduces risks to all road users and focuses on multi-modal conflict analysis as well as access management issues. With this guidance the Department will transition away from requesting LOS or other vehicle operations analyses of land use projects."

OPR General Plan Guidelines

Senate Bill 743 (SB 743) was signed into law in September 2013. Senate Bill 743 (Steinberg, 2013) requires changes to the CEQA Guidelines regarding the analysis of transportation impacts. In December 2018, the California Governor's Office of Planning and Research (OPR) and the State Natural Resources Agency

[1] Source: California Highways (www.cahighways.org): Route 111, last accessed August 22, 2024.

submitted updated CEQA Guidelines to the Office of Administrative Law for final approval to implement SB 743. The Office of Administrative Law approved the updated CEQA Guidelines, thus implementing SB 743 and making VMT the primary metric used to analyze transportation impacts. For land use and transportation projects, SB 743-compliant CEQA analysis became mandatory on July 1, 2020.

CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed under SB 743. It states that in general transportation impacts are best measured by evaluating the project's vehicle miles traveled (VMT). For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact (OPR 2017). The technical advisory serves as a tool for the City to evaluate the effects a development will have on the City's transportation infrastructure, identify improvements required to maintain the Level of Service (LOS) standards and address Section XV (Transportation/Traffic) of Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The City has not adopted VMT criteria to evaluate transportation impacts under CEQA. For the purpose of this analysis, the OPR technical advisory is being used for the traffic impact analysis guidelines.

Assembly Bill 32, Senate Bill 32, and Senate Bill 375

Assembly Bill (AB) 32, also known as the Global Warming Solutions Act of 2006, committed California to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. In 2016, SB 32 added a new target: reducing statewide emissions to 40 percent below 1990 levels by 2030.

SB 375 provides guidance for curbing emissions from cars and light trucks to help California comply with AB 32. There are five major components to SB 375:

- Air Resources Board (ARB) will guide the adoption of GHG emission targets to be met by each Metropolitan Planning Organization (MPO) in the state.
- MPOs are required to create a Sustainable Communities Strategy (SCS) that provides a plan for meeting these regional targets. The SCS must be consistent with the Regional Transportation Plan (RTP).
- Regional housing elements and transportation plans must be synchronized on eight-year schedules. Also, the SCS and Regional Housing Needs Assessment (RHNA) must be consistent with each other.
- CEQA is streamlined for preferred development types such as mixed-use projects and transit-oriented developments (TODs) if they meet specific requirements.
- MPOs must use transportation and air emission modeling methodologies consistent with California Transportation Commission (CTC) guidelines.

California Complete Streets Act of 2008 (AB 1358)

Originally passed in 2008, California's Complete Streets Act took effect in 2011 and requires local jurisdictions to plan for land use transportation policies that reflect a "complete streets" approach to mobility. "Complete streets" comprises a suite of policies and street design guidelines which provide for the needs of all road users, including pedestrians, bicyclists, transit operators and riders, children, the elderly, and the disabled. From 2011 onward, any local jurisdiction—county or city—that undertakes a substantive update of the circulation element of its general plan must consider "complete streets" and incorporate corresponding policies and programs. In 2010, the California Governor's Office of Planning and Research (OPR) released guidelines for compliance with this legislation which provide direction on how circulation elements can best plan for a variety of travel modes such as transit, walking, bicycling, and freight.

REGIONAL REGULATIONS

Coachella Valley Association of Governments (CVAG)

The Coachella Valley Association of Governments prepared a transportation element to compile the existing conditions and needs, policies, standards and recommendations on regional bicycle, trail, and pedestrian facilities throughout the Coachella Valley. CVAG is charged with distributing transportation improvement

funds for member agencies in Coachella Valley including Indian Wells. As the recognized transportation planning agency with the Riverside County Transportation Commission (RCTC), it is the responsibility of CVAG to prepare and adopt a Regional Transportation Plan (RTP) for the Coachella Valley. This is accomplished through the creation of the Transportation Project Prioritization Study (TPPS), which identifies and prioritizes transportation projects in the region. The projects within the TPPS are fed into a larger regional planning effort by CVAG.

Riverside County

The Riverside County Transportation Commission (RCTC) prepares and updates the Congestion Management Plan (CMP) to meet federal Congestion Management Process guidelines. Local agencies must consider the traffic impacts on the CMP System when reviewing and approving development proposals. The RCTC performs studies and develops consensus relative to regional growth forecasts and regional transportation plans. The CMP has been integrated with the 2019 County Long Range Transportation Study. Within Indian Wells, Highway 111 is in the CMP system as Principal Arterials. Principal Arterials in the CMP have a Level of Service (LOS) standard of LOS E. For purposes of this CMP, LOS analysis for intersections and segments along the CMP System of Highways and Roadways (under existing conditions), should be developed using the following HCM-based methods. In cases where the CMP minimum LOS threshold has been exceeded, there have either been overriding considerations (e.g. construction, traffic diversions, etc.) or improvements already programmed to improve the facility through TUMF, Measure A or other high priority projects.

The RCTC adopted the Riverside County's Long Range Transportation Study (LRTS), which identifies and evaluates major roadway and transit projects. A total of 130 State highway and major roadway projects and 57 major local and regional transit projects were identified for inclusion in the LRTS due to their size and/or level of regional significance and are also included in Riverside County's submittal to SCAG for the 2020 RTP/SCS update. In Indian Wells, the widening of Highway 111 from 4 to 6 lanes is included as one of the LRTS projects in Appendix A.

LOCAL REGULATIONS

With the exception private roads, streets in Indian Wells are under the jurisdiction of the City.

Indian Wells General Plan

The current Indian Wells General Plan, adopted in 1995, is the primary planning document for the City and serves to guide development in the city. The General Plan Circulation Element was updated in 2008 and amended in 2016. The General Plan provides the policy framework for the regulation and development of transportation systems, balancing demands for moving people and goods within the city. It addresses vehicular, pedestrian, bicycle, transit, truck, and rail transportation. Parking, transportation system and demand management, and infrastructure funding policies are also included. The General Plan states that all intersections and roadway segments must maintain a Level of Service (LOS) D or better. The current adopted circulation element has the following goals:

- Goal IIC1- Provide a safe and efficient street system that links all parts of the area for movement of people and goods
- Goal IIC2- Provide Indian Wells' residents with a choice of travel modes
- Goal IIC3 – Provide a street system that contributes to residents' quality of life and minimizes impacts to the environment



Existing Circulation System

EXISTING CIRCULATION SYSTEM

ROADWAY NETWORK

The roadway system in Indian Wells consists of major roadways that serve regional traffic demand as well as local roadways that provide access to residential and commercial neighborhoods. In addition, there are private streets within gated residential developments. Interstate facilities also serve the area, though they are not all located within the city limits. The vehicular facilities and the roadway function classification designation according to the City of Indian Wells Circulation Element are discussed below. The major City roads and their roadway functional classifications are presented in **Figure 6.** The map shows the existing and proposed roadway functional classifications, as no changes are being proposed from the adopted plan.

Regional Facilities

Freeways are distinguished from other types of roadways in that abutting lands have no right or easement of access to or from their abutting lands or, in some cases, such owners have only limited or restricted right or easement of access.[2] Freeways that provide regional connectivity and access to other local freeways are described below.

Interstate 10 (I-10) is an eight-lane, east-west divided freeway in its segment located north of Indian Wells To the west, I-10 continues through Riverside and San Bernardino Counties and links to the greater Los Angeles area. To the east, I-10 continues through the Mojave Desert toward Phoenix, Arizona. I-10 is accessible from Indian Wells via two interchanges: Washington Street and Cook Street. The posted speed limit is 70 miles per hour.

Highway 74 runs southwest from Highway 111 in Palm Desert, traverses the San Jacinto Mountains, and provides a key connection to Hemet and South Orange County. Highway 74 is a four-lane facility with bicycle lanes and narrows to a two-lane facility in the mountains. The posted speed limit is 45 miles per hour.

Highway 111 is an east-west major arterial connecting most of the commercial centers of the Coachella Valley. As discussed previously, Highway 111 was relinquished by Caltrans to the City of Indian Wells. Within the city, Highway 111 has four lanes and a raised median, and includes sidewalks on both sides of the road. This limited-access roadway has intersections approximately every half mile. No curbside parking is allowed in the segment within City limits. Highway 111 is designated as a Riverside County CMP roadway. The posted speed limit is 45 miles per hour. Highway 111 is also a designated bike route.

Local Facilities

Fred Waring Drive is an east-west Major Arterial which begins at Highway 111 in Palm Desert and continues east to Indio. Within Indian Wells, it is a six-lane roadway with a raised median. The posted speed limit is 50 miles per hour, and on-street parking is prohibited. Sidewalks are provided on the north side of the roadway from the western city limit to California Trail and from Elkhorn Trail until Warner Trail. East of Warner Trail, sidewalks are provided on both sides of the roadway until the eastern city limit.

Miles Avenue is a four-lane, east-west Primary Arterial that begins at the Whitewater River east of Highway 111 and continues east to Indio. It has a center painted or planted median and Class II bike lanes on either side of the road. Sidewalks are provided on both sides of the roadway east of Warner Trail. West of Warner

[2] California Department of Transportation, 2012, Highway Design Manual, Chapter 60 Nomenclature.

Trail, sidewalks are only available on the south side of the road. The posted speed limit is 50 miles per hour. On-street parking is not provided.

Washington Street is a north-south Major Arterial near the east boundary of the city. Washington Street provides access to the closest freeway interchange to the city on I-10. It is a six-lane roadway with a raised median. The speed limit is 50 miles per hour. On-street parking is prohibited. Sidewalks are provided on both sides of the roadway.

Hovley Lane/42nd Avenue is an east-west Secondary Arterial that begins at Portola Avenue to the west and runs east to Indio. It is located at the northern border of the city. Within the city, it is a four-lane road with a raised median. Sidewalks and Class II bicycle lanes are provided on both sides of the roadway. On-street parking is prohibited.

Cook Street is a north-south Primary Arterial in the west portion of the city. It is a four-lane arterial with a raised median. Class II bike lanes are present on both sides of the road, and a sidewalk is provided on the east side of the road. On-street parking is prohibited. The posted speed limit is 35 to 40 miles per hour. Cook Street also provides access to I-10.

Portola Avenue is north-south roadway that borders the west end of the city. It is a four-lane undivided roadway with sidewalks on the east side of the road and Class II bike lanes in both directions. The posted speed limit is 40 miles per hour. On-street parking is not provided.

Eldorado Drive is four-lane, north-south Collector road with a raised median and Class II bicycle lanes. The posted speed limit is 35 to 40 miles per hour. Eldorado Drive begins at Frank Sinatra Drive to the north and continues south into Indian Wells. Eldorado Drive stops at Hovley Lane, where it transitions into a private road through a country club, and then continues south of Fred Waring Drive. On-street parking is not provided.

PEDESTRIAN FACILITIES

Indian Wells offers several types of facilities and amenities that support walking in the city. The availability and quality of pedestrian facilities vary throughout the city and can be analyzed using seven key factors as shown in **Table 8**.

Table 8: Pedestrian Facility Conditions in Indian Wells

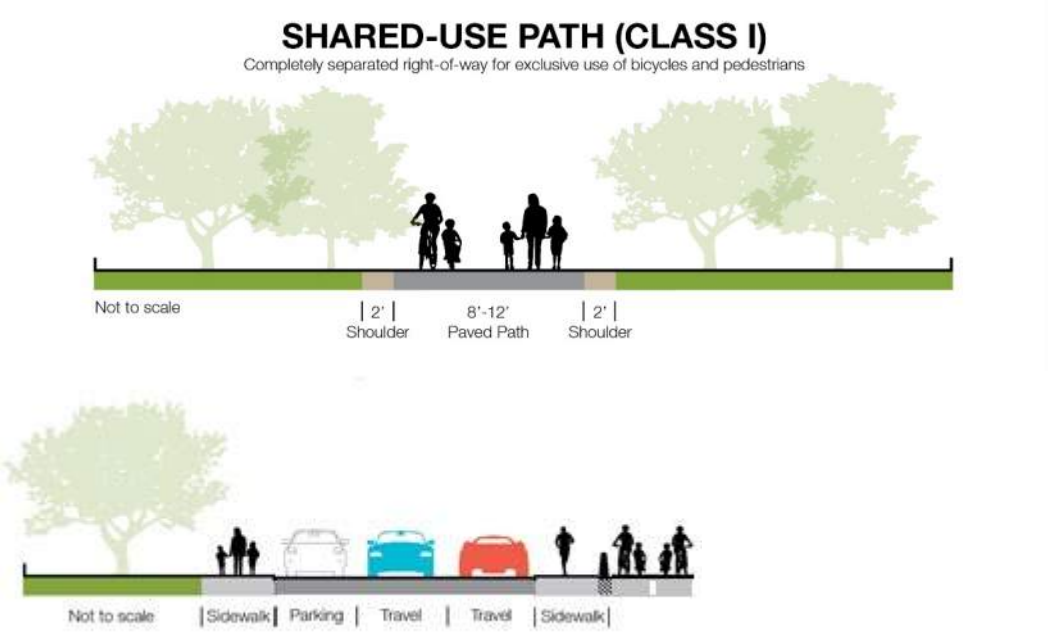
Factor	Description	Assessment
	Sidewalk availability is core to supporting walkability and safety, separating pedestrians from vehicles and other modes. In addition, it is important that sidewalks are present on both sides of the roadway and available along the entire segment rather than end midblock.	Sidewalks are generally provided on only one side of most arterial streets across the city. A number of sidewalk coverage gaps exist, including along Eldorado Drive south of Highway 111, Cook Street south of Highway 111, and Rancho Palmeras Drive. Most local residential streets do not have sidewalks.
	Cracked, broken, or otherwise damaged sidewalks can pose a safety hazard and discourage walking.	Sidewalks in the city are generally in good condition.
	Marked crosswalks can safely accommodate pedestrians that need to cross streets. A lack of marked crosswalks could hinder walkability since pedestrians need to travel greater distances to reach a safe marked crossing point. Drivers may also be less likely to yield to intersections at unmarked crossings.	Marked crosswalks are consistently provided at major intersections across the city. Minor streets often do not have marked crosswalks.
	Shading, whether natural or artificial, can encourage walking in areas such as Southern California which are relatively warm with limited rainfall, especially in the summer.	Most major streets do not have much shade.
	Steep hills and ravines can discourage walking, especially for pedestrians with limited mobility.	The city has a flat grade throughout all pedestrian facilities.
	Buffers which provide separation between pedestrians and moving vehicles can help improve the walking experience, and can include landscaping, parked vehicles and bulbouts, which serve both to reduce pedestrian crossing distances at intersections and as a traffic calming measure.	Along Highway 111, Fred Waring Drive, Cook Street, and Hovley Lane, sidewalks are buffered by a planting strip. Eldorado Drive and Miles Avenue do not have buffered sidewalks.
	In addition to physical facilities that accommodate walking, useful or interesting amenities along sidewalks create a more interesting walking environment and increase pedestrian comfort. Amenities can include sidewalk-adjacent retail and restaurants, landscaping, and street furniture.	Arterial roads offer very few pedestrian amenities. Most retail locations in Indian Wells are not street facing.

BICYCLE FACILITIES

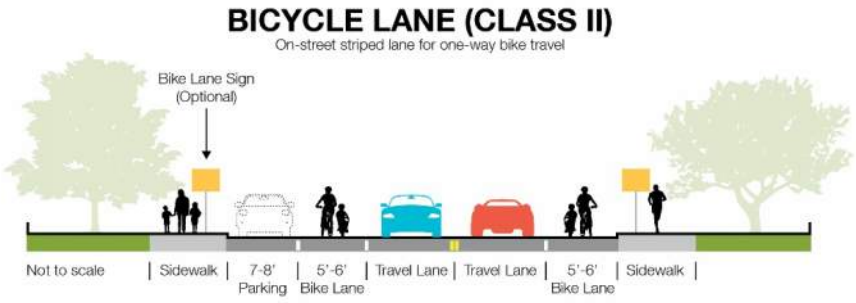
The City of Indian Wells has a bicycle facilities network that consists of both dedicated and shared street space for bicyclists. **Figure 7** displays the existing designated bicycle facilities in the city.

Bicycle facilities are categorized into four types, as described and depicted in illustrations below. Note that while the graphics include typical widths for the various facilities, the exact configuration of a bike facility can vary depending on its location and the jurisdiction's preferences.

- **Class I Bikeway (Bike Path).** Also known as a shared path or multi-use path, a bike path is a paved right-of-way for bicycle travel that is completely separate from any street or highway.



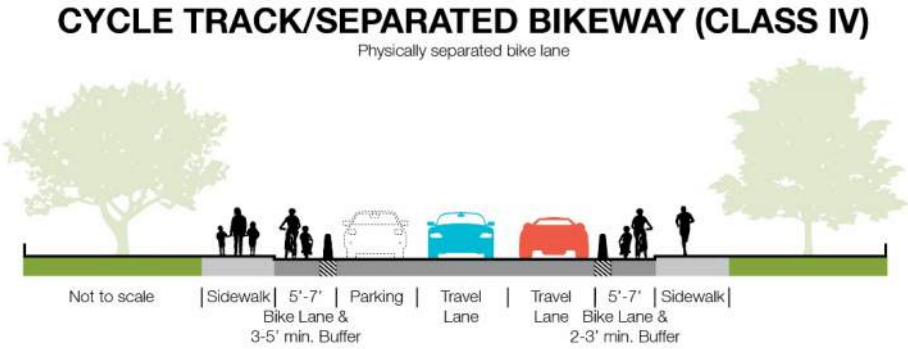
- **Class II Bikeway (Bike Lane).** A striped and stenciled lane for one-way bicycle travel on a street or highway. This facility could include a buffered space between the bike lane and vehicle lane, and the bike lane could be adjacent to on-street parking.



- **Class III Bikeway (Bike Route).** A signed route along a street where the bicyclist shares the right-of-way with motor vehicles. This facility can also be designated using a shared-lane marking (sharrow).



- **Class IV Bikeway (Separated Bike Lane).** A bikeway for the exclusive use of bicycles including a separation required between the separated bikeway and the through vehicular traffic. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.



As shown in **Figure 7**, the existing bicycle facilities in Indian Wells include:

- Class III bicycle route along Highway 111
- Class III bicycle route on Rancho Palmeras Drive
- Class II bicycle lane on Fairway Drive
- Class II bicycle lane on Miles Avenue
- Class III bicycle route on Miles Avenue between Warner Trail and Elkhorn
- Class II bicycle lane on Eldorado Drive
- Class II bicycle lane on Cook Street
- Class II bicycle lane on Hovley Lane
- Class II bicycle lane on Portola Avenue

These bicycle facilities connect to bicycle facilities in adjacent Cities providing a connected bicycle network in the Coachella Valley. In particular, the bicycle facilities on Highway 111 and Hovley Lane connect to east-west bicycle facilities in Palm Desert, La Quinta and beyond. In addition, the bicycle facilities on Portola Avenue, Cook Street and Miles Avenue connect to bicycle facilities in Palm Desert and beyond in the north-south direction. The bicycle lane on Portola Avenue within City limits is also a designated golf cart lane. The City allows golf carts on all private and public roadways within a one-mile radius of a golf course.

TRANSIT SERVICE

SunLine Transit Agency provides local bus service and shared-ride paratransit service within Indian Wells and throughout the Coachella Valley. In addition, transit riders can access Amtrak commuter rail in Palm Springs and Amtrak bus stops in Palm Desert, La Quinta, and Indio.

SunLine Transit Agency

SunLine Transit Agency provides bus service in the Coachella Valley. It connects Indian Wells with several nearby cities, such as Palm Desert, Rancho Mirage, Palm Springs, Indio, and Coachella. The fare is $1.00 per passenger, with discounts for youth, senior, and disabled riders. SunLine operates the SunRide, which is $3.00 one-way per person and includes one transfer to SunBus. SunLine also operates SunDial Paratransit Service. Paratransit service is $1.50 within the same city and $2.00 if riders want to travel between cities, and reservations are required.

Table 9 summarizes the route information for all SunLine routes that serve Indian Wells as of July 23, 2024.

Table 9: SunLine Transit Service in Indian Wells

#	Streets Served	Destinations Served	Hours of Operation	Headways (minutes)	
				Peak	**Off- Peak**
1EV	Highway 111	Palm Desert Mall, JFK Hospital, Indio Courthouse, Downtown Coachella	5:00 AM – 11:00 PM	30	30
7	Washington St	Indian Wells Tennis Garden	5:15 AM – 9:30 PM	45	90
6	Fred Waring Dr	Indian Wells Tennis Garden	6:00 AM – 8:00 PM	45	60
5	Cook St, Fred Waring Dr	Palm Desert High School	6:30 AM – 7:30 PM	60	N/A

Peak times are generally between 6:00 AM to 7:00 PM.
Bus routes and schedules shown as of July 23, 2024 and are subject to change by SunLine Transit Services.
Source: sunline.org

Amtrak

Amtrak operates intercity and interstate rail service nationwide. Currently, there are no Amtrak stops located within the city, but residents can access Amtrak Sunset Limited line. It serves the Palm Springs Amtrak station located at North Indian Canyon Drive and Palm Springs Station Road, which is approximately 20 miles from Indian Wells City limits. Amtrak bus stops are also located in Palm Desert, Indio, and La Quinta.

FREIGHT AND GOODS MOVEMENT

Truck routes in Indian Wells are located along Highway 111 and Washington Street. Truck routes with time restrictions (i.e., trucks are allowed only from 9:00 AM to 9:00 PM) are located along Miles Avenue, Fred Waring Drive, Cook Street between Highway 111 and Fred Waring Drive between Highway 111 and Fred Waring Drive. Other public roadways allow local deliveries only, and private roadways only allow deliveries with permission. North of the City, I-10 is a nationally designated truck route. Truck routes within the City are shown in **Figure 8.**



CEQA Analysis

CEQA ANALYSIS

TRANSPORTATION SIGNIFICANCE CRITERIA

In accordance with Appendix G of the CEQA Guidelines, the Project would be considered to have a significant transportation impact if it would:

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 because of a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
d) result in inadequate emergency access.

SPECIFIC TRANSPORTATION THRESHOLDS

The following specific thresholds are used for the CEQA categories.

Conflict with Program/Plan/Ordinance/Policy

The following thresholds are used to evaluate impacts for CEQA Appendix G Item (a).

The Project will be qualitatively evaluated to determine if it is expected to conflict with a relevant programs, plans, ordinances, and policies related to the circulation system. A conflict could occur if the proposed Project would preclude the ability of Indian Wells to implement its goals or policies. For the purpose of this analysis, the Project could result in a significant impact if it results in a conflict with any adopted City of Indian Wells programs, plans, ordinances, and policies.

Generally, a plan/project causes a significant impact to transit facilities and services if an element of it conflicts with existing or planned transit services. The evaluation of transit facilities shall consider if:

- a plan or project or related mitigation disrupts existing transit services or facilities;
- a plan or project or related mitigation conflicts with an existing or planned transit facility; or
- a plan or project or related mitigation conflicts with transit policies adopted by the City of Indian Wells for its respective facilities.

The City's Circulation Element describes the related policies necessary to ensure that pedestrian and bicycle facilities are safe and effective for Indian Wells residents, employees and visitors. Using the Mobility Element as a guide, significant impacts to these facilities would occur when a plan or project:

- creates a hazardous condition that currently does not exist for pedestrians and bicyclists, or otherwise interferes with pedestrian accessibility; or
- conflicts with an existing or planned pedestrian or bicycle facility; or
- conflicts with policies related to bicycle and pedestrian facilities as adopted by the City of Indian Wells for its respective facilities.

Conflict with CEQA Guidelines for VMT

The following thresholds are used to evaluate impacts for CEQA Appendix G Item (b). As previously discussed, the City has not adopted VMT thresholds and has not published guidelines for the preparation of transportation studies. Under CEQA, lead agencies have the discretion to choose the most appropriate methodology to evaluate VMT and have discretion to choose their own significance thresholds. OPR provided a Technical Advisory containing guidelines related to VMT analysis methodology, thresholds, and mitigation. In Metropolitan Planning Organization (MPO) counties, OPR recommends that the significance threshold for residential and office projects be based on comparisons of VMT/capita and VMT/employee generated by the project to regional and city-wide average values. Lead agencies are encouraged in Section 15064.7 of the CEQA Guidelines to adopt significance thresholds through a formal adoption process but may also apply thresholds on a case by case basis. Since the City has not officially adopted VMT thresholds and guidelines for the preparation of transportation studies, this analysis relies on guidance from the OPR technical advisory to evaluate CEQA guidelines for VMT.

The OPR recommended thresholds for residential and office land uses as follows:

- Residential: A project exceeding a level of 15 percent below existing VMT per capita for the city or region may indicate a significant transportation impact.
- Office: A project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact.

For typical land development projects, such as residential, office, and commercial spaces, the VMT comparison is normally done under the baseline year (2024). Since the General Plan is anticipated to take multiple years to be implemented and developed, it is more appropriate to calculate the project-generated VMT under the long-term 2045 horizon year (which would be consistent with the anticipated implementation of the General Plan). Based on this approach, if the VMT per capita or VMT per employee is lower in the horizon year with the Plan than the respective metrics under existing conditions, the Plan would have a less than significant impact on VMT. In summary, the following VMT thresholds apply as project impacts:

- The general plan's residential generated VMT under horizon conditions would be compared to 15% below the baseline region-wide VMT/capita average to determine impact significance.
- The general plan's office generated VMT under horizon conditions would be compared to 15% below the baseline region-wide VMT/employee average to determine impact significance

Increase Hazards Because of a Geometric Design Feature

The following threshold is used to evaluate impacts for CEQA Appendix G item (c).

Any project that causes a substantial increase in on-street hazards due to geometric design will potentially result in a significant impact. Generally, a plan/project causes a significant impact to hazards if the area plan creates an unsafe geometric design feature in the transportation system. The evaluation of hazards shall consider if:

- The Project creates a change in the transportation system which introduces an unsafe design feature.

Inadequate Emergency Access

The following threshold is used to evaluate impacts for CEQA Appendix G item (d).

Generally, a project causes a significant impact to emergency access if it creates an area with inadequate emergency access. The evaluation of emergency access shall consider if:

- The Project creates a change in land uses or the transportation system which result in inadequate emergency access to one or more areas.

CEQA ANALYSIS METHODOLOGY

Because SB 743 eliminated the use of LOS for CEQA impact analysis purposes, road capacity analysis is not included in this CEQA analysis section. Under CEQA, the primary quantitative measure to evaluate transportation impacts is VMT. This transportation analysis provides an analysis of potential transportation impacts under current CEQA criteria. A local transportation analysis is included under the non-CEQA section of this report to evaluate effects associated with implementation of the Project in terms of roadway capacity and LOS.

TRAVEL DEMAND MODEL

This study assesses the changes in VMT from existing with 2045 Proposed General Plan (Project) conditions to identify if the Project would result in an increase in VMT per capita and VMT per employee. The applicable VMT significant impact thresholds are described above. Baseline (2024) VMT and Cumulative VMT were extracted using the Riverside County Transportation Model (RIVCOM) to maintain consistent data sources.[3] Calculations for the VMT for the Project was determined for the traffic analysis zones (TAZs) that comprise the study area (City limits and sphere of influence).

The RIVCOM model is a complex system that analyzes road networks, socio-economic data, driver behavior, and goods movement to predict where traffic flow will occur as the population grows and changes. While the RIVCOM model covers the entire SCAG region, Riverside County is the focus of analysis, and the model data is more disaggregated within the County as opposed to other areas of the region. The RIVCOM regional travel model evaluates travel throughout the CVAG region, and uses the TransCAD software. The model groups land uses in the region into transportation analysis zones (TAZs). The model uses a series of calculation steps to estimate travel associated with the land uses and transportation network.

- **Trip Generation:** How many daily trips by trip purpose are generated by each land use in each TAZ
- **Trip Distribution:** How many trips of each type travel to each other TAZ
- **Mode Choice:** Which travel modes are used by people of different demographic categories for trips of different purposes between each origin and destination, including auto, transit, bicycle and walk modes
- **Time of Day:** Which trips are made during peak hours versus off-peak hours
- **Trip Assignment:** Which routes are used by each vehicle trip or transit trip

The daily activity patterns in the travel model are based on a statistical analysis of a household travel survey, where a representative sample of households were asked to track all daily activities and trips by all members of their household. The travel model was calibrated to these surveyed travel patterns, and also validated by its ability to replicate counted traffic volumes, transit ridership, and total VMT from the Highway Performance Measurement System (HPMS) which is based on traffic counts.

Modelled Scenarios

The following scenarios were reviewed and developed to provide VMT and roadway segment forecasts:

- **2024 Base Year:** corresponds to the model base year conditions. It consists of the existing circulation network and 2045 land use profile.
- **2045 with Project:** corresponds to 2045 conditions with maximum development potential with the Project.

[3] The baseline 2024 VMT was obtained by interpolating the 2018 base year and the long range 2045 model results.

Land Use

The RIVTAM travel model requires land uses to be defined for each geographic area in the county. The model defines land uses in TAZs which are typically bounded by major arterial or collector streets and are generally subdivisions of Census tracts. The model land use inputs include numbers of households and employees by employment category, as well as enrollment at schools.

A detailed mapping of parcels and allowable development was compiled to determine the maximum buildout potential of each parcel and planning area with both the City's currently adopted General Plan (for No Project conditions) and the Project's proposed land use map (for Project conditions). **Table 10** compares the land use assumptions for the existing, current general plan, and proposed general plan scenarios.

Table 10: Land Use Assumptions

	Existing	Current GP/BAU	Proposed GP
Units	**5,043**	**6,271**	**6,271**
Single Family	*4,694*	*5,455*	*5,455*
Multifamily	*349*	*816*	*816*
Population	**4,347**	**5,405**	**5,405**
Single Family	*4,046*	*4,702*	*4,702*
Multifamily	*301*	*703*	*703*
Nonresidential SF	**1,546,833**	**5,132,104**	**5,159,667**
Jobs	**1,509**	**6,217**	**6,310**

Source: Iteris, 2024.

Transportation Networks

The travel model contains representations of transportation networks for all travel modes. The model road network includes all freeways, highways, arterial streets, most collector streets which provide connectivity between neighborhoods, and selected local streets. The roads are coded with information on functional classification, number of through lanes, speed and capacity.

All regular weekday transit routes are coded in the model. Bus routes are assumed to run on the streets and be subject to varying congested conditions on those streets. Rail transit operates on separate facilities and is not affected by road congestion. The model also has a general representation of transit stop locations and park-and-ride access.

Bicycles and pedestrians are assumed to have access to all streets except freeways.

The transportation networks included in the model files provided by RIVTAM corresponds to the existing and currently adopted general plan circulation network.

Future Travel Trends

The model presumes that future background travel options and behaviors remain similar to current conditions and does not explicitly account for potential changes associated with disruptive trends, emerging technologies, and changes in travel preferences. As a result, the travel model is likely to represent a conservative estimate of future amounts of commuting, vehicle use and VMT.

IMPACT ANALYSIS

The following provides an evaluation of the Project's (1) potential conflicts with City's programs, plans, ordinances, and policies, (2) impacts in terms of VMT, (3) potential geometric design hazards, and (4) impacts to emergency vehicle access.

IMPACT 1: CONSISTENCY WITH CIRCULATION SYSTEM PROGRAMS

SIGNIFICANCE CRITERION A: *Would the proposed plans conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?*

The following reviews consistency with policies and programs related to transit, pedestrian, vehicular, and bicycle travel.

Roadway

No specific development projects are proposed as part of the Indian Wells General Plan Update. The update will accommodate future growth in the City, including new businesses, expansion of existing businesses, and new residential uses. Therefore, the proposed general plan would not conflict with roadway policies adopted by the City of Indian Wells or Riverside County for their respective facilities.

Pedestrian and Bicycle Travel

Compared to the adopted plan and existing conditions, the Project would add a bicycle facility to Warner Trail. In addition, the project would not create a hazardous condition that currently does not exist for pedestrians and bicyclists, or interfere with pedestrian accessibility.

Coachella Valley Link, or CV Link, is envisioned as a 40-mile valley wide pathway accessible to bicyclists, pedestrians, and low-speed electric vehicles, and is being built largely along the Whitewater River, extending from Palm Springs to Coachella. The approved project was voted on by the CVAG Executive Committee in May 2017 and does not include routes through Rancho Mirage or Indian Wells. The Project maintains the existing and planned bike facilities that would provide for bicycle and pedestrian travel to and from the City allowing CV link connectivity to and from Palm Desert and La Quinta. The plan does not eliminate bicycle and pedestrian connections and includes policy M2.7, which directs the City to provide safe and efficient travel options through the City for CV Link users. Policy M-2.4 also directs the City to encourage new development to provide safe pedestrian and other non-motorized access and internal bike and pedestrian paths.

The Project is consistent with the goals and policies of Indian Wells's Circulation Element by providing a safe and efficient street system that links all parts of the area for movement of people and goods, as stated in Goal IIC1 (Roadway Improvements), and by providing Indian Wells' residents with a choice of travel modes, Goal IIC2 (Travel Modes). Goal IIC3 (Quality of Life) of the Circulation Element directs the City to provide a street system that contributes to residents' quality of life and minimize impacts on the environment.

Transit

The proposed Mobility Element update includes a goal that "a variety of travel modes are provided to residents, workers and visitors" (Goal M-2 Multi-modal Mobility Network). Additionally, the proposed Mobility Element includes transit policies to encourage the use of alternative modes of transportation including public transit (Policy M-2.2), and to participate with regional agencies and cities to ensure that rail capacities continue to meet the needs of residents (Policy M-2.9).

The Project would not conflict with transit policies adopted by the City of Indian Wells or transit services from other agencies for their respective facilities.

Conclusion

In summary, a review of the Project's land use and circulation characteristics revealed no potential policy inconsistencies or conflicts with policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities or the performance or safety of those facilities. Additionally, the City has numerous policies supporting complete streets and to promote use of transit and active transportation. Therefore, with respect to conflicts with circulation system policies, the impact of the Project would be less than significant.

IMPACT 2: VEHICLE MILES OF TRAVEL

SIGNIFICANCE CRITERION B: *Would the proposed plans conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

The proposed plans were assessed for VMT to comply with SB 743 requirements and CEQA Guideline section 15064.3, subdivision (b).

Applicable Thresholds

As previously discussed, the VMT significant impact thresholds are:

- Project Threshold: a significant impact would occur if the project's 2045 VMT per capita or VMT per employee exceeds 15 percent below the existing CVAG countywide average VMT per capita, or VMT per employee, respectively.
- Cumulative Threshold: if a project level impact occurs, a significant impact would also occur. As described in OPR's SB743 Technical Advisory, "A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa. "

VMT Project Impact Assessment

Table 11 summarizes the VMT results for the 2024 baseline, the applicable thresholds to evaluate potential project impacts, and the VMT under the adopted and proposed General Plan. Additional details are included in Appendix A.

Table 11: VMT Generated by Land Uses within the Project Area

Units	Existing (2024)	2045 Adopted General Plan (No Project)[1][4]	2045 Proposed General Plan (Project)
Capita			
VMT Per Capita	25.4	22.6	22.6
Impact Threshold[1]	N/A	N/A	14.0
EXCEEDS THRESHOLD	**N/A**	**N/A**	**YES**
Employee			
VMT Per Employee	31.5	27.9	27.9
Impact Threshold[1]	N/A	N/A	30.1
EXCEEDS THRESHOLD	**N/A**	**N/A**	**NO**
Total Project VMT			
City of Indian Wells	347,400	538,149	542,972

Source: Kittelson and Associates, 2024.
[1] Impact threshold is 15% below CVAG 2024 base year value
N/A = not applicable.

Future conditions with the Project (2045 Proposed General Plan) would result in decreased VMT per employee and VMT per capita in comparison to 2024 baseline conditions. In other words, the Project results in less VMT per capita and VMT per employee, as it provides a more efficient distribution of land uses that promotes less trips and shorter distances. The total VMT would increase compared to existing conditions because the Project accommodates more employment and population. The reductions from the 2024 to the future year indicate that future development, in particular planned mixed-use development, will provide more opportunities for Indian Wells residents and employees to access jobs and services within shorter distances. The shorter trip distances reduce VMT by vehicles, and also increase the likelihood that trips will be made by non-auto modes such as bicycling and walking. Improved transit service and accessibility to transit also help to reduce VMT even as travel activity increases.

However, the impact thresholds are based on a comparison against 15% below of the CVAG region. The impact threshold for residential VMT would be exceeded for the Project, as the VMT per capita of 22.6 exceeds the 14.0 threshold. The impact threshold for office VMT would not be exceeded. Therefore, with respect to consistency with CEQA Guidelines Section 15064.3, subdivision (b), the VMT impact of the Project related to VMT/capita would be significant.

Buildout of the General Plan would result in VMT per capita impacts and would require a reduction of approximately 40% to meet the threshold. However, even with the implementation of these policies would not provide a sufficient reduction to reduce the VMT per capita from 22.6 to 14.0. A reduction of this magnitude is not feasible. Future development projects consistent with the General Plan would need to consider incentives to use transit; incentives to form carpools rather than to drive alone; and making home, work, and shopping closer together to shorten travel distances. The City includes policies and actions in Goal M-2 (Multi-Modal Mobility Network) to support infrastructure to provide residents, workers, and visitors with multi-modal mobility options to support active transportation and non-auto means of travel. Because it

[4] These are displayed for information purposes, as the thresholds do not apply to the No Project scenario. Compared to No Project (2045 Adopted General Plan), there would be no changes in VMT per capita, and no changes in VMT per employee.

cannot be guaranteed that the effectiveness of TDM measures would offset VMT, impacts related to VMT per capita are considered significant and unavoidable.

VMT Cumulative Impact Assessment

A cumulative impact consists of an impact which is created as a result of the combination of the project with other projects causing related impacts. A project has cumulatively considerable environmental effects (i.e., is significant) when the incremental effects of the project are significant when viewed in connection with the effects of other projects, including probable future projects. Because a project level impact occurs, a cumulative significant impact would also occur.

IMPACT 3: ROADWAY SAFETY DESIGN HAZARDS

SIGNIFICANCE CRITERION C: *Would the proposed plans substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?*

Buildout of the Project would involve the alteration, intensification, and redistribution of land uses. Hazards are typically assessed at the individual project level when an actual design and construction of a circulation facility is proposed. Potential impacts associated with future land use development projects would be analyzed and evaluated in detail through the city review process for those individual projects. The city's design and construction standards and specifications provide for coordinated and standardized development of city facilities, including roadways. The standards apply to, regulate, and guide the design and preparation of plans, and the construction of streets, highways, alleys, drainage, traffic signals, site access, and related public improvements. As individual projects would undergo review by Public Works and Planning departments for approval and construction and would have to meet design guidelines, potential safety design hazards associated with land development projects would be addressed and result in less than significant impacts.

Prior to implementation, any improvements would be subject to a detailed review and future consideration by the City's Public Works engineering staff. An evaluation of the roadway alignments, intersection geometrics, and traffic control features would be needed at the project design level. Roadway improvements would have to be made in accordance with the City's circulation plan and roadway design guidelines and meet design guidelines in the California Manual of Uniform Traffic Control Devices and the Caltrans Roadway Design Manual. In addition, the City of Indian Wells Mobility Element includes goals, policies, and actions to improve the safety of all users of the transportation system in the City such as Action M-1a of Goal 1 (A Safe and Efficient Street System), that requires new developments and expansion of existing developments to provide necessary improvements and address operational deficiencies for which its traffic causes off-site intersections to perform beyond acceptable LOS standards.

Overall, implementation of the General Plan would not result in hazardous conditions. As individual projects and circulation improvements would undergo review by Public Works and Planning departments for approval and construction and would have to meet design guidelines, impacts would be less than significant.

IMPACT 4: EMERGENCY VEHICLE ACCESS

SIGNIFICANCE CRITERION D: *Would the proposed plans result in inadequate emergency access?*

Emergency access associated with future land use development projects would be analyzed and evaluated in detail through the city review process for those individual projects. The city's emergency access standards would apply to all development proposed under the proposed Project. Therefore, with respect to inadequate emergency access, the impact of the proposed plans would be less than significant.



Non-CEQA Level of Service Analyses

NON-CEQA LEVEL OF SERVICE ANALYSES

METHODOLOGY AND EVALUATION CRITERIA

A level of service (LOS) analysis is included for non-CEQA purposes to determine if local intersections operate acceptably and if the project would cause any negative effects on local roadway operations. This approach is consistent with the County of Riverside's *Transportation Analysis Guidelines for Level of Service and Vehicle Miles Travelled. According to Goal IIC3 in the 1996 General Plan (last amended in 2016),* the City of Indian Wells strives to maintain vehicular LOS "D" at roadway intersections whenever possible. The City may exempt locations from the LOS "D" target due to right-of-way constraints, and to align to community goals and to balance the needs for different road users including pedestrians and cyclists.

This section provides an analysis of intersection and roadway capacity. The following discusses the methodologies, approach as well as the performance targets and evaluation criteria for the level of service analyses for study roadways and intersections.

INTERSECTIONS LEVEL OF SERVICE

The evaluation of intersections incorporate the intersection LOS methodologies as recommended in the most recent edition of the Transportation Research Board Highway Capacity Manual (HCM), and for individual intersection, utilizing the Synchro software package, which implements the methodologies outlined in the HCM, and is considered appropriate.

In this report, LOS is based on the HCM 7th edition definitions, included as **Table 12** for ease of reference. The HCM methodology assigns an LOS grade to an intersection based on the delay for vehicles at the intersection, ranging from LOS A to LOS F; LOS A signifies very slight delay with no approach phase fully utilized, while LOS F signifies very high delays and congestion, frequent cycle failures, and long queues. For signalized and all-way stop-controlled intersections, the average control delay for all vehicles is assessed; for two-way stop-controlled intersections, the intersection approach with the highest delay is utilized.

Table 12: Intersection Delays and Corresponding Level of Service

Level of Service	Delay Per Vehicle (Seconds)	
	Signalized Intersection	Unsignalized Intersection
A	< 10.0	< 10.0
B	> 10.0 to 20.0	> 10.0 to 15.0
C	> 20.0 to 35.0	> 15.0 to 25.0
D	> 35.0 to 55.0	> 25.0 to 35.0
E	> 55.0 to 80.0	> 35.0 to 50.0
F	> 80.0	> 50.0

Source: Highway Capacity Manual, 7th Edition

Study Intersections

A total of seven (7) study intersections (shown in **Figure 10**) were selected for the purposes of this analysis. All study intersections are under the City of Indian Well's jurisdiction and all study intersections are signalized. These study intersections were selected in consultation with City Public Works and Planning staff. Study intersections are listed below:

1. Fred Waring Drive at Eldorado Drive
2. Fred Waring Drive at Warner Trail
3. Highway 111 at Cook Street
4. Highway 111 at Eldorado Drive
5. Highway 111 at Indian Wells Lane
6. Highway 111 at Miles Avenue
7. Miles Avenue at Washington Street

ROADWAYS LEVEL OF SERVICE

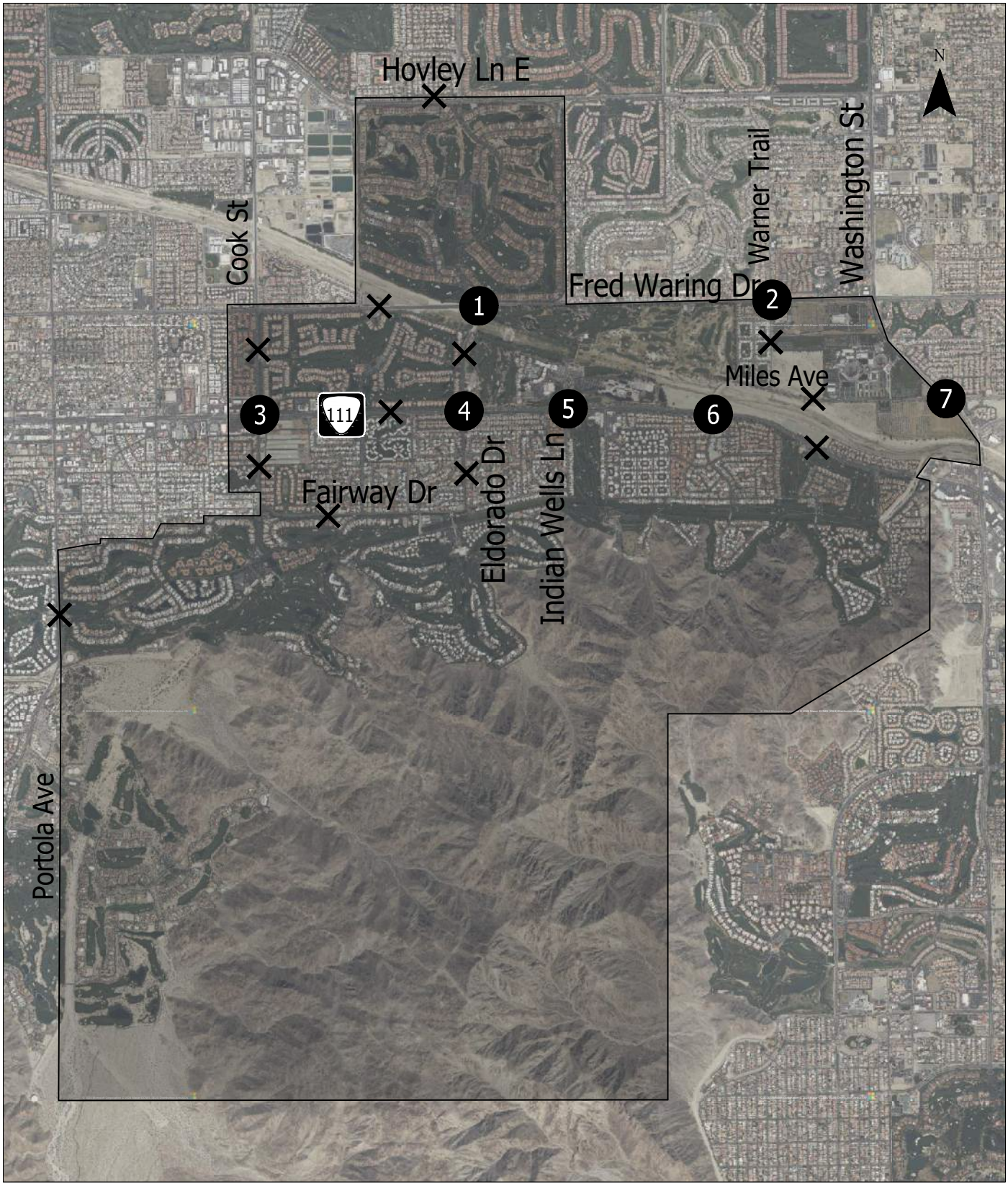
A level of service (LOS) analysis is included for non-CEQA purposes to determine if local roadway segments operate acceptably and if the project would cause any negative effects on local roadway operations. The evaluation of roadway segments incorporate the LOS methodologies as recommended in the most recent edition of the HCM.

As previously discussed, according to the proposed Mobility Element policy M1-2, the City of Indian Wells strives to maintain vehicular LOS "D" whenever possible. In addition, the General Plan Update's Circulation Element provides guidance on implementing the buildout roadway network. For the purpose of this analysis, the target LOS for roadway segments will be considered "D" or better.

Study Roadways

A total of twelve (12) roadway segments (shown in **Figure 10**) were selected for the purposes of this analysis. These roadway segments were selected in consultation with City Public Works and Planning staff. Study roadway segments are listed below:

1. Hovley Lane between East City Boundary and West City Boundary
2. Fred Waring Drive between Eldorado Drive and Cook Street
3. Cook Street between Fred Waring Drive and Highway 111
4. Eldorado Drive between Fred Waring Drive and Highway 111
5. Warner Trail between Fred Waring Drive and Miles Avenue
6. Highway 111 from Cook Street to Rancho Palmeras Drive
7. Miles Avenue from Warner Trail and Washington Street
8. Cook Street from Highway 111 and Fairway Drive
9. Eldorado Drive from Highway 111 to Fairway Drive
10. Highway 111 from Miles Avenue to Washington Street
11. Fairway Drive from Cook Street to Rancho Palmeras Drive
12. Portola Avenue from Mockingbird Trail to South City Limit



- Study Intersection
- Study Roadway Segment

Study Intersections and Roadway Segments
Indian Wells, CA

Figure
10

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ANALYSIS SCENARIOS AND VOLUME DEVELOPMENT

This study includes an assessment of study intersection operations during the weekday AM peak hour and weekday PM peak hour, and average daily traffic (ADT) for study roadway segments, under the following analysis scenarios:

- Existing: corresponds to existing 2024 conditions.
- 2045 Proposed General Plan (Project): corresponds to the future year 2045 conditions with maximum development potential with the proposed general plan, also referred as Project.

Study intersections and roadways operations are evaluated under Existing, and the 2045 Proposed General Plan conditions. Existing condition traffic volumes are based on 2024 traffic counts. The year 2045 was selected as the horizon year for the General Plan. As previously discussed future LOS were assessed using RIVCOM outputs. Link volumes from the base year and future model scenarios were used alongside existing intersection counts to develop future intersection counts, using the post-processing approach from NCHRP 255.

EXISTING ROADWAY NETWORK AND TRAFFIC CONDITIONS

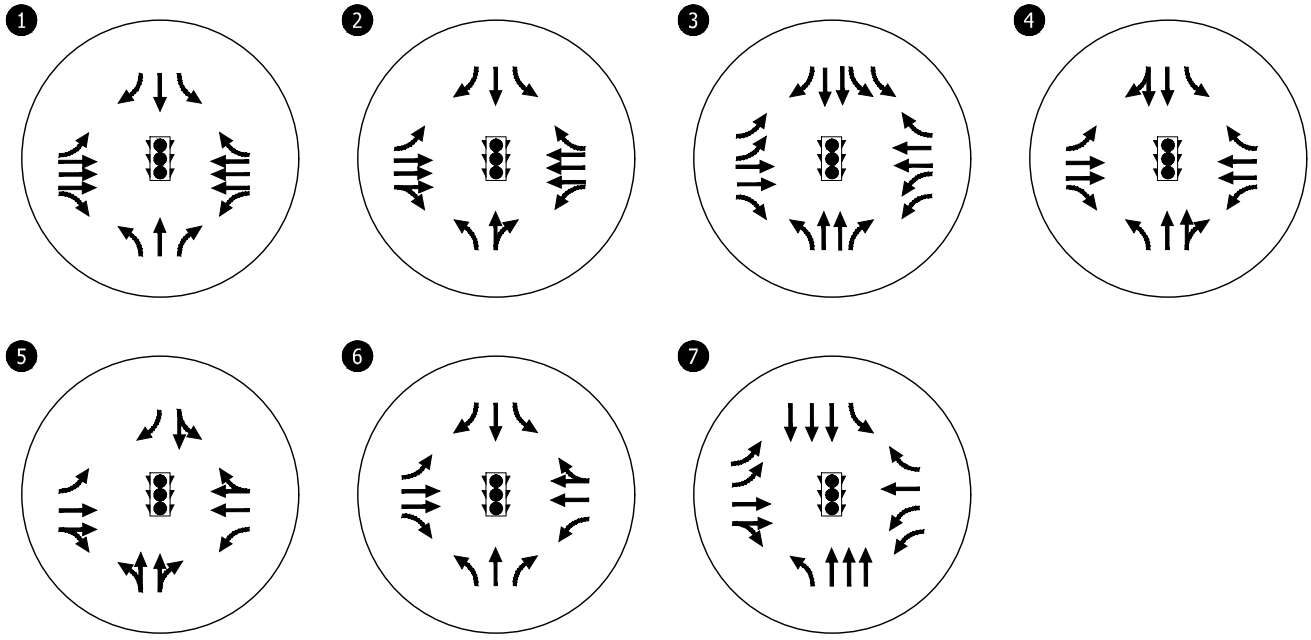
This section provides a summary of the existing roadway network, including operations at the study intersections.

In consultation with City of Indian Wells staff, a total of 7 intersections and 12 roadway segments were selected for the purposes of this analysis, as discussed in the previous section. Traffic Volumes

Vehicle intersection turning movement counts were collected on Thursday, February 22, 2024 during the weekday morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak periods. Average daily volume (ADT) roadway segments counts were also collected on Thursday, February 22, 2024. Traffic counts occurred during typical traffic conditions while schools were in session and no special events such as the BNP Paribas Open tennis tournament occurred during the count period.

Figure 11 illustrates the existing lane configurations and traffic control devices for all study intersections. **Figure 12** and **Figure 13** show automobile peak hour volumes at the study intersections. *Appendix B contains the Intersection Turning Movement Count Worksheets. Appendix C contains the Roadway ADT Worksheets.*





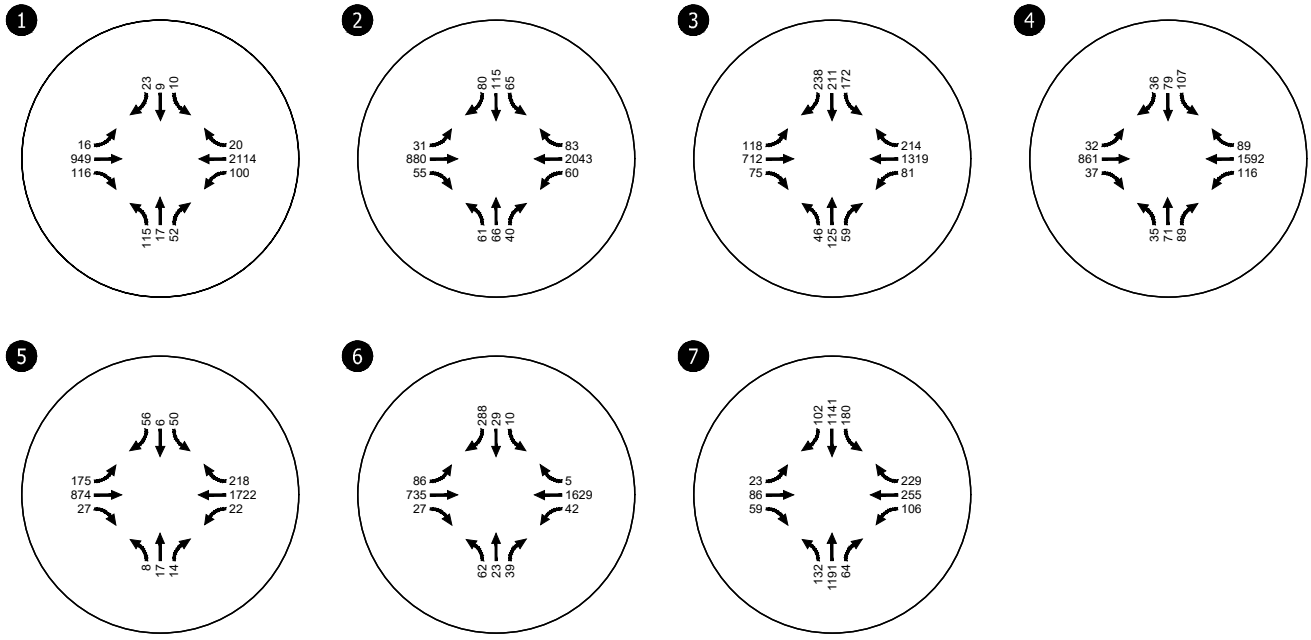
- Signalized Intersection

Existing Lane Configurations
& Traffic Control Devices
Indian Wells, CA

Figure
11

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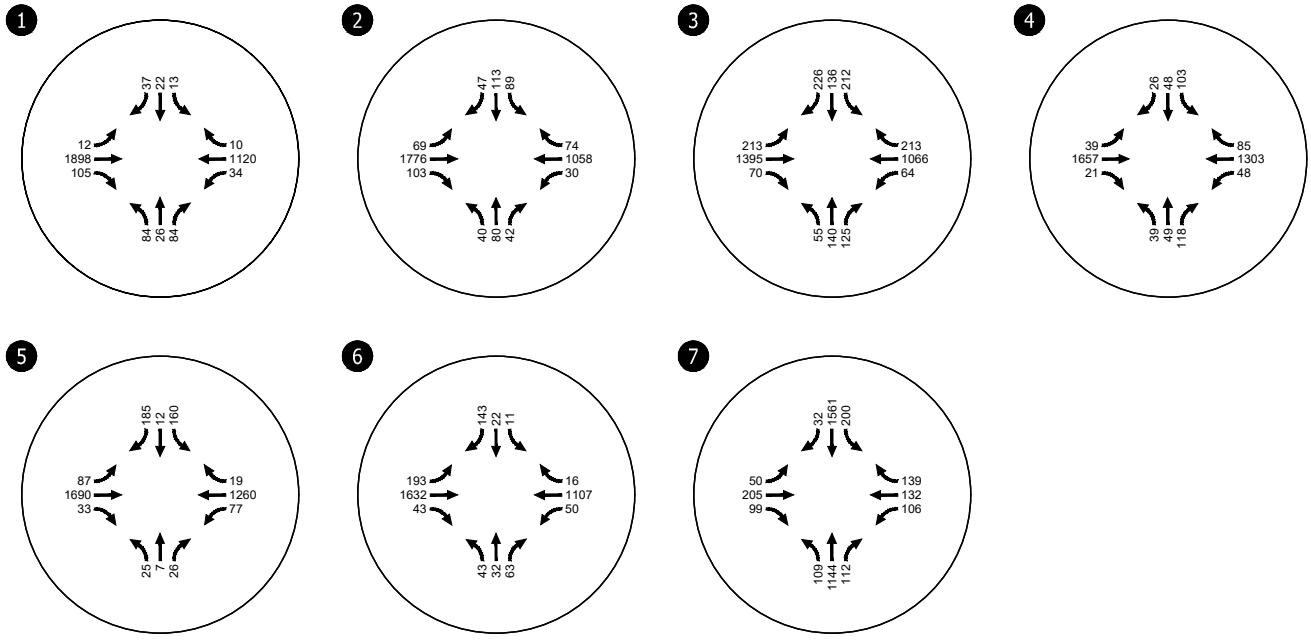


Existing Traffic Volumes
AM Peak Hour
Indian Wells, CA

Figure
12

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Existing Traffic Volumes
PM Peak Hour
Indian Wells, CA

Figure
13

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EXISTING TRAFFIC OPERATIONS AND PERFORMANCE

EXISTING AUTOMOBILE LEVEL OF SERVICE

Intersections

Table 13 provides a summary of the existing automobile level of service. *Appendix D contains the Existing Conditions LOS Worksheets.*

Table 13: Intersections LOS, Existing Conditions

ID	Study Intersection	Existing AM		Existing PM	
		Delay	LOS	Delay	LOS
1	Eldorado Drive at Fred Waring Drive	12.3	B	10.5	B
2	Warner Trail at Fred Waring Drive	46.0	D	46.5	D
3	Cook Street at Highway 111	**61.3**	**E**	40.3	D
4	Eldorado Drive at Highway 111	49.2	D	**57.9**	**E**
5	Indian Wells Lane at Highway 111	53.8	D	37.9	D
6	Miles Avenue at Highway 111	37.7	D	21.0	C
7	Washington Street at Miles Avenue	28.6	C	28.4	C

Source: Kittelson & Associates, Inc. 2024
Bold signifies operations below target LOS ("D").
All study intersections are signalized.

As shown in **Table 13**, the following intersections operate below the target LOS ("D") per Mobility Element policy M1-2:

- 3. Cook Street at Highway 111 (LOS E during the AM peak hour)
- 4. Eldorado Drive at Highway 111 (LOS E during the PM peak hour)

The intersections on Highway 111 experience heavier traffic volumes in the AM peak hour in the westbound direction. Conversely in the PM peak the heavier volumes occur in the eastbound direction.

Roadway Segments

Table 14 provides a summary of the existing roadway segment LOS.

Table 14: Roadway Segments Daily LOS, Existing Conditions

ID	Segment	2024 ADT	Heavy Vehicle %	Posted Speed Limit	Existing Lanes	HCM Methodology LOS
1	Hovley Lane between East City Boundary and West City Boundary	15,630	3.03%	45	4D	LOS C or better
2	Fred Waring Drive between Eldorado Drive and Cook Street	37,933	1.37%	50	6D	LOS D
3	Cook Street between Fred Waring Drive and Highway 111	18,990	2.00%	40	4D	LOS D
4	Eldorado Drive between Fred Waring Drive and Highway 111	4,873	3.59%	40	4D	LOS C or better
5	Warner Trail between Fred Waring Drive and Miles Avenue	4,328	1.83%	35	2D	LOS D
6	Highway 111 from Cook Street to Rancho Palmeras Drive	34,605	1.94%	45	4D	**LOS E**
7	Miles Avenue from Warner Trail and Washington Street	6,972	2.07%	50	4D	LOS C or better
8	Cook Street from Highway 111 and Fairway Drive	13,076	1.74%	35	4D	LOS C or better
9	Eldorado Drive from Highway 111 to Fairway Drive	5,209	3.92%	35	2D	LOS D
10	Highway 111 from Miles Avenue to Washington Street	37,329	1.97%	50	4D	**LOS F**
11	Fairway Drive from Cook Street to Rancho Palmeras Drive	4,157	3.18%	35	2D	LOS D
12	Portola Avenue from Mockingbird Trail to South City Limit	12,340	3.01%	35	4D	LOS D

Source: Kittelson & Associates, Inc. 2024
Bold signifies operations below target LOS ("D").
Methodology uses HCM 7th edition and Exhibit 45 of the "Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual" with the following additional assumptions applied: 8-lane facility types were reviewed as 6-lane facility type to be conservative; speed limits of 35 mph and 40 mph were reviewed as 30 mph to be more conservative. Assumes k factor of 0.09 and a d factor of 0.60.
4, 6, 8 = number of lanes. D = divided, U = undivided roadway.

As shown in **Table 14**, the following roadway segments operate below the target LOS ("D"):

- Highway 111 between Cook Street to Rancho Palmeras Drive (LOS E)
- Highway 111 between Miles Avenue and Washington Street (LOS F)

The segment of Highway 111 between Miles Avenue and Washington Street also exceeds the CMT LOS E standard.

FUTURE TRAFFIC CONDITIONS WITHOUT IMPROVEMENTS

The potential operational effects on the transportation system were evaluated under the Year 2045 General Plan Update conditions for non-CEQA local transportation analysis purposes. The automobile turning movement counts for the 2045 Proposed General Plan were developed based on outputs from the RIVCOM travel demand model.

No specific development projects are proposed as part of the Indian Wells General Plan Update. While widening of Highway 111 within Indian Wells is included under the RCTC LRTS, there is no committed funding for the widening. For this analysis, the roadway and intersection configurations are kept consistent from the existing scenario, including Highway 111 with 2 lanes in each direction and all study intersections with the same lane configurations and signal phasing.

Appendix E contains the Future Conditions LOS Worksheets.

INTERSECTIONS LEVELS OF SERVICE

Figure 14 and **Figure 15** present the 2045 Proposed General Plan intersection peak hour turning movement volumes. Table 15 provides a summary of 2045 General Plan Update conditions intersection LOS:

- 3. Cook Street at Highway 111 (LOS E during the AM peak hour)
- 4. Eldorado Drive at Highway 111 (LOS E during the PM peak hour)
- 5. Indian Wells Lane at Highway 111 (LOS F during the AM and PM peak hour)

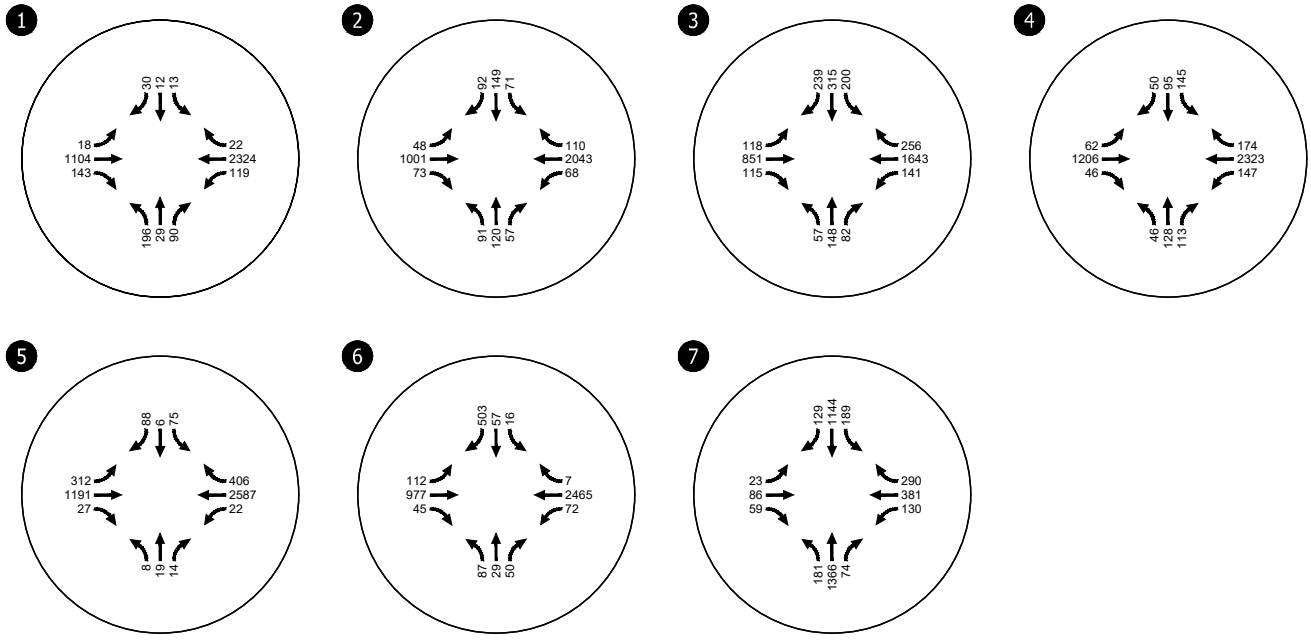
In addition to intersections 3 and 4, intersection 5 would also operate below target LOS under 2045 conditions. Similar to exiting traffic patterns, in 2045 the intersections on Highway 111 experience heavier traffic volumes in the AM peak hour in the westbound direction; and during the PM peak the heavier volumes occur in the eastbound direction.

Table 15: Intersections LOS, 2045 General Plan Update Conditions (Without Improvements)

ID	Study Intersection	Weekday AM		Weekday PM	
		Delay (Sec/veh)	LOS	Delay (Sec/veh)	LOS
1	Eldorado Drive at Fred Waring Drive	16.6	B	11.9	B
2	Warner Trail at Fred Waring Drive	46.0	D	48.9	D
3	Cook Street at Highway 111	**55.9**	**E**	47.6	D
4	Eldorado Drive at Highway 111	47.8	D	**90.4**	**F**
5	Indian Wells Lane at Highway 111	**166.8**	**F**	**86.7**	**F**
6	Miles Avenue at Highway 111	45.0	D	30.9	C
7	Washington Street at Miles Avenue	35.3	D	31.7	C

Source: Kittelson & Associates, Inc. 2024
Bold signifies operations below target LOS ("D").



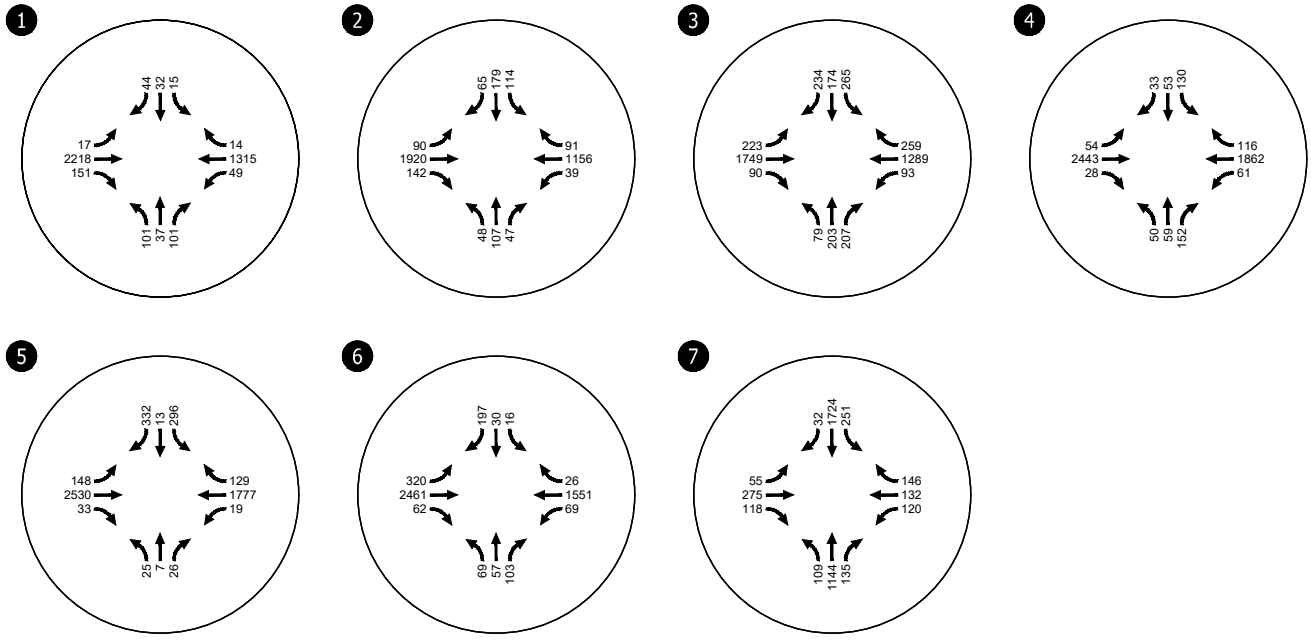


2045 Future Traffic Volumes
AM Peak Hour
Indian Wells, CA

Figure
14

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2045 Future Traffic Volumes
PM Peak Hour
Indian Wells, CA

Figure
15

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ROADWAY SEGMENTS

The roadway segment analysis was performed for average daily traffic volumes (ADT), according to the methodologies discussed in according to the methodologies discussed in "Methodology and Evaluation Criteria" of the "LOS Analysis" section of the report. **Table 16** provides a summary of 2045 General Plan Update conditions roadway segment LOS.

Table 16: Roadway Segments LOS, 2045 General Plan Update Conditions (Without Improvements)

ID	Segment	2024 ADT	Heavy Vehicle %	Posted Speed Limit	Existing Lanes	HCM Methodology LOS
1	Hovley Lane between East City Boundary and West City Boundary	15,080	3.03%	45	4D	LOS C or better
2	Fred Waring Drive between Eldorado Drive and Cook Street	42,550	1.37%	50	6D	LOS D
3	Cook Street between Fred Waring Drive and Highway 111	22,090	2.00%	40	4D	LOS D
4	Eldorado Drive between Fred Waring Drive and Highway 111	5,340	3.59%	40	4D	LOS C or better
5	Warner Trail between Fred Waring Drive and Miles Avenue	6,200	1.83%	35	2D	LOS D
6	Highway 111 from Cook Street to Rancho Palmeras Drive	46,310	1.94%	45	**4D**	**LOS F**
7	Miles Avenue from Warner Trail and Washington Street	10,340	2.07%	50	4D	LOS C or better
8	Cook Street from Highway 111 and Fairway Drive	14,270	1.74%	35	4D	LOS C or better
9	Eldorado Drive from Highway 111 to Fairway Drive	5,420	3.92%	35	2D	LOS D
10	Highway 111 from Miles Avenue to Washington Street	47,830	1.97%	50	**4D**	**LOS F**
11	Fairway Drive from Cook Street to Rancho Palmeras Drive	4,260	3.18%	35	2D	LOS D
12	Portola Avenue from Mockingbird Trail to South City Limit	13,430	3.01%	35	4D	LOS D

Source: Kittelson & Associates, Inc. 2024

2045 corresponds to 2045 General Plan Update conditions

All roadways modeled with their existing lane configurations, including Highway 111 with 2 through lanes in each direction.
Bold signifies operations below target LOS ("D").

Methodology uses HCM 7th edition and Exhibit 45 of the "Planning and Preliminary Engineering Applications Guide to the Highway Capacity Manual" with the following additional assumptions applied: 8-lane facility types were reviewed as 6-lane facility type to be conservative; speed limits of 35 mph and 40 mph were reviewed as 30 mph to be more conservative. Assumes k factor of 0.09 and a d factor of 0.60.

4, 6, 8 = number of lanes. D = divided, U = undivided roadway.

As shown in **Table 16**, the following roadway segments operate below the target LOS ("D"):

- Highway 111 between Cook Street to Rancho Palmeras Drive (LOS E)
- Highway 111 between Miles Avenue and Washington Street (LOS F)

FUTURE TRAFFIC CONDITIONS WITH HIGHWAY 111 IMPROVEMENTS

As previously shown, several intersections and roadway segments on Highway 111 would operate at a LOS below the City's LOD "D" target and would not meet the CMT LOS "E" target. Widening of Highway 111 from 4 to 6 lanes within City limits was identified in the RCTS LRTS. The following provides a summary of the anticipated traffic operations with widening of Highway 111 and study intersections along the corridor. With the addition of a third lane in each direction of Highway 111, the following intersection improvements were assumed at the study intersections:

- 3. Cook Street at Highway 111
  - Eastbound: Convert right-turn only lane to through-right turn lane
  - Westbound: Convert right-turn only lane to through-right turn lane
- 4. Eldorado Drive at Highway 111
  - Eastbound: Convert right-turn only lane to through-right turn lane
  - Westbound: Convert right-turn only lane to through-right turn lane
- 5. Indian Wells Lane at Highway 111
  - Eastbound: Add additional through-lane
  - Westbound: Add additional through lane
- 6. Miles Avenue at Highway 111
  - Eastbound: Convert right-turn only lane to through-right turn lane
  - Westbound: Add additional through lane

Table 17 provides a summary of 2045 General Plan Update conditions intersection LOS with Highway 111 improvements. As shown below all study intersections would operate at LOS D or better.

Table 17: Intersections LOS, 2045 General Plan Update Conditions (Highway 111 Widening)

ID	Study Intersection	Weekday AM		Weekday PM	
		Delay (Sec/veh)	LOS	Delay (Sec/veh)	LOS
3	Cook Street at Highway 111	42.7	D	42.5	D
4	Eldorado Drive at Highway 111	37.4	D	37.3	D
5	Indian Wells Lane at Highway 111	47.4	D	29.7	C
6	Miles Avenue at Highway 111	20.0	C	20.5	C

Source: Kittelson & Associates, Inc. 2024
Bold signifies operations below target LOS ("D").

Table 18 shows the LOS of the roadway segments with the Highway 111 widening (from 4 to 6 lanes). As shown in the table, the roadway segments would meet the target LOS. It is recommended that the City continue to monitor traffic volumes on these and other roadway facilities to determine the timing and extent of any improvements. The City of Indian Wells should consider the necessary right of way requirements and conduct a detailed traffic operations study to identify specific lane and interseciton configurations including all intersections along the entire corridor within City limits.

Table 18: Roadway Segments LOS with Highway 111 Widening

Roadway Segments	LOS
Highway 111 (Cook Street to Rancho Palmeras Drive)	D
Highway 111 (Miles Avenue to Washington Street)	D

Source: Kittelson & Associates, 2024

Appendix A
Detailed VMT

Appendix B

Intersection Turning Movement Count Worksheets

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Indian Wells
N/S: Cook Street
E/W: Highway 111
Weather: Clear

File Name : 01_INW_Cook_111 AM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

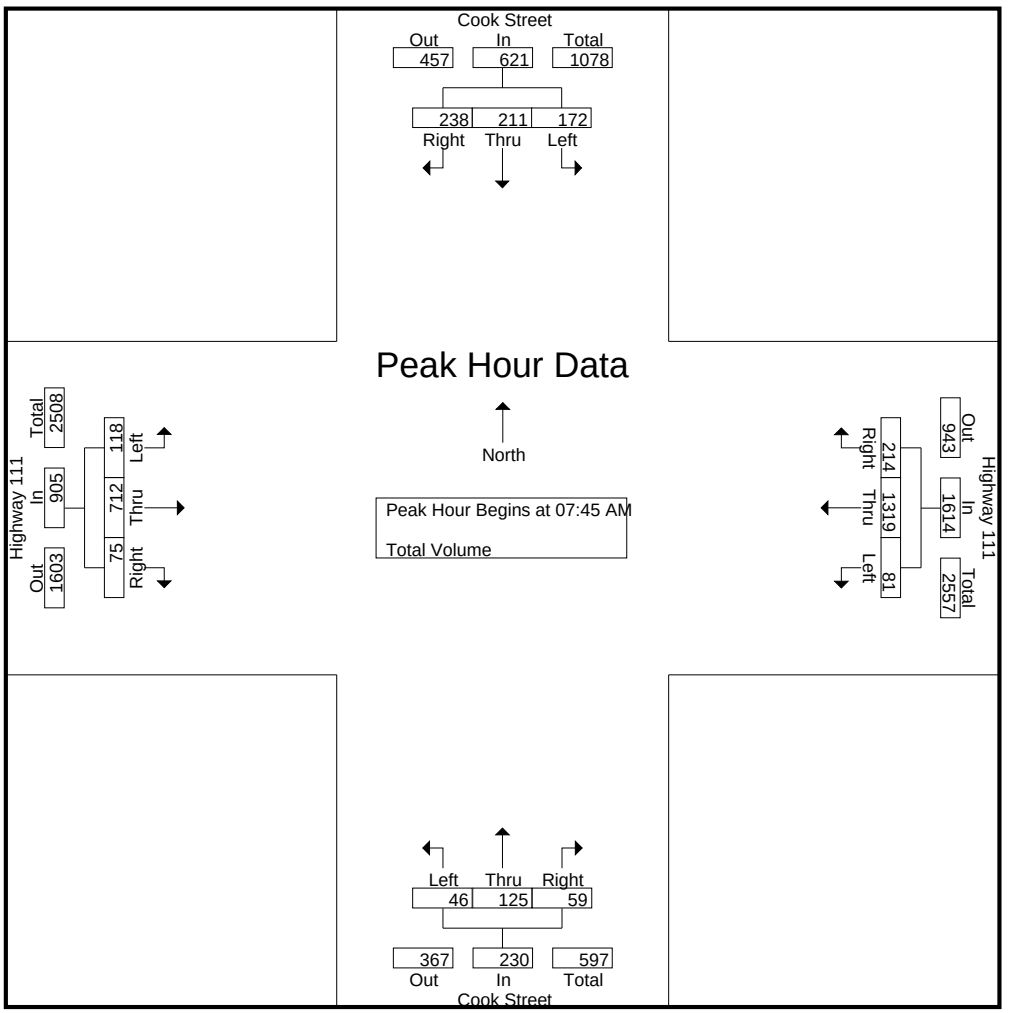
	Cook Street Southbound				Highway 111 Westbound				Cook Street Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	37	33	23	93	18	194	23	235	7	9	9	25	19	126	17	162	515
07:15 AM	31	39	35	105	21	291	29	341	6	13	16	35	27	134	9	170	651
07:30 AM	47	32	42	121	14	330	44	388	8	26	10	44	22	165	14	201	754
07:45 AM	46	70	77	193	24	343	61	428	11	31	13	55	41	162	22	225	901
Total	161	174	177	512	77	1158	157	1392	32	79	48	159	109	587	62	758	2821
08:00 AM	39	48	51	138	24	332	65	421	11	46	15	72	32	189	21	242	873
08:15 AM	48	57	58	163	19	316	49	384	14	31	20	65	21	172	16	209	821
08:30 AM	39	36	52	127	14	328	39	381	10	17	11	38	24	189	16	229	775
08:45 AM	39	50	83	172	30	282	43	355	21	25	17	63	37	155	15	207	797
Total	165	191	244	600	87	1258	196	1541	56	119	63	238	114	705	68	887	3266
Grand Total	326	365	421	1112	164	2416	353	2933	88	198	111	397	223	1292	130	1645	6087
Apprch %	29.3	32.8	37.9		5.6	82.4	12		22.2	49.9	28		13.6	78.5	7.9		
Total %	5.4	6	6.9	18.3	2.7	39.7	5.8	48.2	1.4	3.3	1.8	6.5	3.7	21.2	2.1	27	

	Cook Street Southbound				Highway 111 Westbound				Cook Street Northbound				Highway 111 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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	46	**70**	**77**	**193**	**24**	**343**	61	**428**	11	31	13	55	**41**	162	**22**	225	**901**
08:00 AM	39	48	51	138	24	332	**65**	421	11	**46**	15	**72**	32	**189**	21	**242**	873
08:15 AM	**48**	57	58	163	19	316	49	384	**14**	31	**20**	65	21	172	16	209	821
08:30 AM	39	36	52	127	14	328	39	381	10	17	11	38	24	189	16	229	775
Total Volume	172	211	238	621	81	1319	214	1614	46	125	59	230	118	712	75	905	3370
% App. Total	27.7	34	38.3		5	81.7	13.3		20	54.3	25.7		13	78.7	8.3		
PHF	.896	.754	.773	.804	.844	.961	.823	.943	.821	.679	.738	.799	.720	.942	.852	.935	.935

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City of Indian Wells
N/S: Cook Street
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				08:00 AM				07:45 AM			
+0 mins.	46	**70**	**77**	**193**	14	330	44	388	11	**46**	15	**72**	**41**	162	**22**	225
+15 mins.	39	48	51	138	**24**	**343**	61	**428**	14	31	**20**	65	32	**189**	21	**242**
+30 mins.	**48**	57	58	163	24	332	**65**	421	10	17	11	38	21	172	16	209
+45 mins.	39	36	52	127	19	316	49	384	**21**	25	17	63	24	189	16	229
Total Volume	172	211	238	621	81	1321	219	1621	56	119	63	238	118	712	75	905
% App. Total	27.7	34	38.3		5	81.5	13.5		23.5	50	26.5		13	78.7	8.3	
PHF	.896	.754	.773	.804	.844	.963	.842	.947	.667	.647	.788	.826	.720	.942	.852	.935

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City of Indian Wells
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File Name : 01_INW_Cook_111 PM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

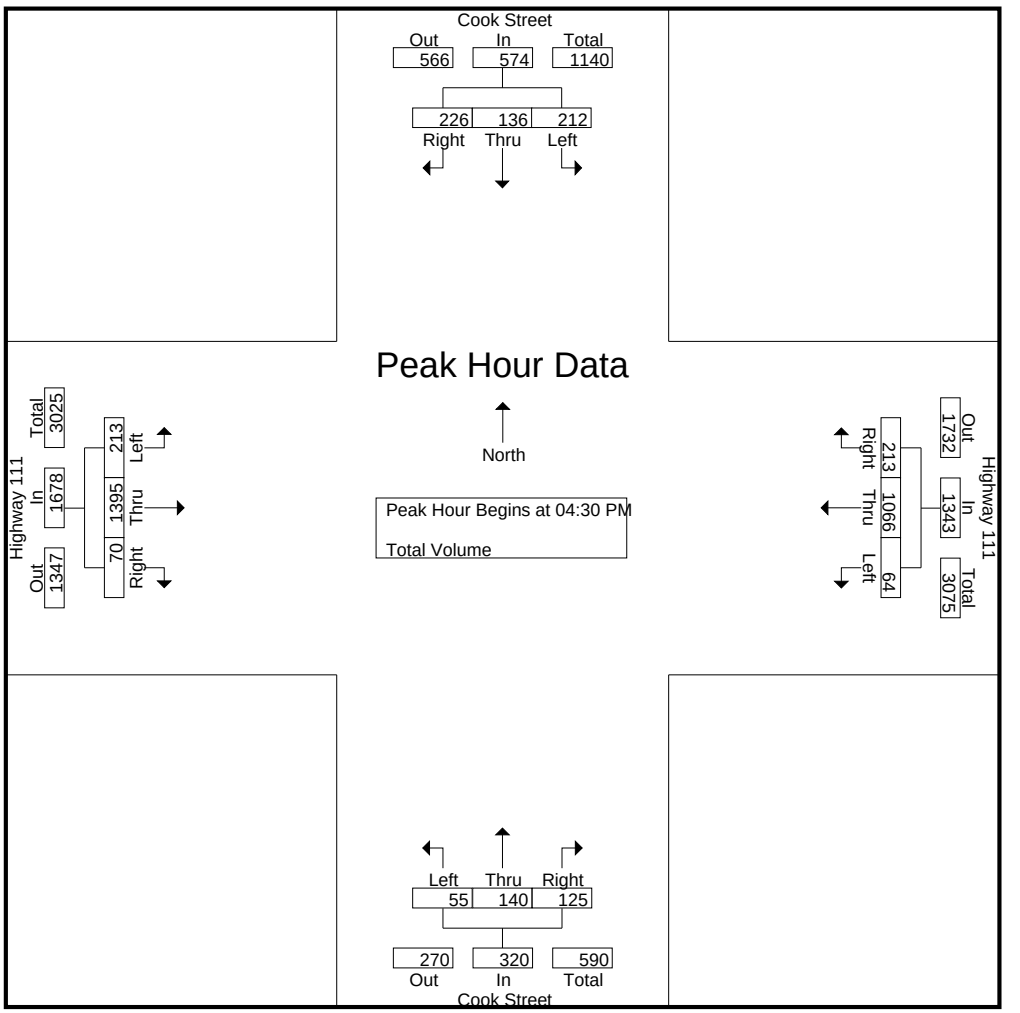
	Cook Street Southbound				Highway 111 Westbound				Cook Street Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	52	40	70	162	28	281	46	355	17	43	40	100	48	333	17	398	1015
04:15 PM	53	39	52	144	15	256	42	313	18	27	33	78	56	295	13	364	899
04:30 PM	32	33	49	114	17	264	48	329	16	35	26	77	46	351	16	413	933
04:45 PM	51	38	61	150	20	254	55	329	11	32	29	72	56	317	21	394	945
Total	188	150	232	570	80	1055	191	1326	62	137	128	327	206	1296	67	1569	3792
05:00 PM	64	36	57	157	17	250	56	323	14	41	43	98	60	339	14	413	991
05:15 PM	65	29	59	153	10	298	54	362	14	32	27	73	51	388	19	458	1046
05:30 PM	65	41	66	172	15	236	43	294	12	30	32	74	56	268	13	337	877
05:45 PM	36	28	54	118	20	226	33	279	15	23	20	58	38	283	16	337	792
Total	230	134	236	600	62	1010	186	1258	55	126	122	303	205	1278	62	1545	3706
Grand Total	418	284	468	1170	142	2065	377	2584	117	263	250	630	411	2574	129	3114	7498
Apprch %	35.7	24.3	40		5.5	79.9	14.6		18.6	41.7	39.7		13.2	82.7	4.1		
Total %	5.6	3.8	6.2	15.6	1.9	27.5	5	34.5	1.6	3.5	3.3	8.4	5.5	34.3	1.7	41.5	

	Cook Street Southbound				Highway 111 Westbound				Cook Street Northbound				Highway 111 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	32	33	49	114	17	264	48	329	**16**	35	26	77	46	351	16	413	933
04:45 PM	51	**38**	**61**	150	**20**	254	55	329	11	32	29	72	56	317	**21**	394	945
05:00 PM	64	36	57	**157**	17	250	**56**	323	14	**41**	**43**	**98**	**60**	339	14	413	991
05:15 PM	**65**	29	59	153	10	**298**	54	**362**	14	32	27	73	51	**388**	19	**458**	**1046**
Total Volume	212	136	226	574	64	1066	213	1343	55	140	125	320	213	1395	70	1678	3915
% App. Total	36.9	23.7	39.4		4.8	79.4	15.9		17.2	43.8	39.1		12.7	83.1	4.2		
PHF	.815	.895	.926	.914	.800	.894	.951	.927	.859	.854	.727	.816	.888	.899	.833	.916	.936

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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:30 PM				04:00 PM				04:30 PM			
+0 mins.	51	38	61	150	17	264	48	329	17	**43**	**40**	**100**	46	351	16	413
+15 mins.	64	36	57	157	**20**	254	55	329	**18**	27	33	78	56	317	**21**	394
+30 mins.	**65**	29	59	153	17	250	**56**	323	16	35	26	77	**60**	339	14	413
+45 mins.	65	**41**	**66**	**172**	10	**298**	54	**362**	11	32	29	72	51	**388**	19	**458**
Total Volume	245	144	243	632	64	1066	213	1343	62	137	128	327	213	1395	70	1678
% App. Total	38.8	22.8	38.4		4.8	79.4	15.9		19	41.9	39.1		12.7	83.1	4.2	
PHF	.942	.878	.920	.919	.800	.894	.951	.927	.861	.797	.800	.818	.888	.899	.833	.916

Location: Indian Wells
N/S: Cook Street
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

PEDESTRIANS

	North Leg Cook Street Pedestrians	East Leg Highway 111 Pedestrians	South Leg Cook Street Pedestrians	West Leg Highway 111 Pedestrians	
7:00 AM	2	1	2	3	8
7:15 AM	0	0	4	1	5
7:30 AM	0	0	0	0	0
7:45 AM	0	0	1	3	4
8:00 AM	0	0	7	0	7
8:15 AM	3	2	3	0	8
8:30 AM	1	0	1	0	2
8:45 AM	1	2	3	3	9
TOTAL VOLUMES:	7	5	21	10	43

	North Leg Cook Street Pedestrians	East Leg Highway 111 Pedestrians	South Leg Cook Street Pedestrians	West Leg Highway 111 Pedestrians	
4:00 PM	0	2	2	0	4
4:15 PM	0	0	1	0	1
4:30 PM	1	0	0	2	3
4:45 PM	2	0	2	3	7
5:00 PM	0	0	3	0	3
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	2	2
5:45 PM	0	0	1	0	1
TOTAL VOLUMES:	3	2	9	7	21

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Location: Indian Wells
N/S: Cook Street
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

BICYCLES

	Southbound Cook Street			Westbound Highway 111			Northbound Cook Street			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	1	4	0	0	0	0	0	0	0	5
7:30 AM	0	0	2	0	4	1	0	2	0	0	1	0	10
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	3	0	0	0	0	0	1	0	4
8:15 AM	0	0	0	1	0	0	0	0	0	0	1	0	2
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL VOLUMES:	0	0	2	2	11	1	0	4	0	0	4	0	24

	Southbound Cook Street			Westbound Highway 111			Northbound Cook Street			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
4:15 PM	1	1	0	0	0	1	0	0	0	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	1	3	0	0	2	1	0	0	0	0	0	0	7

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City of Indian Wells
N/S: Eldorado Drive
E/W: Highway 111
Weather: Clear

File Name : 02_INW_Eldo_111 AM
Site Code : 99924117
Start Date : 2/22/2024
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Groups Printed- Total Volume

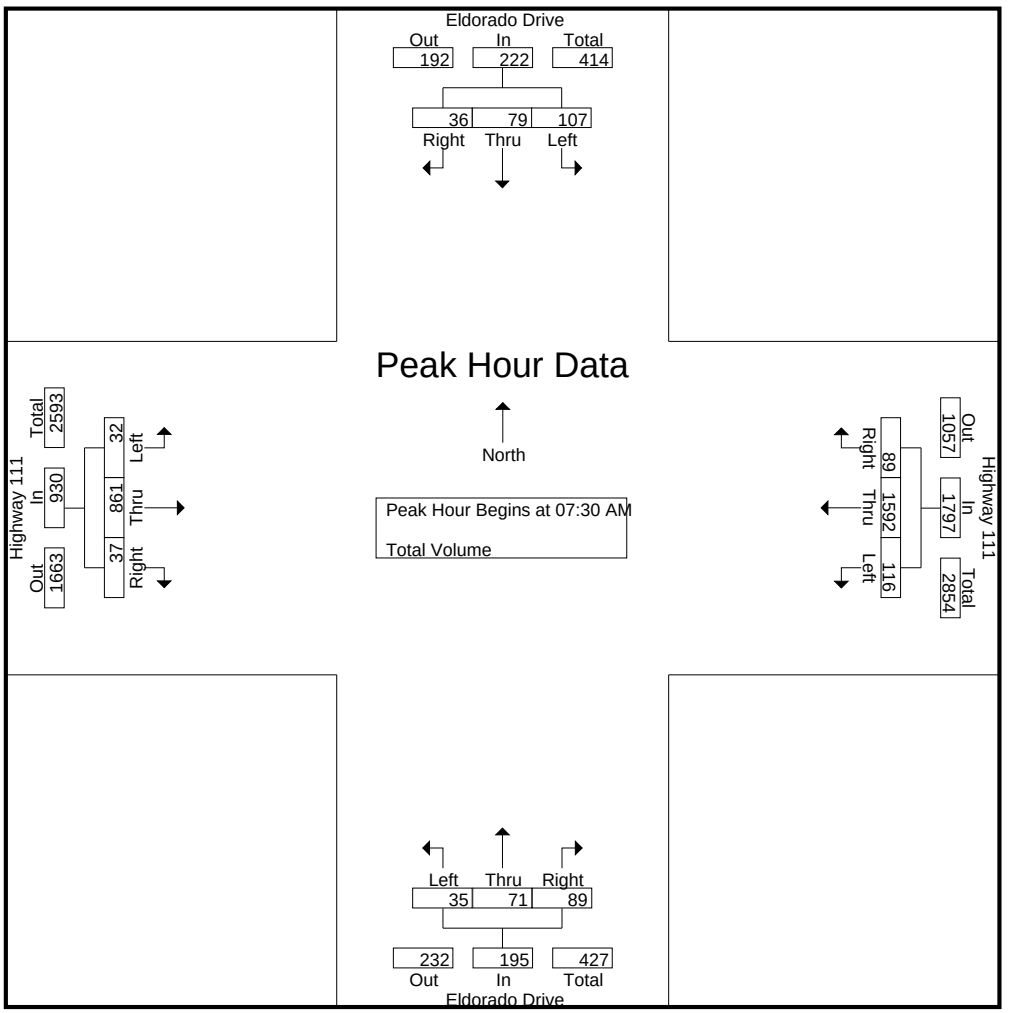
	Eldorado Drive Southbound				Highway 111 Westbound				Eldorado Drive Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	11	14	5	30	20	270	14	304	7	8	9	24	4	160	2	166	524
07:15 AM	14	22	8	44	21	289	8	318	5	16	10	31	6	153	4	163	556
07:30 AM	26	17	8	51	26	406	20	452	8	13	21	42	3	218	10	231	776
07:45 AM	28	28	11	67	29	381	16	426	12	20	21	53	8	203	8	219	765
Total	79	81	32	192	96	1346	58	1500	32	57	61	150	21	734	24	779	2621
08:00 AM	27	19	10	56	34	391	25	450	9	17	25	51	9	218	9	236	793
08:15 AM	26	15	7	48	27	414	28	469	6	21	22	49	12	222	10	244	810
08:30 AM	22	19	8	49	26	367	23	416	10	13	22	45	4	188	8	200	710
08:45 AM	17	11	10	38	25	350	23	398	8	15	19	42	10	219	9	238	716
Total	92	64	35	191	112	1522	99	1733	33	66	88	187	35	847	36	918	3029
Grand Total	171	145	67	383	208	2868	157	3233	65	123	149	337	56	1581	60	1697	5650
Apprch %	44.6	37.9	17.5		6.4	88.7	4.9		19.3	36.5	44.2		3.3	93.2	3.5		
Total %	3	2.6	1.2	6.8	3.7	50.8	2.8	57.2	1.2	2.2	2.6	6	1	28	1.1	30	

	Eldorado Drive Southbound				Highway 111 Westbound				Eldorado Drive Northbound				Highway 111 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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	26	17	8	51	26	406	20	452	8	13	21	42	3	218	**10**	231	776
07:45 AM	**28**	**28**	**11**	**67**	29	381	16	426	**12**	20	21	**53**	8	203	8	219	765
08:00 AM	27	19	10	56	**34**	391	25	450	9	17	**25**	51	9	218	9	236	793
08:15 AM	26	15	7	48	27	**414**	**28**	**469**	6	**21**	22	49	**12**	**222**	10	**244**	**810**
Total Volume	107	79	36	222	116	1592	89	1797	35	71	89	195	32	861	37	930	3144
% App. Total	48.2	35.6	16.2		6.5	88.6	5		17.9	36.4	45.6		3.4	92.6	4		
PHF	.955	.705	.818	.828	.853	.961	.795	.958	.729	.845	.890	.920	.667	.970	.925	.953	.970

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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:45 AM				07:30 AM			
+0 mins.	26	17	8	51	26	406	20	452	**12**	20	21	**53**	3	218	**10**	231
+15 mins.	**28**	**28**	**11**	**67**	29	381	16	426	9	17	**25**	51	8	203	8	219
+30 mins.	27	19	10	56	**34**	391	25	450	6	**21**	22	49	9	218	9	236
+45 mins.	26	15	7	48	27	**414**	**28**	**469**	10	13	22	45	**12**	**222**	10	**244**
Total Volume	107	79	36	222	116	1592	89	1797	37	71	90	198	32	861	37	930
% App. Total	48.2	35.6	16.2		6.5	88.6	5		18.7	35.9	45.5		3.4	92.6	4	
PHF	.955	.705	.818	.828	.853	.961	.795	.958	.771	.845	.900	.934	.667	.970	.925	.953

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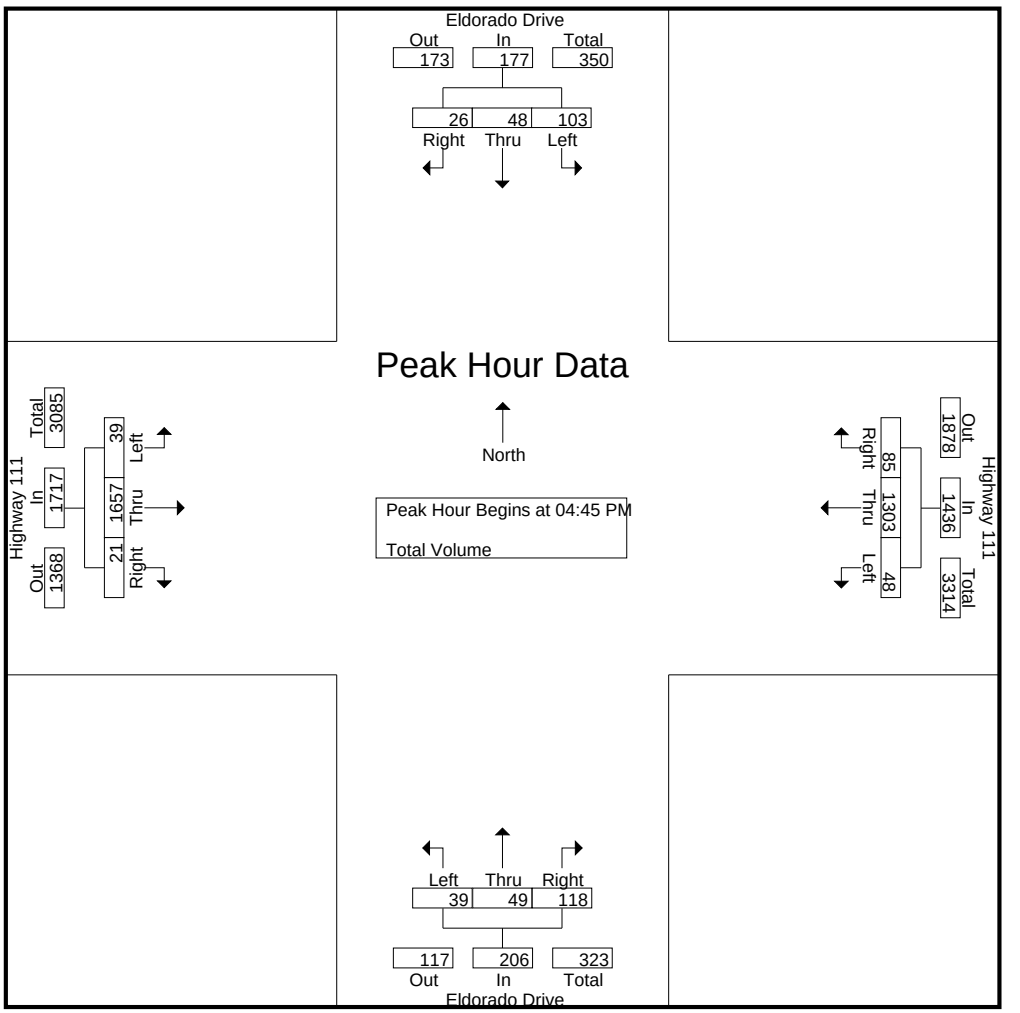
	Eldorado Drive Southbound				Highway 111 Westbound				Eldorado Drive Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	31	12	6	49	14	322	24	360	15	19	45	79	10	409	10	429	917
04:15 PM	22	14	5	41	20	349	12	381	10	24	35	69	20	397	6	423	914
04:30 PM	20	15	5	40	14	293	13	320	6	15	34	55	10	316	5	331	746
04:45 PM	25	7	7	39	12	339	21	372	8	15	27	50	13	414	5	432	893
Total	98	48	23	169	60	1303	70	1433	39	73	141	253	53	1536	26	1615	3470
05:00 PM	30	12	10	52	16	302	20	338	9	13	33	55	12	404	7	423	868
05:15 PM	24	13	3	40	12	337	17	366	12	14	31	57	5	398	3	406	869
05:30 PM	24	16	6	46	8	325	27	360	10	7	27	44	9	441	6	456	906
05:45 PM	19	6	8	33	17	289	7	313	8	15	21	44	10	332	7	349	739
Total	97	47	27	171	53	1253	71	1377	39	49	112	200	36	1575	23	1634	3382
Grand Total	195	95	50	340	113	2556	141	2810	78	122	253	453	89	3111	49	3249	6852
Apprch %	57.4	27.9	14.7		4	91	5		17.2	26.9	55.8		2.7	95.8	1.5		
Total %	2.8	1.4	0.7	5	1.6	37.3	2.1	41	1.1	1.8	3.7	6.6	1.3	45.4	0.7	47.4	

	Eldorado Drive Southbound				Highway 111 Westbound				Eldorado Drive Northbound				Highway 111 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	25	7	7	39	12	**339**	21	**372**	8	**15**	27	50	**13**	414	5	432	893
05:00 PM	**30**	12	**10**	**52**	**16**	302	20	338	9	13	**33**	55	12	404	**7**	423	868
05:15 PM	24	13	3	40	12	337	17	366	**12**	14	31	**57**	5	398	3	406	869
05:30 PM	24	**16**	6	46	8	325	**27**	360	10	7	27	44	9	**441**	6	**456**	**906**
Total Volume	103	48	26	177	48	1303	85	1436	39	49	118	206	39	1657	21	1717	3536
% App. Total	58.2	27.1	14.7		3.3	90.7	5.9		18.9	23.8	57.3		2.3	96.5	1.2		
PHF	.858	.750	.650	.851	.750	.961	.787	.965	.813	.817	.894	.904	.750	.939	.750	.941	.976

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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:00 PM				04:45 PM			
+0 mins.	25	7	7	39	12	**339**	21	**372**	**15**	19	**45**	**79**	**13**	414	5	432
+15 mins.	**30**	12	**10**	**52**	**16**	302	20	338	10	**24**	35	69	12	404	**7**	423
+30 mins.	24	13	3	40	12	337	17	366	6	15	34	55	5	398	3	406
+45 mins.	24	**16**	6	46	8	325	**27**	360	8	15	27	50	9	**441**	6	**456**
Total Volume	103	48	26	177	48	1303	85	1436	39	73	141	253	39	1657	21	1717
% App. Total	58.2	27.1	14.7		3.3	90.7	5.9		15.4	28.9	55.7		2.3	96.5	1.2	
PHF	.858	.750	.650	.851	.750	.961	.787	.965	.650	.760	.783	.801	.750	.939	.750	.941

Location: Indian Wells
N/S: Eldorado Drive
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

PEDESTRIANS

	North Leg Eldorado Drive	East Leg Highway 111	South Leg Eldorado Drive	West Leg Highway 111	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	3	0	0	0	3
7:15 AM	1	1	0	2	4
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	1	1
8:15 AM	1	0	0	0	1
8:30 AM	1	0	2	3	6
8:45 AM	3	0	1	2	6
TOTAL VOLUMES:	9	1	3	8	21

	North Leg Eldorado Drive	East Leg Highway 111	South Leg Eldorado Drive	West Leg Highway 111	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	1	1	0	1	3
4:15 PM	1	0	0	1	2
4:30 PM	0	1	0	0	1
4:45 PM	0	0	0	0	0
5:00 PM	1	0	0	0	1
5:15 PM	2	0	0	0	2
5:30 PM	0	0	0	0	0
5:45 PM	2	0	4	2	8
TOTAL VOLUMES:	7	2	4	4	17

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Location: Indian Wells
N/S: Eldorado Drive
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

BICYCLES

	Southbound Eldorado Drive			Westbound Highway 111			Northbound Eldorado Drive			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	11	0	0	0	11
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	3	0	5	7	0	0	0	0	0	1	0	16
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	4	0	1	0	6
8:30 AM	0	1	0	2	1	0	0	2	4	0	3	0	13
8:45 AM	0	4	0	0	0	0	0	1	0	0	1	0	6
TOTAL VOLUMES:	0	9	0	7	9	0	0	4	19	0	6	0	54

	Southbound Eldorado Drive			Westbound Highway 111			Northbound Eldorado Drive			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	6	0	0	0	0	0	0	0	0	6
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	6	1	0	0	1	0	0	0	0	8

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City of Indian Wells
N/S: Indian Wells Lane
E/W: Highway 111
Weather: Clear

File Name : 03_INW_Ind W_111 AM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

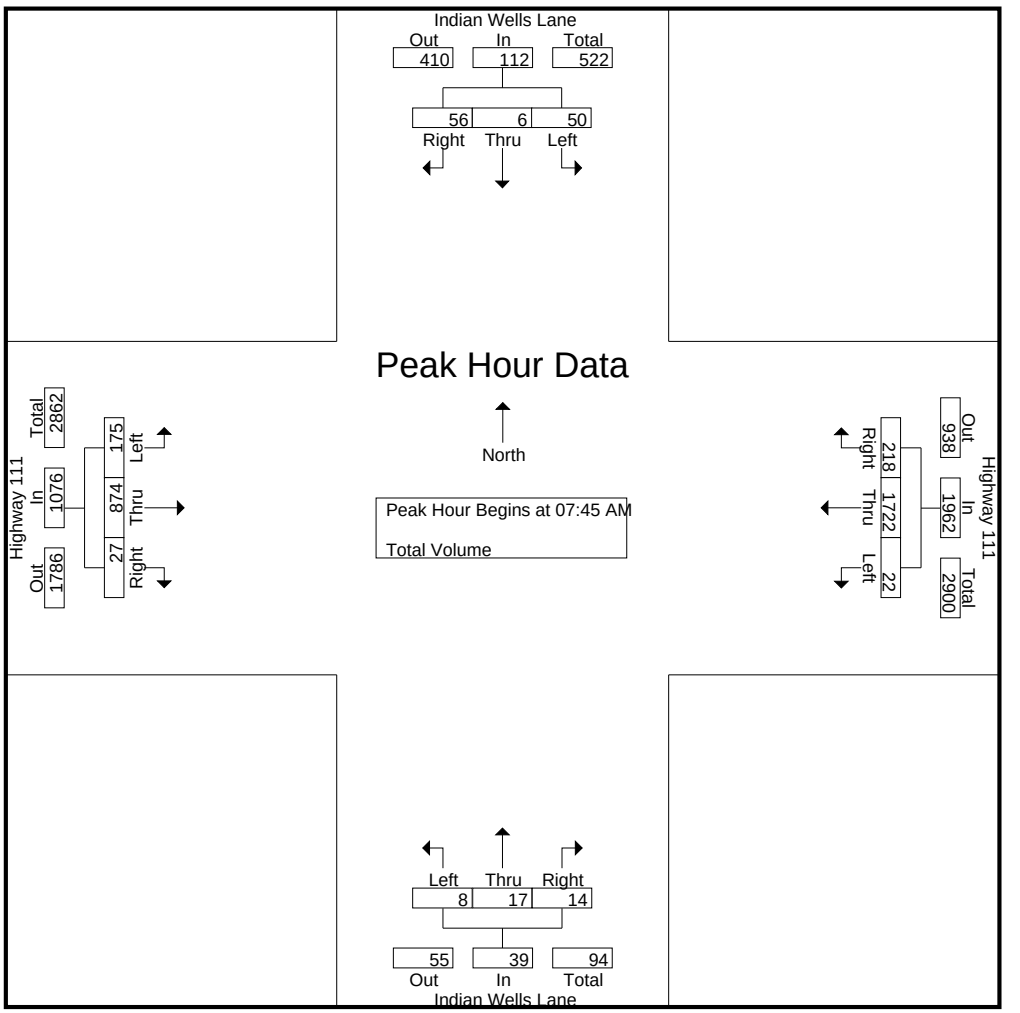
	Indian Wells Lane Southbound				Highway 111 Westbound				Indian Wells Lane Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	8	0	8	16	3	276	20	299	4	1	2	7	22	140	7	169	491
07:15 AM	6	0	11	17	5	346	43	394	2	3	3	8	34	153	3	190	609
07:30 AM	11	2	14	27	3	412	37	452	4	7	2	13	49	180	6	235	727
07:45 AM	6	2	16	24	8	421	80	509	0	9	4	13	58	209	8	275	821
Total	31	4	49	84	19	1455	180	1654	10	20	11	41	163	682	24	869	2648
08:00 AM	14	0	11	25	9	454	64	527	3	4	7	14	45	226	5	276	842
08:15 AM	19	2	10	31	1	432	46	479	2	1	2	5	40	232	9	281	796
08:30 AM	11	2	19	32	4	415	28	447	3	3	1	7	32	207	5	244	730
08:45 AM	8	3	16	27	4	355	23	382	2	0	5	7	27	206	4	237	653
Total	52	7	56	115	18	1656	161	1835	10	8	15	33	144	871	23	1038	3021
Grand Total	83	11	105	199	37	3111	341	3489	20	28	26	74	307	1553	47	1907	5669
Apprch %	41.7	5.5	52.8		1.1	89.2	9.8		27	37.8	35.1		16.1	81.4	2.5		
Total %	1.5	0.2	1.9	3.5	0.7	54.9	6	61.5	0.4	0.5	0.5	1.3	5.4	27.4	0.8	33.6	

	Indian Wells Lane Southbound				Highway 111 Westbound				Indian Wells Lane Northbound				Highway 111 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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	6	**2**	16	24	8	421	**80**	509	0	**9**	4	13	**58**	209	8	275	821
08:00 AM	14	0	11	25	**9**	**454**	64	**527**	**3**	4	**7**	**14**	45	226	5	276	**842**
08:15 AM	**19**	2	10	31	1	432	46	479	2	1	2	5	40	**232**	**9**	**281**	796
08:30 AM	11	2	**19**	**32**	4	415	28	447	3	3	1	7	32	207	5	244	730
Total Volume	50	6	56	112	22	1722	218	1962	8	17	14	39	175	874	27	1076	3189
% App. Total	44.6	5.4	50		1.1	87.8	11.1		20.5	43.6	35.9		16.3	81.2	2.5		
PHF	.658	.750	.737	.875	.611	.948	.681	.931	.667	.472	.500	.696	.754	.942	.750	.957	.947

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City of Indian Wells
N/S: Indian Wells Lane
E/W: Highway 111
Weather: Clear

File Name : 03_INW_Ind W_111 AM
Site Code : 99924117
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:15 AM				07:45 AM			
+0 mins.	14	0	11	25	3	412	37	452	2	3	3	8	**58**	209	8	275
+15 mins.	**19**	2	10	31	8	421	**80**	509	**4**	7	2	13	45	226	5	276
+30 mins.	11	2	**19**	**32**	**9**	**454**	64	**527**	0	**9**	4	13	40	**232**	**9**	**281**
+45 mins.	8	**3**	16	27	1	432	46	479	3	4	**7**	**14**	32	207	5	244
Total Volume	52	7	56	115	21	1719	227	1967	9	23	16	48	175	874	27	1076
% App. Total	45.2	6.1	48.7		1.1	87.4	11.5		18.8	47.9	33.3		16.3	81.2	2.5	
PHF	.684	.583	.737	.898	.583	.947	.709	.933	.563	.639	.571	.857	.754	.942	.750	.957

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City of Indian Wells
N/S: Indian Wells Lane
E/W: Highway 111
Weather: Clear

File Name : 03_INW_Ind W_111 PM
Site Code : 99924117
Start Date : 2/22/2024
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Groups Printed- Total Volume

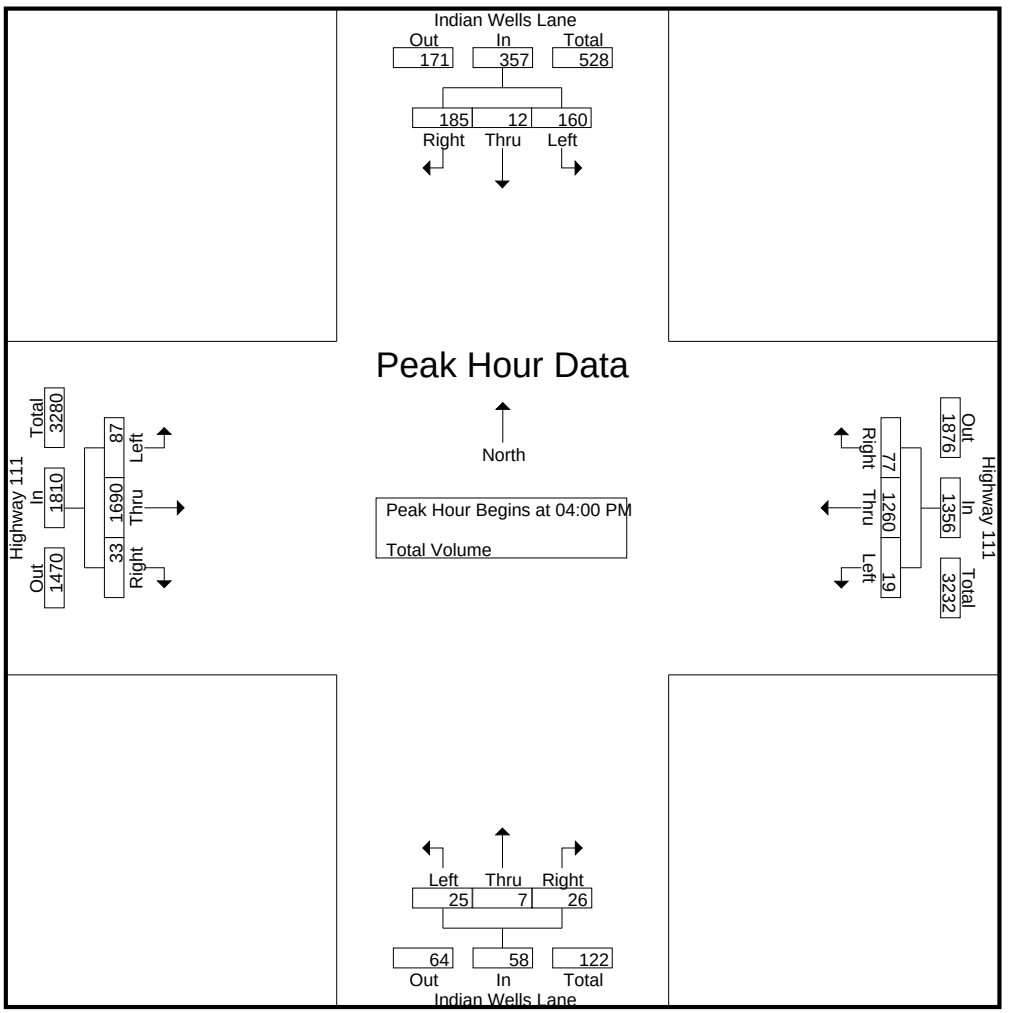
	Indian Wells Lane Southbound				Highway 111 Westbound				Indian Wells Lane Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	46	4	72	122	3	311	21	335	10	0	5	15	23	488	9	520	992
04:15 PM	37	1	45	83	10	307	24	341	4	1	8	13	20	421	10	451	888
04:30 PM	44	5	41	90	3	318	18	339	8	4	7	19	24	370	8	402	850
04:45 PM	33	2	27	62	3	324	14	341	3	2	6	11	20	411	6	437	851
Total	160	12	185	357	19	1260	77	1356	25	7	26	58	87	1690	33	1810	3581
05:00 PM	41	4	37	82	5	278	8	291	10	4	6	20	20	425	2	447	840
05:15 PM	37	1	43	81	7	334	17	358	10	0	2	12	13	465	6	484	935
05:30 PM	31	4	35	70	10	293	22	325	9	2	7	18	21	449	7	477	890
05:45 PM	30	5	24	59	12	304	18	334	11	3	6	20	22	367	6	395	808
Total	139	14	139	292	34	1209	65	1308	40	9	21	70	76	1706	21	1803	3473
Grand Total	299	26	324	649	53	2469	142	2664	65	16	47	128	163	3396	54	3613	7054
Apprch %	46.1	4	49.9		2	92.7	5.3		50.8	12.5	36.7		4.5	94	1.5		
Total %	4.2	0.4	4.6	9.2	0.8	35	2	37.8	0.9	0.2	0.7	1.8	2.3	48.1	0.8	51.2	

	Indian Wells Lane Southbound				Highway 111 Westbound				Indian Wells Lane Northbound				Highway 111 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**46**	4	**72**	**122**	3	311	21	335	**10**	0	5	15	23	**488**	9	**520**	**992**
04:15 PM	37	1	45	83	**10**	307	**24**	**341**	4	1	**8**	13	20	421	**10**	451	888
04:30 PM	44	**5**	41	90	3	318	18	339	8	**4**	7	**19**	**24**	370	8	402	850
04:45 PM	33	2	27	62	3	**324**	14	341	3	2	6	11	20	411	6	437	851
Total Volume	160	12	185	357	19	1260	77	1356	25	7	26	58	87	1690	33	1810	3581
% App. Total	44.8	3.4	51.8		1.4	92.9	5.7		43.1	12.1	44.8		4.8	93.4	1.8		
PHF	.870	.600	.642	.732	.475	.972	.802	.994	.625	.438	.813	.763	.906	.866	.825	.870	.902

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City of Indian Wells
N/S: Indian Wells Lane
E/W: Highway 111
Weather: Clear

File Name : 03_INW_Ind W_111 PM
Site Code : 99924117
Start Date : 2/22/2024
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				05:00 PM				04:45 PM			
+0 mins.	**46**	4	**72**	**122**	3	311	21	335	10	**4**	6	**20**	20	411	6	437
+15 mins.	37	1	45	83	**10**	307	**24**	**341**	10	0	2	12	20	425	2	447
+30 mins.	44	**5**	41	90	3	318	18	339	9	2	**7**	18	13	**465**	6	**484**
+45 mins.	33	2	27	62	3	**324**	14	341	**11**	3	6	20	**21**	449	**7**	477
Total Volume	160	12	185	357	19	1260	77	1356	40	9	21	70	74	1750	21	1845
% App. Total	44.8	3.4	51.8		1.4	92.9	5.7		57.1	12.9	30		4	94.9	1.1	
PHF	.870	.600	.642	.732	.475	.972	.802	.994	.909	.563	.750	.875	.881	.941	.750	.953

Location: Indian Wells
N/S: Indian Wells Lane
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

PEDESTRIANS

	North Leg Indian Wells Lane	East Leg Highway 111	South Leg Indian Wells Lane	West Leg Highway 111	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	2	0	2	6	10
7:15 AM	1	5	0	4	10
7:30 AM	5	4	1	1	11
7:45 AM	2	8	2	2	14
8:00 AM	1	10	10	2	23
8:15 AM	0	2	7	1	10
8:30 AM	3	2	3	3	11
8:45 AM	0	1	2	3	6
TOTAL VOLUMES:	14	32	27	22	95

	North Leg Indian Wells Lane	East Leg Highway 111	South Leg Indian Wells Lane	West Leg Highway 111	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	6	1	4	11
4:15 PM	1	8	2	2	13
4:30 PM	0	3	4	3	10
4:45 PM	3	4	12	5	24
5:00 PM	1	1	0	2	4
5:15 PM	0	2	0	0	2
5:30 PM	0	4	5	1	10
5:45 PM	0	7	1	0	8
TOTAL VOLUMES:	5	35	25	17	82

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Location: Indian Wells
N/S: Indian Wells Lane
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

BICYCLES

	Southbound Indian Wells Lane			Westbound Highway 111			Northbound Indian Wells Lane			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	1	0	0	0	0	10	0	11
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	8	0	0	0	0	0	0	0	8
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
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	2	0	1	2	5
8:30 AM	0	0	0	0	2	1	0	1	0	0	9	0	13
8:45 AM	0	0	0	0	0	1	0	0	0	0	1	0	2
TOTAL VOLUMES:	0	0	0	0	10	3	0	1	2	0	23	2	41

	Southbound Indian Wells Lane			Westbound Highway 111			Northbound Indian Wells Lane			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
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	1	0	1
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	2	2	0	0	0	1	0	1	1	7

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City of Indian Wells
N/S: Miles Avenue/Manitou Drive
E/W: Highway 111
Weather: Clear

File Name : 04_INW_Miles_111 AM
Site Code : 99924117
Start Date : 2/22/2024
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Groups Printed- Total Volume

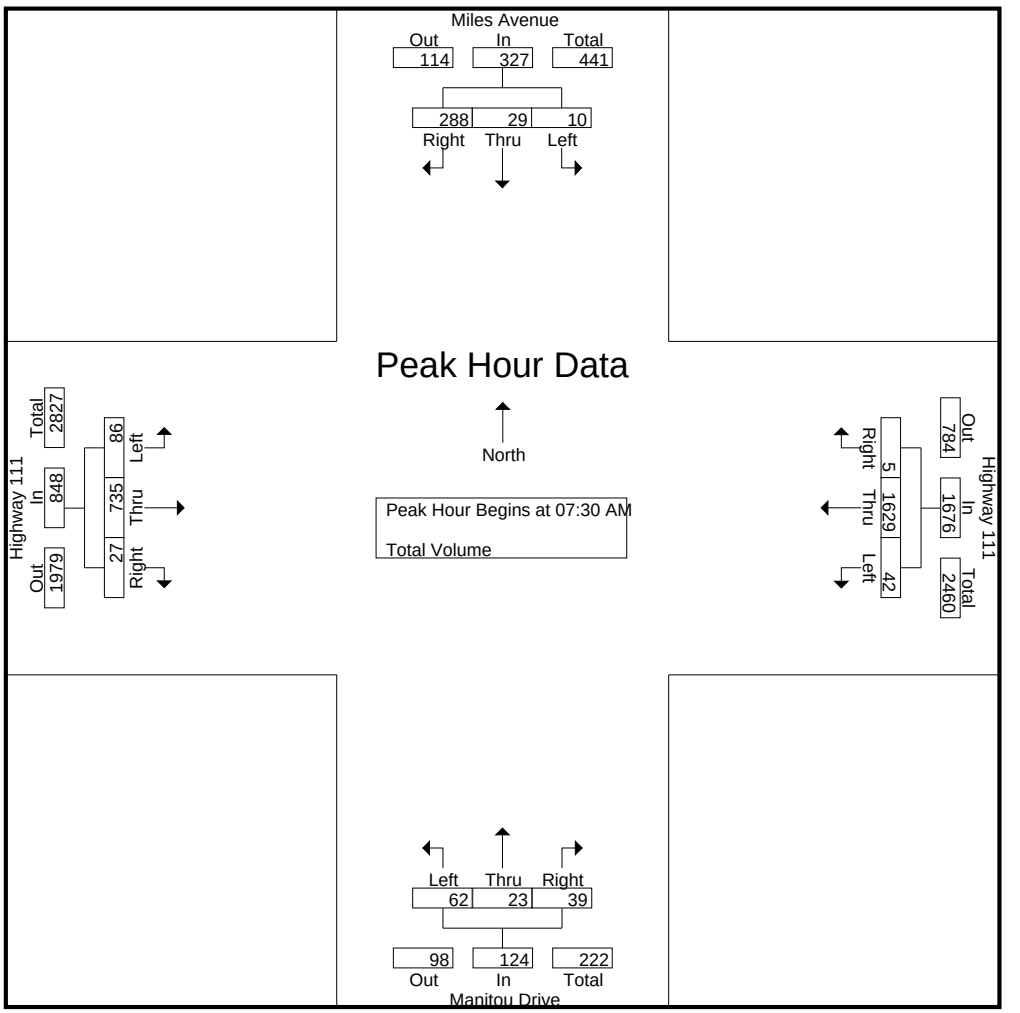
	Miles Avenue Southbound				Highway 111 Westbound				Manitou Drive Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	14	52	67	10	248	1	259	9	1	4	14	11	139	5	155	495
07:15 AM	0	9	55	64	7	353	3	363	5	4	6	15	12	115	6	133	575
07:30 AM	4	6	68	78	7	373	1	381	18	7	7	32	18	161	10	189	680
07:45 AM	1	1	91	93	9	486	2	497	16	4	12	32	22	165	0	187	809
Total	6	30	266	302	33	1460	7	1500	48	16	29	93	63	580	21	664	2559
08:00 AM	5	14	73	92	12	357	1	370	7	7	13	27	25	200	5	230	719
08:15 AM	0	8	56	64	14	413	1	428	21	5	7	33	21	209	12	242	767
08:30 AM	0	11	59	70	10	329	2	341	8	7	13	28	21	160	11	192	631
08:45 AM	3	9	53	65	14	334	6	354	11	5	10	26	20	204	13	237	682
Total	8	42	241	291	50	1433	10	1493	47	24	43	114	87	773	41	901	2799
Grand Total	14	72	507	593	83	2893	17	2993	95	40	72	207	150	1353	62	1565	5358
Apprch %	2.4	12.1	85.5		2.8	96.7	0.6		45.9	19.3	34.8		9.6	86.5	4		
Total %	0.3	1.3	9.5	11.1	1.5	54	0.3	55.9	1.8	0.7	1.3	3.9	2.8	25.3	1.2	29.2	

	Miles Avenue Southbound				Highway 111 Westbound				Manitou Drive Northbound				Highway 111 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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	4	6	68	78	7	373	1	381	18	**7**	7	32	18	161	10	189	680
07:45 AM	1	1	**91**	**93**	9	**486**	**2**	**497**	16	4	12	32	22	165	0	187	**809**
08:00 AM	**5**	**14**	73	92	12	357	1	370	7	7	**13**	27	**25**	200	5	230	719
08:15 AM	0	8	56	64	**14**	413	1	428	**21**	5	7	**33**	21	**209**	**12**	**242**	767
Total Volume	10	29	288	327	42	1629	5	1676	62	23	39	124	86	735	27	848	2975
% App. Total	3.1	8.9	88.1		2.5	97.2	0.3		50	18.5	31.5		10.1	86.7	3.2		
PHF	.500	.518	.791	.879	.750	.838	.625	.843	.738	.821	.750	.939	.860	.879	.563	.876	.919

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City of Indian Wells
N/S: Miles Avenue/Manitou Drive
E/W: Highway 111
Weather: Clear

File Name : 04_INW_Miles_111 AM
Site Code : 99924117
Start Date : 2/22/2024
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM				07:30 AM				07:30 AM				08:00 AM			
+0 mins.	0	9	55	64	7	373	1	381	18	**7**	7	32	**25**	200	5	230
+15 mins.	4	6	68	78	9	**486**	**2**	**497**	16	4	12	32	21	**209**	12	**242**
+30 mins.	1	1	**91**	**93**	12	357	1	370	7	7	**13**	27	21	160	11	192
+45 mins.	**5**	**14**	73	92	**14**	413	1	428	**21**	5	7	**33**	20	204	**13**	237
Total Volume	10	30	287	327	42	1629	5	1676	62	23	39	124	87	773	41	901
% App. Total	3.1	9.2	87.8		2.5	97.2	0.3		50	18.5	31.5		9.7	85.8	4.6	
PHF	.500	.536	.788	.879	.750	.838	.625	.843	.738	.821	.750	.939	.870	.925	.788	.931

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City of Indian Wells
N/S: Miles Avenue/Manitou Drive
E/W: Highway 111
Weather: Clear

File Name : 04_INW_Miles_111 PM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

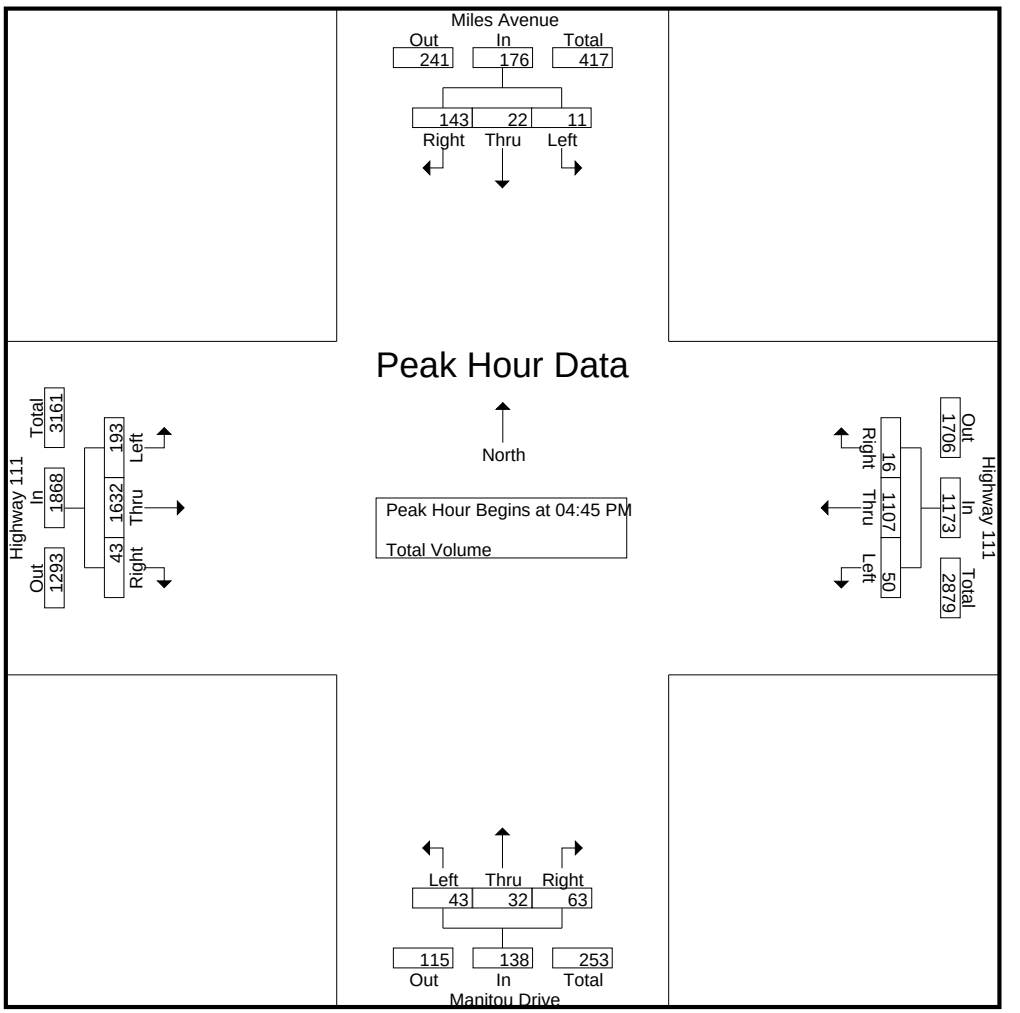
	Miles Avenue Southbound				Highway 111 Westbound				Manitou Drive Northbound				Highway 111 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	2	5	37	44	14	262	3	279	12	7	18	37	50	409	14	473	833
04:15 PM	4	3	33	40	10	279	2	291	6	3	4	13	61	401	7	469	813
04:30 PM	3	6	37	46	17	291	3	311	10	6	13	29	44	389	8	441	827
04:45 PM	3	3	36	42	14	271	0	285	9	7	14	30	43	372	9	424	781
Total	12	17	143	172	55	1103	8	1166	37	23	49	109	198	1571	38	1807	3254
05:00 PM	2	3	34	39	11	264	4	279	13	11	21	45	61	419	8	488	851
05:15 PM	1	6	40	47	17	278	4	299	13	7	11	31	41	376	12	429	806
05:30 PM	5	10	33	48	8	294	8	310	8	7	17	32	48	465	14	527	917
05:45 PM	2	8	30	40	14	259	6	279	7	9	12	28	45	294	5	344	691
Total	10	27	137	174	50	1095	22	1167	41	34	61	136	195	1554	39	1788	3265
Grand Total	22	44	280	346	105	2198	30	2333	78	57	110	245	393	3125	77	3595	6519
Apprch %	6.4	12.7	80.9		4.5	94.2	1.3		31.8	23.3	44.9		10.9	86.9	2.1		
Total %	0.3	0.7	4.3	5.3	1.6	33.7	0.5	35.8	1.2	0.9	1.7	3.8	6	47.9	1.2	55.1	

	Miles Avenue Southbound				Highway 111 Westbound				Manitou Drive Northbound				Highway 111 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	3	36	42	14	271	0	285	9	7	14	30	43	372	9	424	781
05:00 PM	2	3	34	39	11	264	4	279	**13**	**11**	**21**	**45**	**61**	419	8	488	851
05:15 PM	1	6	**40**	47	**17**	278	4	299	13	7	11	31	41	376	12	429	806
05:30 PM	**5**	**10**	33	**48**	8	**294**	**8**	**310**	8	7	17	32	48	**465**	**14**	**527**	**917**
Total Volume	11	22	143	176	50	1107	16	1173	43	32	63	138	193	1632	43	1868	3355
% App. Total	6.2	12.5	81.2		4.3	94.4	1.4		31.2	23.2	45.7		10.3	87.4	2.3		
PHF	.550	.550	.894	.917	.735	.941	.500	.946	.827	.727	.750	.767	.791	.877	.768	.886	.915

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City of Indian Wells
N/S: Miles Avenue/Manitou Drive
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File Name : 04_INW_Miles_111 PM
Site Code : 99924117
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:30 PM				04:45 PM				04:45 PM			
+0 mins.	3	3	36	42	**17**	**291**	3	**311**	9	7	14	30	43	372	9	424
+15 mins.	2	3	34	39	14	271	0	285	**13**	**11**	**21**	**45**	**61**	419	8	488
+30 mins.	1	6	**40**	47	11	264	**4**	279	13	7	11	31	41	376	12	429
+45 mins.	**5**	**10**	33	**48**	17	278	4	299	8	7	17	32	48	**465**	**14**	**527**
Total Volume	11	22	143	176	59	1104	11	1174	43	32	63	138	193	1632	43	1868
% App. Total	6.2	12.5	81.2		5	94	0.9		31.2	23.2	45.7		10.3	87.4	2.3	
PHF	.550	.550	.894	.917	.868	.948	.688	.944	.827	.727	.750	.767	.791	.877	.768	.886

Location: Indian Wells
N/S: Miles Avenue/Manitou Drive
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

PEDESTRIANS

	North Leg Miles Avenue	East Leg Highway 111	South Leg Manitou Drive	West Leg Highway 111	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	1	0	4	1	6
7:15 AM	0	0	0	0	0
7:30 AM	1	0	1	0	2
7:45 AM	1	1	0	0	2
8:00 AM	0	0	0	2	2
8:15 AM	0	0	0	1	1
8:30 AM	0	0	1	0	1
8:45 AM	0	1	3	1	5
TOTAL VOLUMES:	3	2	9	5	19

	North Leg Miles Avenue	East Leg Highway 111	South Leg Manitou Drive	West Leg Highway 111	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	2	0	2
4:15 PM	0	3	0	0	3
4:30 PM	0	0	10	0	10
4:45 PM	0	0	0	0	0
5:00 PM	0	0	1	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	1	0	1
5:45 PM	0	1	0	0	1
TOTAL VOLUMES:	0	4	14	0	18

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Location: Indian Wells
N/S: Miles Avenue/Manitou Drive
E/W: Highway 111

Date: 2/22/2024
Day: Thursday

BICYCLES

	Southbound Miles Avenue			Westbound Highway 111			Northbound Manitou Drive			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	10	0	10
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30 AM	1	0	7	0	1	0	0	0	0	0	0	0	9
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:15 AM	1	0	0	0	1	0	0	0	0	0	1	0	3
8:30 AM	0	0	0	0	0	0	1	1	0	4	1	1	8
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
TOTAL VOLUMES:	2	0	7	0	2	1	1	1	0	5	14	1	34

	Southbound Miles Avenue			Westbound Highway 111			Northbound Manitou Drive			Eastbound Highway 111			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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	2	0	0	0	0	0	0	0	0	0	2
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	1	0	1
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	2	0	0	0	0	0	0	0	1	0	3

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City of Indian Wells
N/S: Washington Street
E/W: Miles Avenue
Weather: Clear

File Name : 05_INW_Wash_Miles AM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

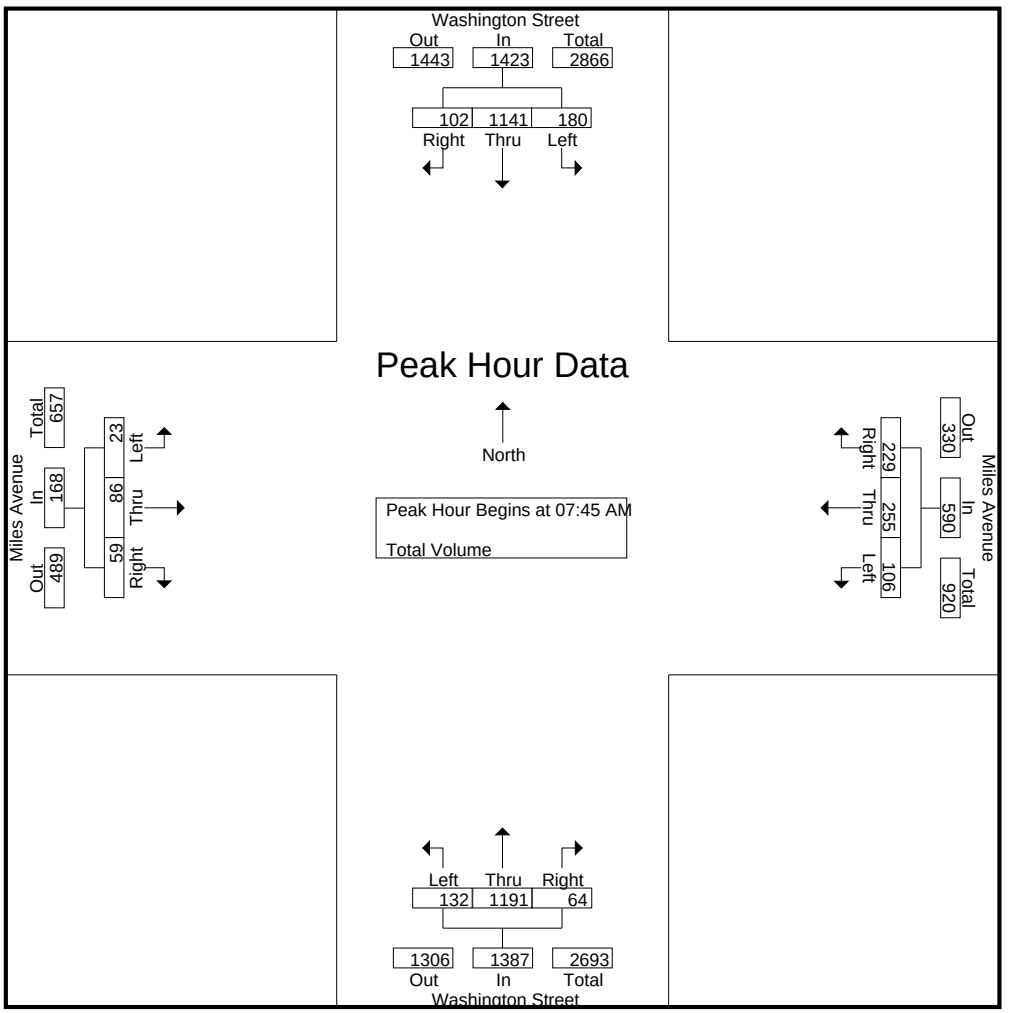
	Washington Street Southbound				Miles Avenue Westbound				Washington Street Northbound				Miles Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	25	166	14	205	14	47	24	85	16	207	6	229	3	13	17	33	552
07:15 AM	34	190	22	246	13	54	48	115	26	263	8	297	2	11	11	24	682
07:30 AM	47	216	19	282	16	61	72	149	43	264	14	321	2	21	15	38	790
07:45 AM	45	290	28	363	30	77	65	172	44	324	11	379	5	19	11	35	949
Total	151	862	83	1096	73	239	209	521	129	1058	39	1226	12	64	54	130	2973
08:00 AM	52	265	24	341	24	54	60	138	23	279	20	322	5	16	10	31	832
08:15 AM	50	306	29	385	22	59	50	131	26	310	17	353	5	23	11	39	908
08:30 AM	33	280	21	334	30	65	54	149	39	278	16	333	8	28	27	63	879
08:45 AM	38	301	23	362	21	64	34	119	38	286	8	332	5	23	20	48	861
Total	173	1152	97	1422	97	242	198	537	126	1153	61	1340	23	90	68	181	3480
Grand Total	324	2014	180	2518	170	481	407	1058	255	2211	100	2566	35	154	122	311	6453
Apprch %	12.9	80	7.1		16.1	45.5	38.5		9.9	86.2	3.9		11.3	49.5	39.2		
Total %	5	31.2	2.8	39	2.6	7.5	6.3	16.4	4	34.3	1.5	39.8	0.5	2.4	1.9	4.8	

	Washington Street Southbound				Miles Avenue Westbound				Washington Street Northbound				Miles Avenue 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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	45	290	28	363	**30**	**77**	**65**	**172**	**44**	**324**	11	**379**	5	19	11	35	**949**
08:00 AM	**52**	265	24	341	24	54	60	138	23	279	**20**	322	5	16	10	31	832
08:15 AM	50	**306**	**29**	**385**	22	59	50	131	26	310	17	353	5	23	11	39	908
08:30 AM	33	280	21	334	30	65	54	149	39	278	16	333	**8**	**28**	**27**	**63**	879
Total Volume	180	1141	102	1423	106	255	229	590	132	1191	64	1387	23	86	59	168	3568
% App. Total	12.6	80.2	7.2		18	43.2	38.8		9.5	85.9	4.6		13.7	51.2	35.1		
PHF	.865	.932	.879	.924	.883	.828	.881	.858	.750	.919	.800	.915	.719	.768	.546	.667	.940

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City of Indian Wells
N/S: Washington Street
E/W: Miles Avenue
Weather: Clear

File Name : 05_INW_Wash_Miles AM
Site Code : 99924117
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				07:45 AM				08:00 AM			
+0 mins.	45	290	28	363	16	61	**72**	149	**44**	**324**	11	**379**	5	16	10	31
+15 mins.	**52**	265	24	341	**30**	**77**	65	**172**	23	279	**20**	322	5	23	11	39
+30 mins.	50	**306**	**29**	**385**	24	54	60	138	26	310	17	353	**8**	**28**	**27**	**63**
+45 mins.	33	280	21	334	22	59	50	131	39	278	16	333	5	23	20	48
Total Volume	180	1141	102	1423	92	251	247	590	132	1191	64	1387	23	90	68	181
% App. Total	12.6	80.2	7.2		15.6	42.5	41.9		9.5	85.9	4.6		12.7	49.7	37.6	
PHF	.865	.932	.879	.924	.767	.815	.858	.858	.750	.919	.800	.915	.719	.804	.630	.718

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City of Indian Wells
N/S: Washington Street
E/W: Miles Avenue
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File Name : 05_INW_Wash_Miles PM
Site Code : 99924117
Start Date : 2/22/2024
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Groups Printed- Total Volume

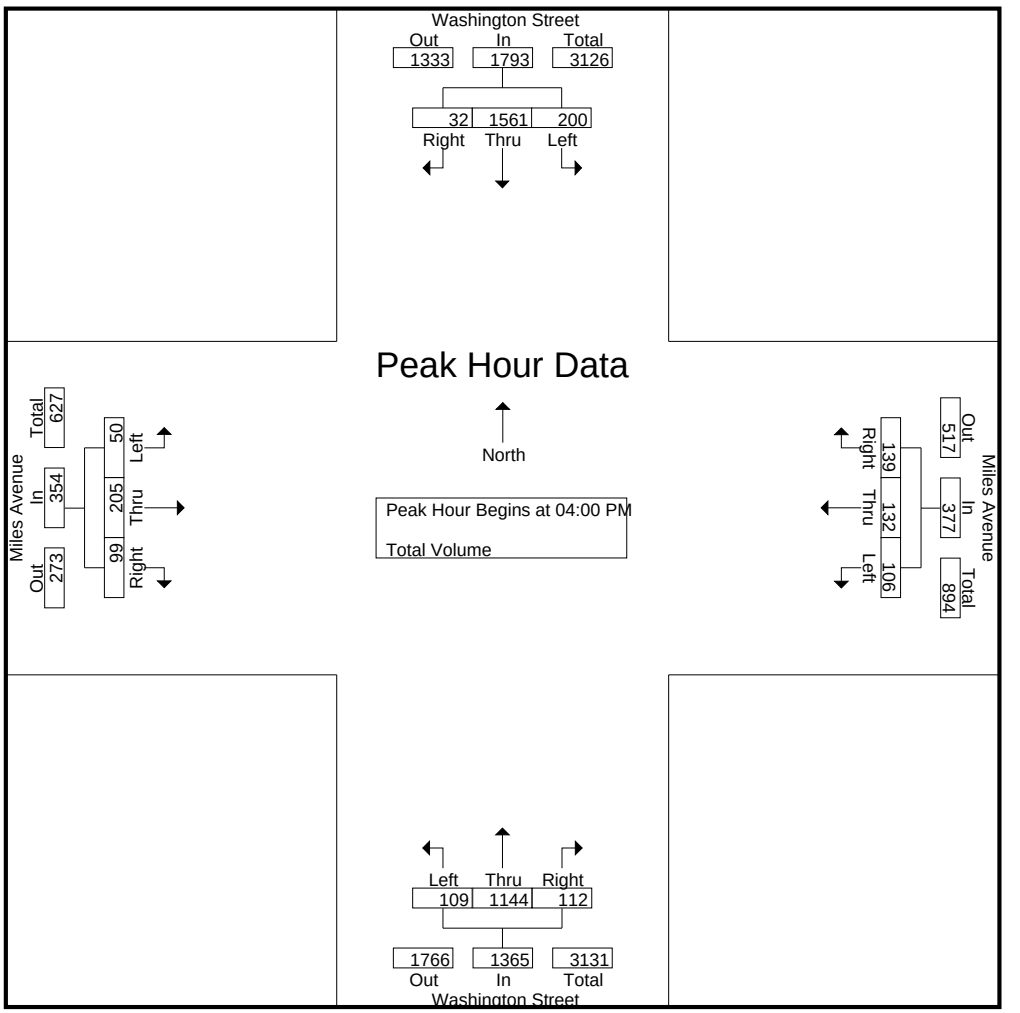
	Washington Street Southbound				Miles Avenue Westbound				Washington Street Northbound				Miles Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	47	405	8	460	25	31	39	95	24	305	29	358	15	58	23	96	1009
04:15 PM	52	384	8	444	30	32	29	91	33	289	29	351	9	49	23	81	967
04:30 PM	56	365	10	431	23	34	39	96	30	262	26	318	13	56	26	95	940
04:45 PM	45	407	6	458	28	35	32	95	22	288	28	338	13	42	27	82	973
Total	200	1561	32	1793	106	132	139	377	109	1144	112	1365	50	205	99	354	3889
05:00 PM	51	350	6	407	25	34	30	89	35	296	27	358	14	67	24	105	959
05:15 PM	58	362	4	424	23	33	31	87	21	301	32	354	15	64	26	105	970
05:30 PM	50	363	5	418	24	37	34	95	24	323	38	385	13	49	19	81	979
05:45 PM	41	306	7	354	22	26	19	67	31	277	25	333	12	47	10	69	823
Total	200	1381	22	1603	94	130	114	338	111	1197	122	1430	54	227	79	360	3731
Grand Total	400	2942	54	3396	200	262	253	715	220	2341	234	2795	104	432	178	714	7620
Apprch %	11.8	86.6	1.6		28	36.6	35.4		7.9	83.8	8.4		14.6	60.5	24.9		
Total %	5.2	38.6	0.7	44.6	2.6	3.4	3.3	9.4	2.9	30.7	3.1	36.7	1.4	5.7	2.3	9.4	

	Washington Street Southbound				Miles Avenue Westbound				Washington Street Northbound				Miles Avenue 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	47	405	8	**460**	25	31	**39**	95	24	**305**	**29**	**358**	**15**	**58**	23	**96**	**1009**
04:15 PM	52	384	8	444	**30**	32	29	91	**33**	289	29	351	9	49	23	81	967
04:30 PM	**56**	365	**10**	431	23	34	39	**96**	30	262	26	318	13	56	26	95	940
04:45 PM	45	**407**	6	458	28	**35**	32	95	22	288	28	338	13	42	**27**	82	973
Total Volume	200	1561	32	1793	106	132	139	377	109	1144	112	1365	50	205	99	354	3889
% App. Total	11.2	87.1	1.8		28.1	35	36.9		8	83.8	8.2		14.1	57.9	28		
PHF	.893	.959	.800	.974	.883	.943	.891	.982	.826	.938	.966	.953	.833	.884	.917	.922	.964

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City of Indian Wells
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File Name : 05_INW_Wash_Miles PM
Site Code : 99924117
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:45 PM				04:30 PM			
+0 mins.	47	405	8	**460**	25	31	**39**	95	22	288	28	338	13	56	26	95
+15 mins.	52	384	8	444	**30**	32	29	91	**35**	296	27	358	13	42	**27**	82
+30 mins.	**56**	365	**10**	431	23	34	39	**96**	21	301	32	354	14	**67**	24	**105**
+45 mins.	45	**407**	6	458	28	**35**	32	95	24	**323**	**38**	**385**	**15**	64	26	105
Total Volume	200	1561	32	1793	106	132	139	377	102	1208	125	1435	55	229	103	387
% App. Total	11.2	87.1	1.8		28.1	35	36.9		7.1	84.2	8.7		14.2	59.2	26.6	
PHF	.893	.959	.800	.974	.883	.943	.891	.982	.729	.935	.822	.932	.917	.854	.954	.921

Location: Indian Wells
N/S: Washington Street
E/W: Miles Avenue

Date: 2/22/2024
Day: Thursday

PEDESTRIANS

	North Leg Washington Street Pedestrians	East Leg Miles Avenue Pedestrians	South Leg Washington Street Pedestrians	West Leg Miles Avenue Pedestrians	
7:00 AM	0	1	0	0	1
7:15 AM	0	1	0	0	1
7:30 AM	0	0	0	0	0
7:45 AM	0	1	0	0	1
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	3	0	0	3

	North Leg Washington Street Pedestrians	East Leg Miles Avenue Pedestrians	South Leg Washington Street Pedestrians	West Leg Miles Avenue Pedestrians	
4:00 PM	4	4	0	0	8
4:15 PM	0	1	0	0	1
4:30 PM	5	2	0	1	8
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:	9	7	0	1	17

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Location: Indian Wells
N/S: Washington Street
E/W: Miles Avenue

Date: 2/22/2024
Day: Thursday

BICYCLES

	Southbound Washington Street			Westbound Miles Avenue			Northbound Washington Street			Eastbound Miles Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
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	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	16	0	16
TOTAL VOLUMES:	0	0	0	0	1	0	0	0	0	0	18	0	19

	Southbound Washington Street			Westbound Miles Avenue			Northbound Washington Street			Eastbound Miles Avenue			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
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	1	0	1

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City of Indian Wells
N/S: Via Toscana/Eldorado Drive
E/W: Fred Waring Drive
Weather: Clear

File Name : 06_INW_Eldo_FW AM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

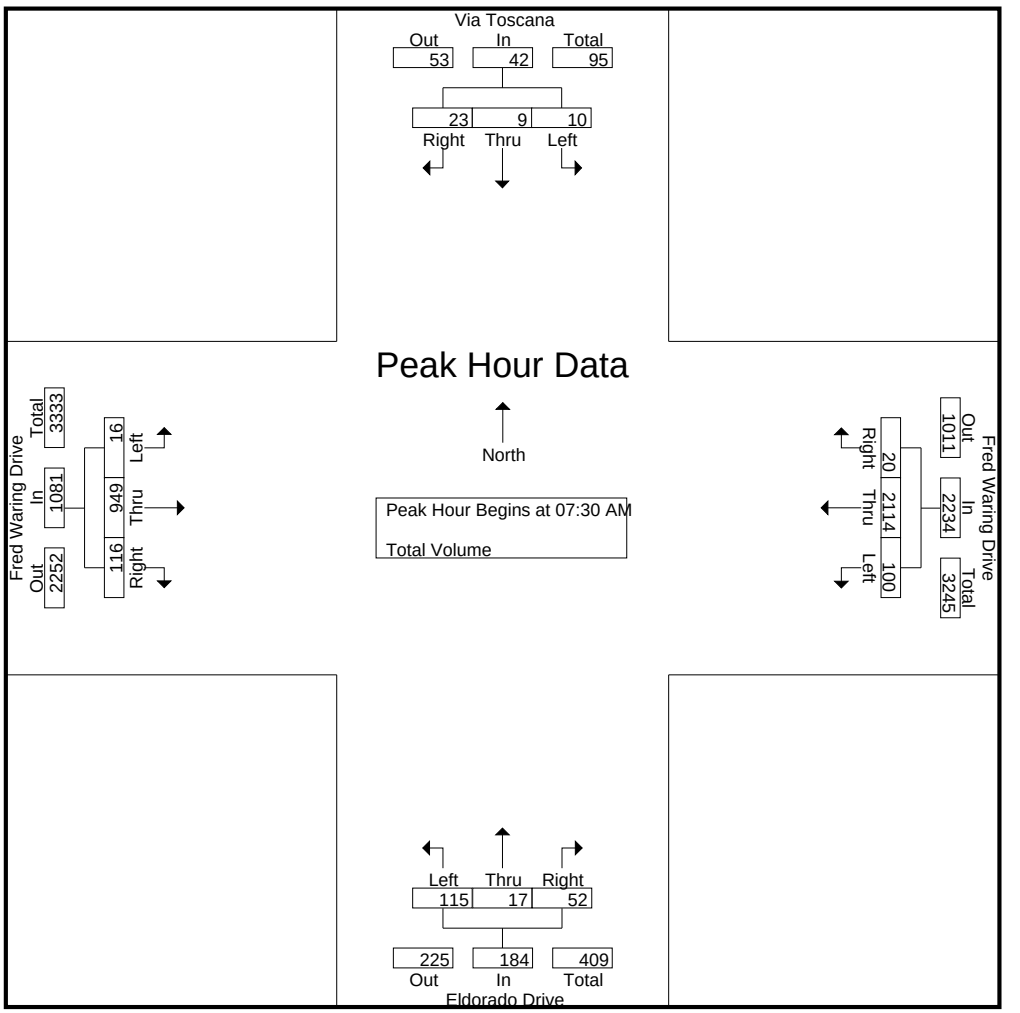
	Via Toscana Southbound				Fred Waring Drive Westbound				Eldorado Drive Northbound				Fred Waring Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	1	2	5	17	225	4	246	12	4	8	24	2	123	20	145	420
07:15 AM	2	0	1	3	28	451	5	484	15	1	14	30	0	126	17	143	660
07:30 AM	1	2	7	10	22	540	3	565	28	6	5	39	1	195	29	225	839
07:45 AM	2	4	2	8	35	611	10	656	26	5	8	39	3	205	28	236	939
Total	7	7	12	26	102	1827	22	1951	81	16	35	132	6	649	94	749	2858
08:00 AM	2	1	8	11	18	483	2	503	32	1	14	47	7	261	30	298	859
08:15 AM	5	2	6	13	25	480	5	510	29	5	25	59	5	288	29	322	904
08:30 AM	5	5	2	12	17	389	7	413	20	4	12	36	1	222	36	259	720
08:45 AM	1	5	5	11	19	459	1	479	20	3	15	38	2	185	22	209	737
Total	13	13	21	47	79	1811	15	1905	101	13	66	180	15	956	117	1088	3220
Grand Total	20	20	33	73	181	3638	37	3856	182	29	101	312	21	1605	211	1837	6078
Apprch %	27.4	27.4	45.2		4.7	94.3	1		58.3	9.3	32.4		1.1	87.4	11.5		
Total %	0.3	0.3	0.5	1.2	3	59.9	0.6	63.4	3	0.5	1.7	5.1	0.3	26.4	3.5	30.2	

	Via Toscana Southbound				Fred Waring Drive Westbound				Eldorado Drive Northbound				Fred Waring Drive 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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	2	7	10	22	540	3	565	28	**6**	5	39	1	195	29	225	839
07:45 AM	2	**4**	2	8	**35**	**611**	**10**	**656**	26	5	8	39	3	205	28	236	**939**
08:00 AM	2	1	**8**	11	18	483	2	503	**32**	1	14	47	**7**	261	**30**	298	859
08:15 AM	**5**	2	6	**13**	25	480	5	510	29	5	**25**	**59**	5	**288**	29	**322**	904
Total Volume	10	9	23	42	100	2114	20	2234	115	17	52	184	16	949	116	1081	3541
% App. Total	23.8	21.4	54.8		4.5	94.6	0.9		62.5	9.2	28.3		1.5	87.8	10.7		
PHF	.500	.563	.719	.808	.714	.865	.500	.851	.898	.708	.520	.780	.571	.824	.967	.839	.943

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City of Indian Wells
N/S: Via Toscana/Eldorado Drive
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Weather: Clear

File Name : 06_INW_Eldo_FW AM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:30 AM				07:45 AM			
+0 mins.	2	1	**8**	11	22	540	3	565	28	**6**	5	39	3	205	28	236
+15 mins.	**5**	2	6	**13**	**35**	**611**	**10**	**656**	26	5	8	39	**7**	261	30	298
+30 mins.	5	**5**	2	12	18	483	2	503	**32**	1	14	47	5	**288**	29	**322**
+45 mins.	1	5	5	11	25	480	5	510	29	5	**25**	**59**	1	222	**36**	259
Total Volume	13	13	21	47	100	2114	20	2234	115	17	52	184	16	976	123	1115
% App. Total	27.7	27.7	44.7		4.5	94.6	0.9		62.5	9.2	28.3		1.4	87.5	11	
PHF	.650	.650	.656	.904	.714	.865	.500	.851	.898	.708	.520	.780	.571	.847	.854	.866

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City of Indian Wells
N/S: Via Toscana/Eldorado Drive
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Weather: Clear

File Name : 06_INW_Eldo_FW PM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

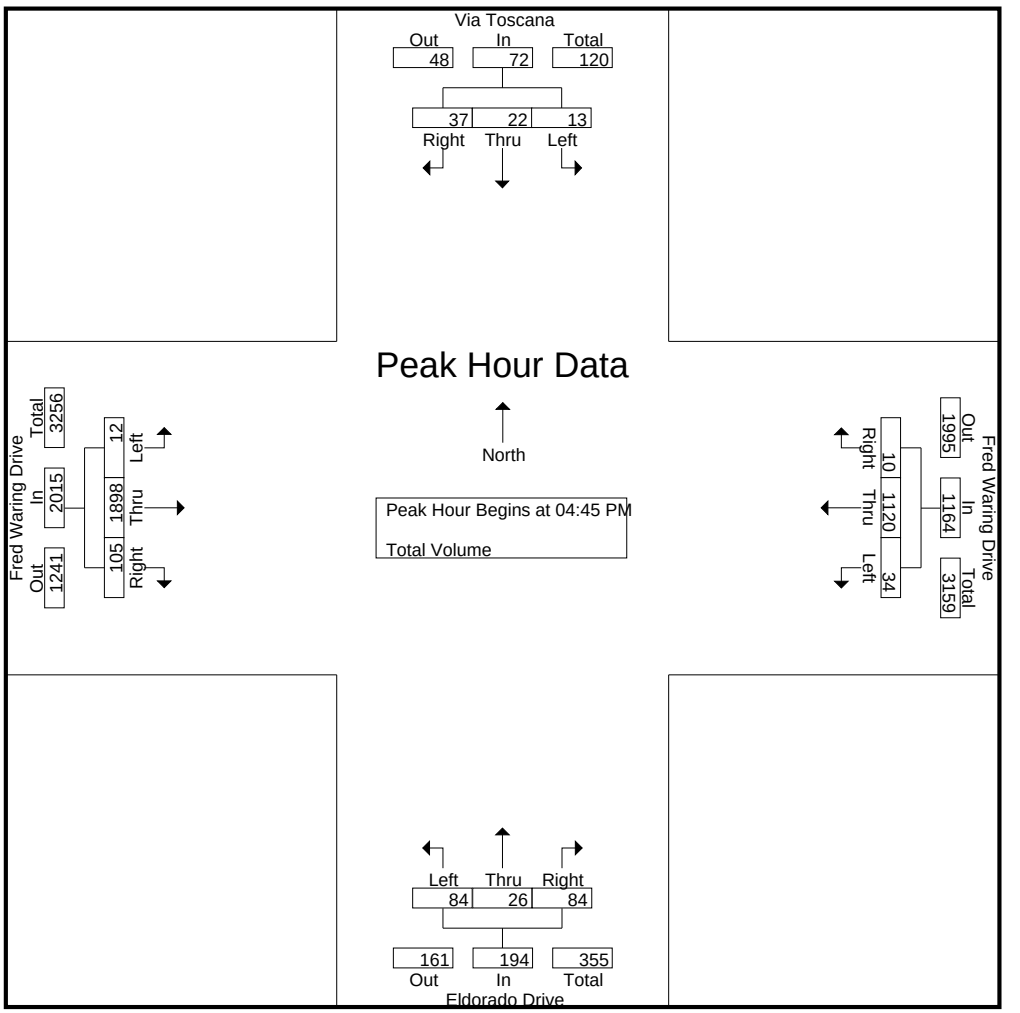
	Via Toscana Southbound				Fred Waring Drive Westbound				Eldorado Drive Northbound				Fred Waring Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	11	7	8	26	10	220	1	231	29	7	18	54	7	493	30	530	841
04:15 PM	10	3	6	19	12	282	2	296	21	6	31	58	8	384	21	413	786
04:30 PM	6	6	9	21	11	270	4	285	21	1	19	41	7	384	22	413	760
04:45 PM	4	3	13	20	10	285	3	298	24	4	28	56	3	412	24	439	813
Total	31	19	36	86	43	1057	10	1110	95	18	96	209	25	1673	97	1795	3200
05:00 PM	1	10	5	16	3	274	2	279	23	9	23	55	1	475	37	513	863
05:15 PM	5	4	11	20	9	307	4	320	16	4	13	33	6	526	19	551	924
05:30 PM	3	5	8	16	12	254	1	267	21	9	20	50	2	485	25	512	845
05:45 PM	7	5	7	19	10	285	2	297	15	3	13	31	6	367	16	389	736
Total	16	24	31	71	34	1120	9	1163	75	25	69	169	15	1853	97	1965	3368
Grand Total	47	43	67	157	77	2177	19	2273	170	43	165	378	40	3526	194	3760	6568
Apprch %	29.9	27.4	42.7		3.4	95.8	0.8		45	11.4	43.7		1.1	93.8	5.2		
Total %	0.7	0.7	1	2.4	1.2	33.1	0.3	34.6	2.6	0.7	2.5	5.8	0.6	53.7	3	57.2	

	Via Toscana Southbound				Fred Waring Drive Westbound				Eldorado Drive Northbound				Fred Waring Drive 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	4	3	**13**	**20**	10	285	3	298	**24**	4	**28**	**56**	3	412	24	439	813
05:00 PM	1	**10**	5	16	3	274	2	279	23	**9**	23	55	1	475	**37**	513	863
05:15 PM	**5**	4	11	20	9	**307**	**4**	**320**	16	4	13	33	**6**	**526**	19	**551**	**924**
05:30 PM	3	5	8	16	**12**	254	1	267	21	9	20	50	2	485	25	512	845
Total Volume	13	22	37	72	34	1120	10	1164	84	26	84	194	12	1898	105	2015	3445
% App. Total	18.1	30.6	51.4		2.9	96.2	0.9		43.3	13.4	43.3		0.6	94.2	5.2		
PHF	.650	.550	.712	.900	.708	.912	.625	.909	.875	.722	.750	.866	.500	.902	.709	.914	.932

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City of Indian Wells
N/S: Via Toscana/Eldorado Drive
E/W: Fred Waring Drive
Weather: Clear

File Name : 06_INW_Eldo_FW PM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:15 PM				04:45 PM			
+0 mins.	**11**	**7**	8	**26**	**11**	270	**4**	285	21	6	**31**	**58**	3	412	24	439
+15 mins.	10	3	6	19	10	285	3	298	21	1	19	41	1	475	**37**	513
+30 mins.	6	6	9	21	3	274	2	279	**24**	4	28	56	**6**	**526**	19	**551**
+45 mins.	4	3	**13**	20	9	**307**	4	**320**	23	**9**	23	55	2	485	25	512
Total Volume	31	19	36	86	33	1136	13	1182	89	20	101	210	12	1898	105	2015
% App. Total	36	22.1	41.9		2.8	96.1	1.1		42.4	9.5	48.1		0.6	94.2	5.2	
PHF	.705	.679	.692	.827	.750	.925	.813	.923	.927	.556	.815	.905	.500	.902	.709	.914

Location: Indian Wells
N/S: Via Toscana/Eldorado Drive
E/W: Fred Waring Drive

Date: 2/22/2024
Day: Thursday

PEDESTRIANS

	North Leg Via Toscana	East Leg Fred Waring Drive	South Leg Eldorado Drive	West Leg Fred Waring Drive	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	1	0	0	1
7:15 AM	1	0	0	0	1
7:30 AM	2	0	0	1	3
7:45 AM	2	1	1	0	4
8:00 AM	0	0	0	1	1
8:15 AM	0	0	0	0	0
8:30 AM	3	0	0	3	6
8:45 AM	1	2	0	1	4
TOTAL VOLUMES:	9	4	1	6	20

	North Leg Via Toscana	East Leg Fred Waring Drive	South Leg Eldorado Drive	West Leg Fred Waring Drive	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	1	2	0	0	3
4:15 PM	2	1	0	0	3
4:30 PM	1	0	0	1	2
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	2	0	0	0	2
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	6	3	0	1	10

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Location: Indian Wells
N/S: Via Toscana/Eldorado Drive
E/W: Fred Waring Drive

Date: 2/22/2024
Day: Thursday

BICYCLES

	Southbound Via Toscana			Westbound Fred Waring Drive			Northbound Eldorado Drive			Eastbound Fred Waring Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
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	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:	0	3	0	0	0	0	0	0	0	0	0	0	3

	Southbound Via Toscana			Westbound Fred Waring Drive			Northbound Eldorado Drive			Eastbound Fred Waring Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
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	1	0	0	0	0	1

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City of Indian Wells
N/S: Warner Trail
E/W: Fred Waring Drive
Weather: Clear

File Name : 07_INW_War_FW AM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 1

Groups Printed- Total Volume

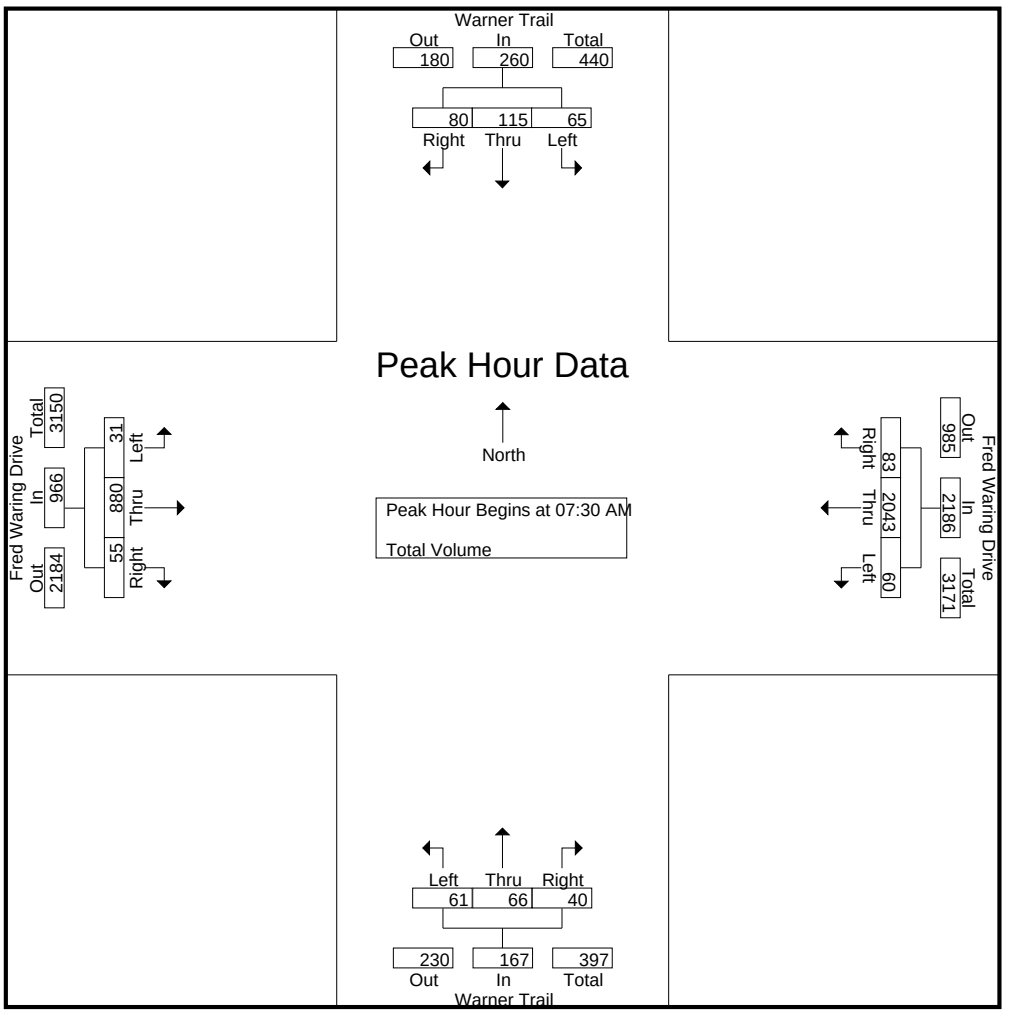
	Warner Trail Southbound				Fred Waring Drive Westbound				Warner Trail Northbound				Fred Waring Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	10	11	7	28	3	238	10	251	6	4	2	12	3	123	6	132	423
07:15 AM	15	19	12	46	12	419	21	452	14	5	6	25	4	131	9	144	667
07:30 AM	20	34	17	71	12	558	15	585	23	20	9	52	2	174	11	187	895
07:45 AM	14	36	27	77	21	600	26	647	17	19	4	40	9	188	7	204	968
Total	59	100	63	222	48	1815	72	1935	60	48	21	129	18	616	33	667	2953
08:00 AM	15	23	18	56	6	456	26	488	7	10	9	26	12	269	16	297	867
08:15 AM	16	22	18	56	21	429	16	466	14	17	18	49	8	249	21	278	849
08:30 AM	13	49	20	82	24	383	21	428	23	24	53	100	19	229	21	269	879
08:45 AM	15	57	4	76	32	378	4	414	28	39	48	115	6	156	22	184	789
Total	59	151	60	270	83	1646	67	1796	72	90	128	290	45	903	80	1028	3384
Grand Total	118	251	123	492	131	3461	139	3731	132	138	149	419	63	1519	113	1695	6337
Apprch %	24	51	25		3.5	92.8	3.7		31.5	32.9	35.6		3.7	89.6	6.7		
Total %	1.9	4	1.9	7.8	2.1	54.6	2.2	58.9	2.1	2.2	2.4	6.6	1	24	1.8	26.7	

	Warner Trail Southbound				Fred Waring Drive Westbound				Warner Trail Northbound				Fred Waring Drive 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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**20**	34	17	71	12	558	15	585	**23**	**20**	9	**52**	2	174	11	187	895
07:45 AM	14	**36**	**27**	**77**	**21**	**600**	**26**	**647**	17	19	4	40	9	188	7	204	**968**
08:00 AM	15	23	18	56	6	456	26	488	7	10	9	26	**12**	**269**	16	**297**	867
08:15 AM	16	22	18	56	21	429	16	466	14	17	**18**	49	8	249	**21**	278	849
Total Volume	65	115	80	260	60	2043	83	2186	61	66	40	167	31	880	55	966	3579
% App. Total	25	44.2	30.8		2.7	93.5	3.8		36.5	39.5	24		3.2	91.1	5.7		
PHF	.813	.799	.741	.844	.714	.851	.798	.845	.663	.825	.556	.803	.646	.818	.655	.813	.924

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File Name : 07_INW_War_FW AM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				08:00 AM				07:45 AM			
+0 mins.	14	36	**27**	77	12	558	15	585	7	10	9	26	9	188	7	204
+15 mins.	15	23	18	56	**21**	**600**	**26**	**647**	14	17	18	49	12	**269**	16	**297**
+30 mins.	**16**	22	18	56	6	456	26	488	23	24	**53**	100	8	249	**21**	278
+45 mins.	13	**49**	20	**82**	21	429	16	466	**28**	**39**	48	**115**	**19**	229	21	269
Total Volume	58	130	83	271	60	2043	83	2186	72	90	128	290	48	935	65	1048
% App. Total	21.4	48	30.6		2.7	93.5	3.8		24.8	31	44.1		4.6	89.2	6.2	
PHF	.906	.663	.769	.826	.714	.851	.798	.845	.643	.577	.604	.630	.632	.869	.774	.882

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Site Code : 99924117
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Groups Printed- Total Volume

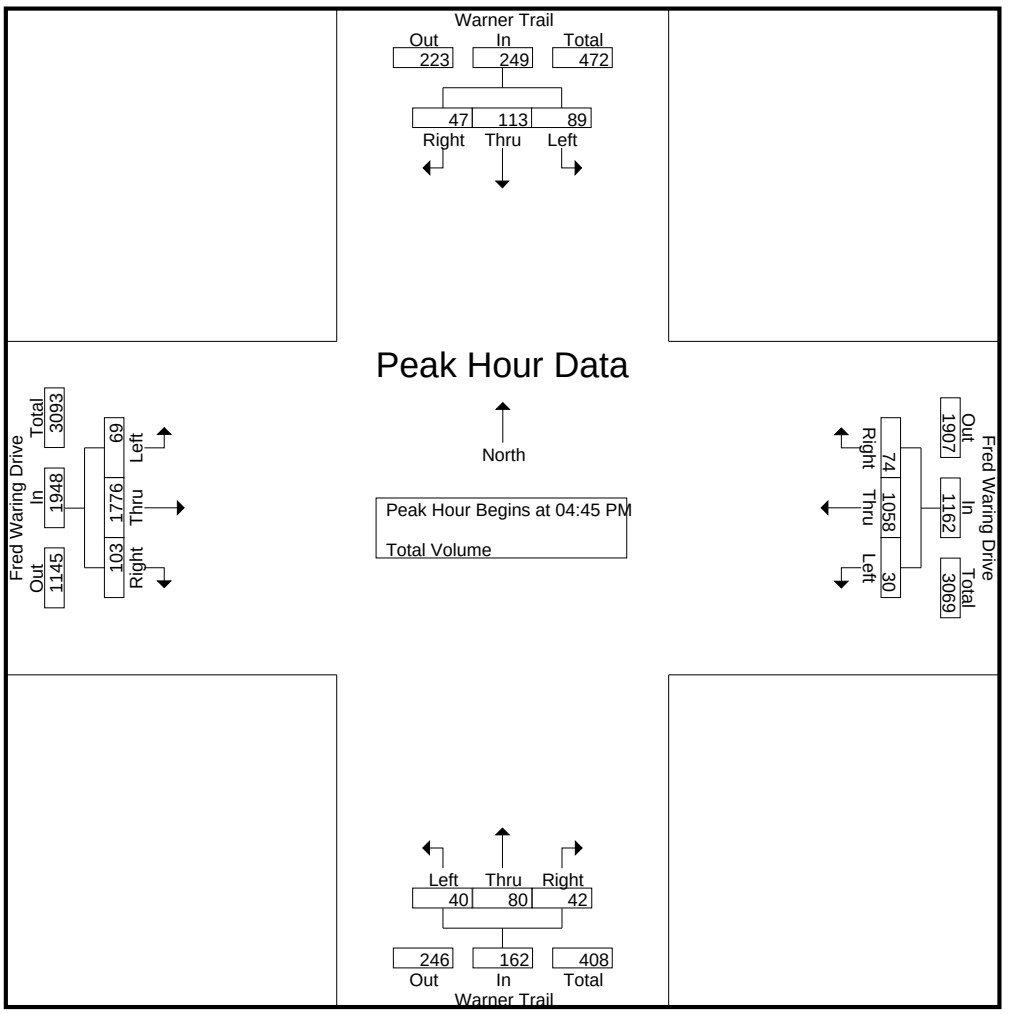
	Warner Trail Southbound				Fred Waring Drive Westbound				Warner Trail Northbound				Fred Waring Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	22	24	12	58	5	213	20	238	12	17	9	38	21	507	19	547	881
04:15 PM	20	25	11	56	8	261	17	286	9	15	12	36	12	388	20	420	798
04:30 PM	16	30	15	61	8	264	7	279	15	20	17	52	8	378	24	410	802
04:45 PM	16	26	12	54	7	276	16	299	11	20	19	50	10	401	16	427	830
Total	74	105	50	229	28	1014	60	1102	47	72	57	176	51	1674	79	1804	3311
05:00 PM	18	22	13	53	11	251	17	279	11	20	8	39	19	440	31	490	861
05:15 PM	28	32	8	68	6	291	24	321	8	23	11	42	21	488	28	537	968
05:30 PM	27	33	14	74	6	240	17	263	10	17	4	31	19	447	28	494	862
05:45 PM	22	27	4	53	2	240	21	263	6	17	3	26	2	357	15	374	716
Total	95	114	39	248	25	1022	79	1126	35	77	26	138	61	1732	102	1895	3407
Grand Total	169	219	89	477	53	2036	139	2228	82	149	83	314	112	3406	181	3699	6718
Apprch %	35.4	45.9	18.7		2.4	91.4	6.2		26.1	47.5	26.4		3	92.1	4.9		
Total %	2.5	3.3	1.3	7.1	0.8	30.3	2.1	33.2	1.2	2.2	1.2	4.7	1.7	50.7	2.7	55.1	

	Warner Trail Southbound				Fred Waring Drive Westbound				Warner Trail Northbound				Fred Waring Drive 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	16	26	12	54	7	276	16	299	**11**	20	**19**	**50**	10	401	16	427	830
05:00 PM	18	22	13	53	**11**	251	17	279	11	20	8	39	19	440	**31**	490	861
05:15 PM	**28**	32	8	68	6	**291**	**24**	**321**	8	**23**	11	42	**21**	**488**	28	**537**	**968**
05:30 PM	27	**33**	**14**	**74**	6	240	17	263	10	17	4	31	19	447	28	494	862
Total Volume	89	113	47	249	30	1058	74	1162	40	80	42	162	69	1776	103	1948	3521
% App. Total	35.7	45.4	18.9		2.6	91	6.4		24.7	49.4	25.9		3.5	91.2	5.3		
PHF	.795	.856	.839	.841	.682	.909	.771	.905	.909	.870	.553	.810	.821	.910	.831	.907	.909

Counts Unlimited, Inc.
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City of Indian Wells
N/S: Warner Trail
E/W: Fred Waring Drive
Weather: Clear

File Name : 07_INW_War_FW PM
Site Code : 99924117
Start Date : 2/22/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:30 PM				04:30 PM				04:45 PM			
+0 mins.	16	26	12	54	8	264	7	279	**15**	20	17	**52**	10	401	16	427
+15 mins.	18	22	13	53	7	276	16	299	11	20	**19**	50	19	440	**31**	490
+30 mins.	**28**	32	8	68	**11**	251	17	279	11	20	8	39	**21**	**488**	28	**537**
+45 mins.	27	**33**	**14**	**74**	6	**291**	**24**	**321**	8	**23**	11	42	19	447	28	494
Total Volume	89	113	47	249	32	1082	64	1178	45	83	55	183	69	1776	103	1948
% App. Total	35.7	45.4	18.9		2.7	91.9	5.4		24.6	45.4	30.1		3.5	91.2	5.3	
PHF	.795	.856	.839	.841	.727	.930	.667	.917	.750	.902	.724	.880	.821	.910	.831	.907

Location: Indian Wells
N/S: Warner Trail
E/W: Fred Waring Drive

Date: 2/22/2024
Day: Thursday

PEDESTRIANS

	North Leg Warner Trail	East Leg Fred Waring Drive	South Leg Warner Trail	West Leg Fred Waring Drive	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	1	1	2
7:30 AM	2	2	0	0	4
7:45 AM	0	2	0	0	2
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	1	6	2	2	11
8:45 AM	0	3	0	0	3
TOTAL VOLUMES:	3	13	3	3	22

	North Leg Warner Trail	East Leg Fred Waring Drive	South Leg Warner Trail	West Leg Fred Waring Drive	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	1	2	0	1	4
4:15 PM	1	0	0	0	1
4:30 PM	1	2	0	0	3
4:45 PM	0	0	0	0	0
5:00 PM	0	1	0	0	1
5:15 PM	0	0	0	0	0
5:30 PM	0	0	1	1	2
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	3	5	1	2	11

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Location: Indian Wells
N/S: Warner Trail
E/W: Fred Waring Drive

Date: 2/22/2024
Day: Thursday

BICYCLES

	Southbound Warner Trail			Westbound Fred Waring Drive			Northbound Warner Trail			Eastbound Fred Waring Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	8	0	0	0	0	0	0	0	0	0	0	8
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	0	0	0	0	0	3	0	0	0	0	4
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	3	0	0	0	0	3
8:45 AM	0	14	0	0	0	0	0	1	0	0	0	0	15
TOTAL VOLUMES:	0	24	0	0	0	0	0	7	0	0	0	0	31

	Southbound Warner Trail			Westbound Fred Waring Drive			Northbound Warner Trail			Eastbound Fred Waring Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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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Appendix C

Roadway ADT Worksheets

Counts Unlimited, Inc.

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City of Indian Wells
Cook Street
B/ Fred Waring Drive - Highway 111
24 Hour Directional Classification Count

INW003
Site Code: 999-24117

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
02/22/24	1	49	4	0	0	0	0	0	1	0	0	0	0	55
01:00	0	27	1	0	0	0	**1**	0	1	0	0	0	0	30
02:00	0	21	0	0	0	0	0	0	1	0	0	0	0	22
03:00	0	38	4	0	2	0	0	0	2	0	0	0	0	46
04:00	0	142	26	0	0	0	0	0	2	0	0	0	0	170
05:00	**4**	224	55	1	3	0	0	1	0	0	0	0	0	288
06:00	0	**429**	**190**	**8**	**11**	1	0	**3**	**6**	0	**2**	0	0	**650**
07:00	0	283	58	0	0	1	0	0	2	0	0	0	0	344
08:00	0	329	86	0	2	7	0	3	1	0	0	0	0	428
09:00	0	305	87	0	8	1	0	0	2	0	0	0	0	403
10:00	1	333	97	0	5	**10**	0	1	1	0	0	0	0	448
11:00	0	394	107	1	4	7	0	1	0	0	0	0	0	514
12 PM	0	437	128	0	2	**10**	0	0	**3**	0	0	0	0	580
13:00	1	455	115	0	4	6	**2**	**3**	3	0	0	0	0	589
14:00	1	468	128	1	4	6	1	0	1	0	0	0	0	610
15:00	2	**503**	**167**	1	**6**	6	1	2	1	0	0	0	0	**689**
16:00	1	435	87	0	5	4	2	3	0	0	0	0	0	537
17:00	2	449	65	0	3	5	1	0	2	0	0	0	0	527
18:00	0	353	27	0	0	0	0	0	0	0	0	0	0	380
19:00	0	306	15	0	0	1	0	0	0	0	0	0	0	322
20:00	3	414	64	**2**	1	0	0	0	0	0	0	0	0	484
21:00	0	332	25	2	1	0	0	0	0	0	0	0	0	360
22:00	0	239	8	0	2	0	0	0	0	0	0	0	0	249
23:00	**5**	115	9	0	1	0	0	0	1	0	0	0	0	131
Total	21	7080	1553	16	64	65	8	17	30	0	2	0	0	8856
Percent	0.2%	79.9%	17.5%	0.2%	0.7%	0.7%	0.1%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	06:00	06:00	06:00	06:00	10:00	01:00	06:00	06:00		06:00			06:00
Vol.	4	429	190	8	11	10	1	3	6		2			650
PM Peak	23:00	15:00	15:00	20:00	15:00	12:00	13:00	13:00	12:00					15:00
Vol.	5	503	167	2	6	10	2	3	3					689
Grand Total	21	7080	1553	16	64	65	8	17	30	0	2	0	0	8856
Percent	0.2%	79.9%	17.5%	0.2%	0.7%	0.7%	0.1%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Cook Street
B/ Fred Waring Drive - Highway 111
24 Hour Directional Classification Count

INW003
Site Code: 999-24117

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
02/22/24	0	79	11	0	2	0	0	0	2	0	0	0	0	94
01:00	0	41	1	0	0	0	0	0	0	0	0	0	0	42
02:00	0	30	2	0	0	0	0	0	0	0	0	0	0	32
03:00	0	15	4	0	2	0	0	0	1	0	0	0	0	22
04:00	0	48	10	0	1	0	0	1	0	0	0	0	0	60
05:00	0	101	26	0	3	0	0	2	2	0	0	0	0	134
06:00	**1**	206	104	2	4	0	0	**3**	1	0	0	0	0	321
07:00	1	306	**194**	2	8	0	0	0	1	0	0	0	0	512
08:00	0	442	136	**4**	11	1	0	0	1	0	0	0	0	595
09:00	0	386	126	1	5	**2**	**1**	2	1	0	0	0	0	524
10:00	1	449	106	0	13	1	0	1	**4**	0	0	0	0	575
11:00	1	**489**	120	1	**16**	0	0	0	2	0	0	0	0	**629**
12 PM	0	456	**123**	0	7	1	0	0	0	0	0	0	0	587
13:00	2	413	83	0	9	**2**	**1**	**1**	**2**	0	0	0	0	513
14:00	2	499	94	2	**10**	0	0	0	0	0	0	0	0	607
15:00	0	510	94	**5**	4	1	0	0	1	0	0	0	0	615
16:00	4	491	66	1	2	2	0	0	2	0	0	0	0	568
17:00	2	524	71	1	2	2	0	0	0	0	0	0	0	602
18:00	**7**	373	39	1	1	0	0	0	0	0	0	0	0	421
19:00	0	253	23	0	0	1	0	0	0	0	0	0	0	277
20:00	0	**871**	101	2	0	0	0	0	0	0	0	0	0	**974**
21:00	2	719	59	2	1	0	0	0	0	0	0	0	0	783
22:00	5	394	44	1	2	0	0	0	1	0	0	0	0	447
23:00	0	176	21	0	2	0	0	0	1	0	0	0	0	200
Total	28	8271	1658	25	105	13	2	10	22	0	0	0	0	10134
Percent	0.3%	81.6%	16.4%	0.2%	1.0%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	11:00	07:00	08:00	11:00	09:00	09:00	06:00	10:00					11:00
Vol.	1	489	194	4	16	2	1	3	4					629
PM Peak	18:00	20:00	12:00	15:00	14:00	13:00	13:00	13:00	13:00					20:00
Vol.	7	871	123	5	10	2	1	1	2					974
Grand Total	28	8271	1658	25	105	13	2	10	22	0	0	0	0	10134
Percent	0.3%	81.6%	16.4%	0.2%	1.0%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Cook Street
B/ Fred Waring Drive - Highway 111
24 Hour Directional Classification Count

INW003
Site Code: 999-24117

Northbound, 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
02/22/24	1	128	15	0	2	0	0	0	3	0	0	0	0	149
01:00	0	68	2	0	0	0	**1**	0	1	0	0	0	0	72
02:00	0	51	2	0	0	0	0	0	1	0	0	0	0	54
03:00	0	53	8	0	4	0	0	0	3	0	0	0	0	68
04:00	0	190	36	0	1	0	0	1	2	0	0	0	0	230
05:00	**4**	325	81	1	6	0	0	3	2	0	0	0	0	422
06:00	1	635	**294**	**10**	15	1	0	**6**	**7**	0	**2**	0	0	971
07:00	1	589	252	2	8	1	0	0	3	0	0	0	0	856
08:00	0	771	222	4	13	8	0	3	2	0	0	0	0	1023
09:00	0	691	213	1	13	3	1	2	3	0	0	0	0	927
10:00	2	782	203	0	18	**11**	0	2	5	0	0	0	0	1023
11:00	1	**883**	227	2	**20**	7	0	1	2	0	0	0	0	**1143**
12 PM	0	893	251	0	9	**11**	0	0	3	0	0	0	0	1167
13:00	3	868	198	0	13	8	**3**	**4**	**5**	0	0	0	0	1102
14:00	3	967	222	3	**14**	6	1	0	1	0	0	0	0	1217
15:00	2	1013	**261**	**6**	10	7	1	2	2	0	0	0	0	1304
16:00	5	926	153	1	7	6	2	3	2	0	0	0	0	1105
17:00	4	973	136	1	5	7	1	0	2	0	0	0	0	1129
18:00	**7**	726	66	1	1	0	0	0	0	0	0	0	0	801
19:00	0	559	38	0	0	2	0	0	0	0	0	0	0	599
20:00	3	**1285**	165	4	1	0	0	0	0	0	0	0	0	**1458**
21:00	2	1051	84	4	2	0	0	0	0	0	0	0	0	1143
22:00	5	633	52	1	4	0	0	0	1	0	0	0	0	696
23:00	5	291	30	0	3	0	0	0	2	0	0	0	0	331
Total	49	15351	3211	41	169	78	10	27	52	0	2	0	0	18990
Percent	0.3%	80.8%	16.9%	0.2%	0.9%	0.4%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	11:00	06:00	06:00	11:00	10:00	01:00	06:00	06:00		06:00			11:00
Vol.	4	883	294	10	20	11	1	6	7		2			1143
PM Peak	18:00	20:00	15:00	15:00	14:00	12:00	13:00	13:00	13:00					20:00
Vol.	7	1285	261	6	14	11	3	4	5					1458
Grand Total	49	15351	3211	41	169	78	10	27	52	0	2	0	0	18990
Percent	0.3%	80.8%	16.9%	0.2%	0.9%	0.4%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Cook Street
B/ Highway 111 - Fairway Drive
24 Hour Directional Classification Count

INW008
Site Code: 999-24117

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
02/22/24	1	48	4	0	0	0	0	0	1	0	0	0	0	54
01:00	0	28	0	0	0	0	**1**	0	1	0	0	0	0	30
02:00	0	19	0	0	0	0	0	0	1	0	0	0	0	20
03:00	0	37	6	0	2	0	0	0	2	0	0	0	0	47
04:00	1	151	33	0	0	0	0	0	2	0	0	0	0	187
05:00	**5**	240	70	1	2	0	0	1	0	0	0	0	0	319
06:00	0	**476**	**211**	**8**	6	**1**	0	**3**	**6**	0	**2**	0	0	**713**
07:00	0	138	17	0	0	0	0	0	1	0	0	0	0	156
08:00	0	182	45	0	**7**	0	0	2	1	0	0	0	0	237
09:00	0	183	62	0	6	0	0	0	0	0	0	0	0	251
10:00	1	187	56	0	6	0	0	0	0	0	0	0	0	250
11:00	0	234	66	0	6	0	0	1	1	0	0	0	0	308
12 PM	0	257	58	0	3	0	0	0	1	0	0	0	0	319
13:00	0	239	66	0	2	**1**	**1**	1	1	0	0	0	0	311
14:00	1	273	81	0	2	0	0	0	0	0	0	0	0	357
15:00	0	320	**107**	0	**4**	1	0	0	0	0	0	0	0	432
16:00	4	268	49	0	1	1	0	**3**	0	0	0	0	0	326
17:00	2	267	36	0	2	0	0	0	**2**	0	0	0	0	309
18:00	0	150	6	0	0	0	0	0	0	0	0	0	0	156
19:00	0	141	9	0	0	0	0	0	0	0	0	0	0	150
20:00	3	**460**	66	**2**	1	0	0	0	0	0	0	0	0	**532**
21:00	0	356	29	2	2	0	0	0	0	0	0	0	0	389
22:00	0	262	10	0	2	0	0	0	0	0	0	0	0	274
23:00	**7**	123	9	0	1	0	0	0	1	0	0	0	0	141
Total	25	5039	1096	13	55	4	2	11	21	0	2	0	0	6268
Percent	0.4%	80.4%	17.5%	0.2%	0.9%	0.1%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	06:00	06:00	06:00	08:00	06:00	01:00	06:00	06:00		06:00			06:00
Vol.	5	476	211	8	7	1	1	3	6		2			713
PM Peak	23:00	20:00	15:00	20:00	15:00	13:00	13:00	16:00	17:00					20:00
Vol.	7	460	107	2	4	1	1	3	2					532
Grand Total	25	5039	1096	13	55	4	2	11	21	0	2	0	0	6268
Percent	0.4%	80.4%	17.5%	0.2%	0.9%	0.1%	0.0%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	

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Cook Street
B/ Highway 111 - Fairway Drive
24 Hour Directional Classification Count

INW008
Site Code: 999-24117

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
02/22/24	0	81	10	0	2	0	0	0	**2**	0	0	0	0	95
01:00	0	44	0	0	0	0	0	0	0	0	0	0	0	44
02:00	0	28	2	0	0	0	0	0	0	0	0	0	0	30
03:00	0	17	5	0	2	0	0	0	1	0	0	0	0	25
04:00	0	56	9	0	1	0	0	1	0	0	0	0	0	67
05:00	0	110	23	0	4	**1**	0	2	2	0	0	0	0	142
06:00	0	235	**123**	**2**	7	0	0	**3**	1	0	**1**	0	0	**372**
07:00	**1**	182	117	1	6	0	0	0	0	0	0	0	0	307
08:00	0	246	81	1	7	0	0	1	1	0	0	0	0	337
09:00	0	221	75	0	7	0	0	0	1	0	0	0	0	304
10:00	0	241	61	0	**14**	1	0	0	0	0	0	0	0	317
11:00	1	**283**	65	0	13	0	0	0	0	0	0	0	0	362
12 PM	0	249	69	0	2	1	0	0	0	0	0	0	0	321
13:00	0	228	53	0	**4**	**2**	**1**	0	**1**	0	0	0	0	289
14:00	0	271	53	0	3	0	0	0	0	0	0	0	0	327
15:00	0	259	38	1	4	1	0	0	1	0	0	0	0	304
16:00	4	251	33	0	2	0	0	0	0	0	0	0	0	290
17:00	0	235	16	0	0	0	0	0	0	0	0	0	0	251
18:00	0	155	13	0	0	0	0	0	0	0	0	0	0	168
19:00	0	118	10	0	0	0	0	0	0	0	0	0	0	128
20:00	0	**801**	**93**	**3**	0	0	0	0	0	0	0	0	0	**897**
21:00	2	712	62	2	1	0	0	0	0	0	0	0	0	779
22:00	**5**	398	43	1	2	0	0	0	1	0	0	0	0	450
23:00	0	177	23	0	1	0	0	0	1	0	0	0	0	202
Total	13	5598	1077	11	82	6	1	7	12	0	1	0	0	6808
Percent	0.2%	82.2%	15.8%	0.2%	1.2%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	06:00	06:00	10:00	05:00		06:00	00:00		06:00			06:00
Vol.	1	283	123	2	14	1		3	2		1			372
PM Peak	22:00	20:00	20:00	20:00	13:00	13:00	13:00		13:00					20:00
Vol.	5	801	93	3	4	2	1		1					897
Grand Total	13	5598	1077	11	82	6	1	7	12	0	1	0	0	6808
Percent	0.2%	82.2%	15.8%	0.2%	1.2%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.
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City of Indian Wells
Cook Street
B/ Highway 111 - Fairway Drive
24 Hour Directional Classification Count

INW008
Site Code: 999-24117

Northbound, 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
02/22/24	1	129	14	0	2	0	0	0	3	0	0	0	0	149
01:00	0	72	0	0	0	0	**1**	0	1	0	0	0	0	74
02:00	0	47	2	0	0	0	0	0	1	0	0	0	0	50
03:00	0	54	11	0	4	0	0	0	3	0	0	0	0	72
04:00	1	207	42	0	1	0	0	1	2	0	0	0	0	254
05:00	**5**	350	93	1	6	**1**	0	3	2	0	0	0	0	461
06:00	0	**711**	**334**	**10**	13	1	0	**6**	**7**	0	**3**	0	0	**1085**
07:00	1	320	134	1	6	0	0	0	1	0	0	0	0	463
08:00	0	428	126	1	14	0	0	3	2	0	0	0	0	574
09:00	0	404	137	0	13	0	0	0	1	0	0	0	0	555
10:00	1	428	117	0	**20**	1	0	0	0	0	0	0	0	567
11:00	1	517	131	0	19	0	0	1	1	0	0	0	0	670
12 PM	0	506	127	0	5	1	0	0	1	0	0	0	0	640
13:00	0	467	119	0	6	**3**	**2**	1	**2**	0	0	0	0	600
14:00	1	544	134	0	5	0	0	0	0	0	0	0	0	684
15:00	0	579	145	1	**8**	2	0	0	1	0	0	0	0	736
16:00	**8**	519	82	0	3	1	0	**3**	0	0	0	0	0	616
17:00	2	502	52	0	2	0	0	0	2	0	0	0	0	560
18:00	0	305	19	0	0	0	0	0	0	0	0	0	0	324
19:00	0	259	19	0	0	0	0	0	0	0	0	0	0	278
20:00	3	**1261**	**159**	**5**	1	0	0	0	0	0	0	0	0	**1429**
21:00	2	1068	91	4	3	0	0	0	0	0	0	0	0	1168
22:00	5	660	53	1	4	0	0	0	1	0	0	0	0	724
23:00	7	300	32	0	2	0	0	0	2	0	0	0	0	343
Total	38	10637	2173	24	137	10	3	18	33	0	3	0	0	13076
Percent	0.3%	81.3%	16.6%	0.2%	1.0%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	06:00	06:00	06:00	10:00	05:00	01:00	06:00	06:00		06:00			06:00
Vol.	5	711	334	10	20	1	1	6	7		3			1085
PM Peak	16:00	20:00	20:00	20:00	15:00	13:00	13:00	16:00	13:00					20:00
Vol.	8	1261	159	5	8	3	2	3	2					1429
Grand Total	38	10637	2173	24	137	10	3	18	33	0	3	0	0	13076
Percent	0.3%	81.3%	16.6%	0.2%	1.0%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Eldorado Drive
B/ Fred Waring Drive - Highway 111
24 Hour Directional Classification Count

INW004
Site Code: 999-24117

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
02/22/24	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	1	0	1	0	0	0	0	0	0	0	0	2
04:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
05:00	0	21	5	0	0	0	0	0	0	0	0	0	0	26
06:00	0	37	5	0	1	**1**	0	0	0	0	0	0	0	44
07:00	0	103	31	0	0	0	**1**	0	0	0	0	0	0	135
08:00	0	**148**	**45**	0	0	1	0	**2**	0	0	0	0	0	196
09:00	0	128	38	**2**	**8**	1	0	1	0	0	0	0	0	178
10:00	**1**	146	43	0	7	0	0	1	0	0	0	0	0	**198**
11:00	0	145	39	0	3	0	1	1	0	0	0	0	0	189
12 PM	0	158	47	0	**11**	0	0	2	0	0	0	0	0	218
13:00	**1**	153	51	0	10	**1**	0	1	**1**	0	0	0	0	218
14:00	0	**170**	**55**	0	9	1	0	**3**	0	0	0	0	0	**238**
15:00	0	154	43	0	9	0	0	3	0	0	0	0	0	209
16:00	0	157	29	0	6	1	0	1	0	0	0	0	0	194
17:00	1	131	17	0	6	0	0	0	0	0	0	0	0	155
18:00	0	76	7	0	0	0	0	0	0	0	0	0	0	83
19:00	0	56	8	0	0	0	0	1	0	0	0	0	0	65
20:00	0	56	5	0	2	0	0	0	0	0	0	0	0	63
21:00	1	43	3	0	1	0	0	0	0	0	0	0	0	48
22:00	0	25	4	0	0	0	0	0	0	0	0	0	0	29
23:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
Total	4	1929	477	2	74	6	2	16	1	0	0	0	0	2511
Percent	0.2%	76.8%	19.0%	0.1%	2.9%	0.2%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	08:00	08:00	09:00	09:00	06:00	07:00	08:00						10:00
Vol.	1	148	45	2	8	1	1	2						198
PM Peak	13:00	14:00	14:00		12:00	13:00		14:00	13:00					14:00
Vol.	1	170	55		11	1		3	1					238
Grand Total	4	1929	477	2	74	6	2	16	1	0	0	0	0	2511
Percent	0.2%	76.8%	19.0%	0.1%	2.9%	0.2%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Eldorado Drive
B/ Fred Waring Drive - Highway 111
24 Hour Directional Classification Count

INW004
Site Code: 999-24117

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
02/22/24	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	1	0	1	0	0	0	0	0	0	0	0	5
04:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
05:00	0	16	7	0	0	0	0	0	0	0	0	0	0	23
06:00	0	37	21	0	**4**	1	0	0	0	0	0	0	0	63
07:00	**1**	119	**66**	0	0	0	0	5	0	0	0	0	0	**191**
08:00	1	126	54	**4**	0	1	0	4	0	0	0	0	0	190
09:00	0	127	54	1	2	1	0	**6**	0	0	0	0	0	191
10:00	0	114	34	0	2	0	0	3	0	0	0	0	0	153
11:00	0	**134**	36	0	2	**2**	0	2	0	0	0	0	0	176
12 PM	**3**	121	**46**	0	**5**	**1**	0	**2**	0	0	0	0	0	178
13:00	0	140	39	0	3	0	0	1	0	0	0	0	0	183
14:00	1	162	26	0	5	1	0	0	0	0	0	0	0	195
15:00	0	**173**	18	1	3	0	0	1	0	0	0	0	0	**196**
16:00	1	151	10	**2**	3	0	0	0	0	0	0	0	0	167
17:00	0	155	12	0	0	0	0	0	0	0	0	0	0	167
18:00	0	81	7	0	0	0	0	1	0	0	0	0	0	89
19:00	0	61	4	0	3	0	0	0	0	0	0	0	0	68
20:00	0	43	7	0	0	0	0	0	0	0	0	0	0	50
21:00	0	31	9	0	1	0	0	0	0	0	0	0	0	41
22:00	0	17	0	0	0	0	0	0	0	0	0	0	0	17
23:00	0	6	4	0	0	0	0	0	0	0	0	0	0	10
Total	7	1825	456	8	34	7	0	25	0	0	0	0	0	2362
Percent	0.3%	77.3%	19.3%	0.3%	1.4%	0.3%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	07:00	08:00	06:00	11:00		09:00						07:00
Vol.	1	134	66	4	4	2		6						191
PM Peak	12:00	15:00	12:00	16:00	12:00	12:00		12:00						15:00
Vol.	3	173	46	2	5	1		2						196
Grand Total	7	1825	456	8	34	7	0	25	0	0	0	0	0	2362
Percent	0.3%	77.3%	19.3%	0.3%	1.4%	0.3%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Eldorado Drive
B/ Fred Waring Drive - Highway 111
24 Hour Directional Classification Count

INW004
Site Code: 999-24117

Northbound, 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
02/22/24	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	2	0	2	0	0	0	0	0	0	0	0	7
04:00	0	14	1	0	0	0	0	0	0	0	0	0	0	15
05:00	0	37	12	0	0	0	0	0	0	0	0	0	0	49
06:00	0	74	26	0	5	**2**	0	0	0	0	0	0	0	107
07:00	**1**	222	97	0	0	0	**1**	5	0	0	0	0	0	326
08:00	1	274	**99**	**4**	0	2	0	6	0	0	0	0	0	**386**
09:00	0	255	92	3	**10**	2	0	**7**	0	0	0	0	0	369
10:00	1	260	77	0	9	0	0	4	0	0	0	0	0	351
11:00	0	**279**	75	0	5	2	1	3	0	0	0	0	0	365
12 PM	**3**	279	**93**	0	**16**	1	0	**4**	0	0	0	0	0	396
13:00	1	293	90	0	13	1	0	2	**1**	0	0	0	0	401
14:00	1	**332**	81	0	14	**2**	0	3	0	0	0	0	0	**433**
15:00	0	327	61	1	12	0	0	4	0	0	0	0	0	405
16:00	1	308	39	**2**	9	1	0	1	0	0	0	0	0	361
17:00	1	286	29	0	6	0	0	0	0	0	0	0	0	322
18:00	0	157	14	0	0	0	0	1	0	0	0	0	0	172
19:00	0	117	12	0	3	0	0	1	0	0	0	0	0	133
20:00	0	99	12	0	2	0	0	0	0	0	0	0	0	113
21:00	1	74	12	0	2	0	0	0	0	0	0	0	0	89
22:00	0	42	4	0	0	0	0	0	0	0	0	0	0	46
23:00	0	16	5	0	0	0	0	0	0	0	0	0	0	21
Total	11	3754	933	10	108	13	2	41	1	0	0	0	0	4873
Percent	0.2%	77.0%	19.1%	0.2%	2.2%	0.3%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	08:00	08:00	09:00	06:00	07:00	09:00						08:00
Vol.	1	279	99	4	10	2	1	7						386
PM Peak	12:00	14:00	12:00	16:00	12:00	14:00		12:00	13:00					14:00
Vol.	3	332	93	2	16	2		4	1					433
Grand Total	11	3754	933	10	108	13	2	41	1	0	0	0	0	4873
Percent	0.2%	77.0%	19.1%	0.2%	2.2%	0.3%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Eldorado Drive
B/ Highway 111 - Fairway Drive
24 Hour Directional Classification Count

INW009
Site Code: 999-24117

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
02/22/24	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
05:00	0	12	3	0	0	0	0	0	0	0	0	0	0	15
06:00	**1**	36	4	0	0	**1**	0	0	0	0	0	0	0	42
07:00	0	114	39	0	2	0	0	0	0	0	0	0	0	155
08:00	0	129	48	0	1	1	0	2	0	0	0	0	0	181
09:00	1	129	51	0	4	1	0	**3**	0	0	0	0	0	189
10:00	1	132	**71**	0	**6**	0	0	1	0	0	0	0	0	211
11:00	1	**145**	61	0	3	0	0	3	0	0	0	0	0	**213**
12 PM	**1**	160	72	0	11	0	0	1	**1**	0	0	0	0	246
13:00	1	141	94	0	11	**1**	0	4	1	0	0	0	0	253
14:00	0	182	**104**	0	17	0	0	**10**	0	0	0	0	0	313
15:00	0	**199**	94	0	**18**	0	0	6	0	0	0	0	0	**317**
16:00	0	181	60	0	10	1	**1**	2	0	0	0	0	0	255
17:00	0	169	26	0	9	0	0	1	0	0	0	0	0	205
18:00	0	78	13	0	2	0	0	0	0	0	0	0	0	93
19:00	0	44	8	0	2	0	0	0	0	0	0	0	0	54
20:00	0	41	4	0	1	0	0	0	0	0	0	0	0	46
21:00	0	36	3	0	0	0	0	0	0	0	0	0	0	39
22:00	0	35	2	0	0	0	0	0	0	0	0	0	0	37
23:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
Total	6	1975	760	0	97	5	1	33	2	0	0	0	0	2879
Percent	0.2%	68.6%	26.4%	0.0%	3.4%	0.2%	0.0%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	11:00	10:00		10:00	06:00		09:00						11:00
Vol.	1	145	71		6	1		3						213
PM Peak	12:00	15:00	14:00		15:00	13:00	16:00	14:00	12:00					15:00
Vol.	1	199	104		18	1	1	10	1					317
Grand Total	6	1975	760	0	97	5	1	33	2	0	0	0	0	2879
Percent	0.2%	68.6%	26.4%	0.0%	3.4%	0.2%	0.0%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Eldorado Drive
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24 Hour Directional Classification Count

INW009
Site Code: 999-24117

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
02/22/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	8	4	0	0	0	0	0	0	0	0	0	0	12
05:00	0	28	19	0	0	0	0	0	0	0	0	0	0	47
06:00	0	47	39	0	3	0	0	0	**1**	0	0	0	0	90
07:00	0	92	**101**	**1**	2	0	0	**6**	0	0	0	0	0	202
08:00	0	113	89	1	6	0	0	6	0	0	0	0	0	**215**
09:00	0	96	68	0	3	**1**	0	4	0	0	0	0	0	172
10:00	**1**	**127**	54	0	2	0	0	1	0	0	0	0	0	185
11:00	1	104	66	0	**11**	1	**1**	1	0	0	0	0	0	185
12 PM	**2**	127	**58**	0	1	0	0	**1**	0	0	0	0	0	**189**
13:00	0	105	40	0	2	0	0	1	0	0	0	0	0	148
14:00	0	129	37	0	2	0	0	0	0	0	0	0	0	168
15:00	0	**154**	17	**1**	**4**	0	0	0	0	0	0	0	0	176
16:00	0	118	15	0	1	0	0	0	0	0	0	0	0	134
17:00	0	111	12	0	0	0	0	0	0	0	0	0	0	123
18:00	0	76	5	0	0	0	0	0	0	0	0	0	0	81
19:00	0	73	3	0	2	0	0	0	0	0	0	0	0	78
20:00	0	52	5	0	0	0	0	0	0	0	0	0	0	57
21:00	0	36	6	0	0	0	0	0	0	0	0	0	0	42
22:00	0	20	0	0	0	0	0	0	0	0	0	0	0	20
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	4	1622	638	3	39	2	1	20	1	0	0	0	0	2330
Percent	0.2%	69.6%	27.4%	0.1%	1.7%	0.1%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	10:00	07:00	07:00	11:00	09:00	11:00	07:00	06:00					08:00
Vol.	1	127	101	1	11	1	1	6	1					215
PM Peak	12:00	15:00	12:00	15:00	15:00			12:00						12:00
Vol.	2	154	58	1	4			1						189
Grand Total	4	1622	638	3	39	2	1	20	1	0	0	0	0	2330
Percent	0.2%	69.6%	27.4%	0.1%	1.7%	0.1%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Indian Wells
Eldorado Drive
B/ Highway 111 - Fairway Drive
24 Hour Directional Classification Count

INW009
Site Code: 999-24117

Northbound, 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
02/22/24	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	10	6	0	0	0	0	0	0	0	0	0	0	16
05:00	0	40	22	0	0	0	0	0	0	0	0	0	0	62
06:00	1	83	43	0	3	1	0	0	**1**	0	0	0	0	132
07:00	0	206	**140**	**1**	4	0	0	6	0	0	0	0	0	357
08:00	0	242	137	1	7	1	0	**8**	0	0	0	0	0	396
09:00	1	225	119	0	7	**2**	0	7	0	0	0	0	0	361
10:00	**2**	**259**	125	0	8	0	0	2	0	0	0	0	0	396
11:00	2	249	127	0	**14**	1	**1**	4	0	0	0	0	0	**398**
12 PM	**3**	287	130	0	12	0	0	2	**1**	0	0	0	0	435
13:00	1	246	134	0	13	**1**	0	5	1	0	0	0	0	401
14:00	0	311	**141**	0	19	0	0	**10**	0	0	0	0	0	481
15:00	0	**353**	111	**1**	**22**	0	0	6	0	0	0	0	0	**493**
16:00	0	299	75	0	11	1	**1**	2	0	0	0	0	0	389
17:00	0	280	38	0	9	0	0	1	0	0	0	0	0	328
18:00	0	154	18	0	2	0	0	0	0	0	0	0	0	174
19:00	0	117	11	0	4	0	0	0	0	0	0	0	0	132
20:00	0	93	9	0	1	0	0	0	0	0	0	0	0	103
21:00	0	72	9	0	0	0	0	0	0	0	0	0	0	81
22:00	0	55	2	0	0	0	0	0	0	0	0	0	0	57
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Total	10	3597	1398	3	136	7	2	53	3	0	0	0	0	5209
Percent	0.2%	69.1%	26.8%	0.1%	2.6%	0.1%	0.0%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	10:00	07:00	07:00	11:00	09:00	11:00	08:00	06:00					11:00
Vol.	2	259	140	1	14	2	1	8	1					398
PM Peak	12:00	15:00	14:00	15:00	15:00	13:00	16:00	14:00	12:00					15:00
Vol.	3	353	141	1	22	1	1	10	1					493
Grand Total	10	3597	1398	3	136	7	2	53	3	0	0	0	0	5209
Percent	0.2%	69.1%	26.8%	0.1%	2.6%	0.1%	0.0%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Indian Wells
Fairway Drive
B/ Cook Street - Rancho Palmeras Drive
24 Hour Directional Classification Count

INW011
Site Code: 999-24117

Eastbound

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
02/22/24	0	2	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
04:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
05:00	0	27	3	0	0	0	0	0	0	0	0	0	0	30
06:00	0	44	21	0	2	0	**1**	2	0	0	0	0	0	70
07:00	0	57	40	0	4	0	0	2	0	0	0	0	0	103
08:00	0	100	41	0	1	0	0	1	0	0	0	0	0	143
09:00	0	74	**48**	0	5	0	1	2	0	0	0	0	0	130
10:00	**2**	99	45	0	**9**	0	0	1	**1**	0	0	0	0	157
11:00	1	**127**	36	0	7	0	0	**3**	0	0	0	0	0	**174**
12 PM	**1**	140	42	0	2	0	0	0	0	0	0	0	0	185
13:00	0	145	55	0	3	0	0	1	0	0	0	0	0	204
14:00	0	150	**68**	1	6	0	0	**6**	0	0	0	0	0	231
15:00	0	**187**	64	**2**	**8**	**1**	0	2	0	0	0	0	0	**264**
16:00	0	182	31	0	1	0	0	0	0	0	0	0	0	214
17:00	0	154	13	0	1	0	0	0	0	0	0	0	0	168
18:00	0	85	5	0	0	0	0	0	0	0	0	0	0	90
19:00	0	40	2	0	0	0	0	0	0	0	0	0	0	42
20:00	0	50	2	0	0	0	0	0	0	0	0	0	0	52
21:00	0	31	1	0	0	0	0	0	0	0	0	0	0	32
22:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
23:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
Total	4	1719	519	3	50	1	2	20	1	0	0	0	0	2319
Percent	0.2%	74.1%	22.4%	0.1%	2.2%	0.0%	0.1%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	11:00	09:00		10:00		06:00	11:00	10:00					11:00
Vol.	2	127	48		9		1	3	1					174
PM Peak	12:00	15:00	14:00	15:00	15:00	15:00		14:00						15:00
Vol.	1	187	68	2	8	1		6						264
Grand Total	4	1719	519	3	50	1	2	20	1	0	0	0	0	2319
Percent	0.2%	74.1%	22.4%	0.1%	2.2%	0.0%	0.1%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Fairway Drive
B/ Cook Street - Rancho Palmeras Drive
24 Hour Directional Classification Count

INW011
Site Code: 999-24117

Westbound

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
02/22/24	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	14	0	0	0	0	0	0	0	0	0	0	0	14
06:00	0	25	10	0	2	0	**1**	0	0	0	0	0	0	38
07:00	0	82	30	0	1	0	0	1	0	0	0	0	0	114
08:00	0	107	41	0	4	0	0	0	0	0	0	0	0	152
09:00	0	101	31	0	6	0	0	1	0	0	0	0	0	139
10:00	0	**119**	**45**	0	5	**1**	0	2	0	0	0	0	0	**172**
11:00	**1**	96	42	0	**9**	0	0	**3**	0	0	0	0	0	151
12 PM	**1**	90	40	0	1	**1**	0	**2**	0	0	0	0	0	135
13:00	0	106	41	0	1	0	0	1	0	0	0	0	0	149
14:00	0	**140**	**43**	0	**2**	0	0	1	0	0	0	0	0	**186**
15:00	1	131	37	**2**	2	0	0	1	0	0	0	0	0	174
16:00	0	105	18	0	2	0	0	2	0	0	0	0	0	127
17:00	0	92	12	0	0	0	0	1	0	0	0	0	0	105
18:00	0	57	4	0	0	0	0	0	0	0	0	0	0	61
19:00	0	27	0	0	0	0	0	0	0	0	0	0	0	27
20:00	0	26	5	0	0	0	0	0	0	0	0	0	0	31
21:00	0	29	3	0	0	0	0	0	0	0	0	0	0	32
22:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
23:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	3	1377	403	2	35	2	1	15	0	0	0	0	0	1838
Percent	0.2%	74.9%	21.9%	0.1%	1.9%	0.1%	0.1%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	10:00	10:00		11:00	10:00	06:00	11:00						10:00
Vol.	1	119	45		9	1	1	3						172
PM Peak	12:00	14:00	14:00	15:00	14:00	12:00		12:00						14:00
Vol.	1	140	43	2	2	1		2						186
Grand Total	3	1377	403	2	35	2	1	15	0	0	0	0	0	1838
Percent	0.2%	74.9%	21.9%	0.1%	1.9%	0.1%	0.1%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Fairway Drive
B/ Cook Street - Rancho Palmeras Drive
24 Hour Directional Classification Count

INW011
Site Code: 999-24117

Eastbound, Westbound

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
02/22/24	0	6	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	5	0	0	1	0	0	0	0	0	0	0	0	6
04:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
05:00	0	41	3	0	0	0	0	0	0	0	0	0	0	44
06:00	0	69	31	0	4	0	**2**	2	0	0	0	0	0	108
07:00	0	139	70	0	5	0	0	3	0	0	0	0	0	217
08:00	0	207	82	0	5	0	0	1	0	0	0	0	0	295
09:00	0	175	79	0	11	0	1	3	0	0	0	0	0	269
10:00	**2**	218	**90**	0	14	**1**	0	3	**1**	0	0	0	0	**329**
11:00	2	**223**	78	0	**16**	0	0	**6**	0	0	0	0	0	325
12 PM	**2**	230	82	0	3	**1**	0	2	0	0	0	0	0	320
13:00	0	251	96	0	4	0	0	2	0	0	0	0	0	353
14:00	0	290	**111**	1	8	0	0	**7**	0	0	0	0	0	417
15:00	1	**318**	101	**4**	**10**	1	0	3	0	0	0	0	0	**438**
16:00	0	287	49	0	3	0	0	2	0	0	0	0	0	341
17:00	0	246	25	0	1	0	0	1	0	0	0	0	0	273
18:00	0	142	9	0	0	0	0	0	0	0	0	0	0	151
19:00	0	67	2	0	0	0	0	0	0	0	0	0	0	69
20:00	0	76	7	0	0	0	0	0	0	0	0	0	0	83
21:00	0	60	4	0	0	0	0	0	0	0	0	0	0	64
22:00	0	26	2	0	0	0	0	0	0	0	0	0	0	28
23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
Total	7	3096	922	5	85	3	3	35	1	0	0	0	0	4157
Percent	0.2%	74.5%	22.2%	0.1%	2.0%	0.1%	0.1%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	11:00	10:00		11:00	10:00	06:00	11:00	10:00					10:00
Vol.	2	223	90		16	1	2	6	1					329
PM Peak	12:00	15:00	14:00	15:00	15:00	12:00		14:00						15:00
Vol.	2	318	111	4	10	1		7						438
Grand Total	7	3096	922	5	85	3	3	35	1	0	0	0	0	4157
Percent	0.2%	74.5%	22.2%	0.1%	2.0%	0.1%	0.1%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Fred Waring Drive
B/ Eldorado Drive - Cook Street
24 Hour Directional Classification Count

INW002
Site Code: 999-24117

Eastbound

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
02/22/24	0	54	5	0	1	0	0	0	1	0	0	0	0	61
01:00	0	31	4	0	0	0	0	0	0	0	0	0	0	35
02:00	0	24	4	0	0	0	0	0	0	0	0	0	0	28
03:00	0	18	7	0	1	0	0	1	0	0	0	0	0	27
04:00	0	42	11	0	2	0	0	0	0	0	0	0	0	55
05:00	0	85	31	0	2	0	0	0	0	0	0	0	0	118
06:00	0	193	76	0	0	**2**	0	0	0	0	0	0	0	271
07:00	**3**	583	143	6	11	0	0	0	0	0	0	0	0	746
08:00	1	870	**199**	**11**	7	1	0	2	0	0	0	0	0	1091
09:00	1	673	170	3	**13**	0	0	4	1	0	0	0	0	865
10:00	1	756	147	3	13	2	0	**6**	0	0	0	0	0	928
11:00	0	**925**	162	1	13	1	0	3	**2**	0	0	0	0	**1107**
12 PM	4	1027	185	4	**14**	1	0	1	0	0	0	0	0	1236
13:00	3	1069	190	3	8	0	0	**3**	1	0	0	0	0	1277
14:00	4	1327	259	**8**	8	**2**	0	3	0	0	0	0	0	1611
15:00	7	1488	**280**	5	9	0	0	1	0	0	0	0	0	1790
16:00	7	1515	241	6	7	0	0	1	0	0	**2**	0	0	1779
17:00	**9**	**1729**	225	3	5	1	0	0	**3**	**1**	0	0	0	**1976**
18:00	3	995	87	2	4	0	0	1	0	0	0	0	0	1092
19:00	1	785	60	0	0	0	0	0	1	0	0	0	0	847
20:00	1	694	76	0	2	0	0	0	0	0	0	0	0	773
21:00	0	493	56	0	1	0	0	1	0	0	0	0	0	551
22:00	1	288	26	2	0	0	0	0	0	0	0	0	0	317
23:00	0	122	9	0	0	0	0	1	0	0	0	0	0	132
Total	46	15786	2653	57	121	10	0	28	9	1	2	0	0	18713
Percent	0.2%	84.4%	14.2%	0.3%	0.6%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	08:00	08:00	09:00	06:00		10:00	11:00					11:00
Vol.	3	925	199	11	13	2		6	2					1107
PM Peak	17:00	17:00	15:00	14:00	12:00	14:00		13:00	17:00	17:00	16:00			17:00
Vol.	9	1729	280	8	14	2		3	3	1	2			1976
Grand Total	46	15786	2653	57	121	10	0	28	9	1	2	0	0	18713
Percent	0.2%	84.4%	14.2%	0.3%	0.6%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Fred Waring Drive
B/ Eldorado Drive - Cook Street
24 Hour Directional Classification Count

INW002
Site Code: 999-24117

Westbound

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
02/22/24	0	26	1	0	0	0	0	0	0	0	0	0	0	27
01:00	0	20	0	0	1	0	0	1	0	0	0	0	0	22
02:00	0	19	2	0	0	0	0	0	0	0	0	0	0	21
03:00	0	38	4	0	2	0	0	0	0	0	0	0	0	44
04:00	0	135	17	0	0	0	0	0	0	0	0	0	0	152
05:00	0	284	56	0	5	0	0	1	0	0	0	0	0	346
06:00	0	570	172	3	10	1	0	3	**1**	0	0	0	0	760
07:00	**4**	**1686**	**307**	**9**	16	0	**1**	0	0	0	0	0	0	**2023**
08:00	3	1658	232	3	**17**	**4**	0	**7**	1	0	0	0	0	1925
09:00	1	1227	193	4	14	2	0	0	1	0	0	0	0	1442
10:00	3	1172	186	4	11	2	0	0	1	0	0	0	0	1379
11:00	1	1155	168	1	17	1	0	4	0	0	0	0	0	1347
12 PM	4	981	161	5	**19**	2	0	**3**	0	0	0	0	0	1175
13:00	**15**	1031	185	**6**	17	1	0	0	**1**	0	0	0	0	1256
14:00	1	**1106**	**211**	4	12	2	0	1	0	0	0	0	0	**1337**
15:00	4	1098	181	6	15	0	0	0	0	0	0	0	0	1304
16:00	4	1003	160	5	11	1	0	2	0	0	0	0	0	1186
17:00	3	1087	124	6	8	**3**	0	0	0	0	0	0	0	1231
18:00	4	756	72	0	4	1	0	0	0	0	0	0	0	837
19:00	1	431	67	1	4	0	0	1	0	0	0	0	0	505
20:00	0	331	30	0	1	0	0	0	0	0	0	0	0	362
21:00	0	276	16	0	0	0	0	0	0	0	0	0	0	292
22:00	2	159	13	0	1	0	**1**	0	0	0	0	0	0	176
23:00	0	69	2	0	0	0	0	0	0	0	0	0	0	71
Total	50	16318	2560	57	185	20	2	23	5	0	0	0	0	19220
Percent	0.3%	84.9%	13.3%	0.3%	1.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	07:00	07:00	08:00	08:00	07:00	08:00	06:00					07:00
Vol.	4	1686	307	9	17	4	1	7	1					2023
PM Peak	13:00	14:00	14:00	13:00	12:00	17:00	22:00	12:00	13:00					14:00
Vol.	15	1106	211	6	19	3	1	3	1					1337
Grand Total	50	16318	2560	57	185	20	2	23	5	0	0	0	0	19220
Percent	0.3%	84.9%	13.3%	0.3%	1.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Indian Wells
Fred Waring Drive
B/ Eldorado Drive - Cook Street
24 Hour Directional Classification Count

INW002
Site Code: 999-24117

Eastbound, Westbound

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
02/22/24	0	80	6	0	1	0	0	0	1	0	0	0	0	88
01:00	0	51	4	0	1	0	0	1	0	0	0	0	0	57
02:00	0	43	6	0	0	0	0	0	0	0	0	0	0	49
03:00	0	56	11	0	3	0	0	1	0	0	0	0	0	71
04:00	0	177	28	0	2	0	0	0	0	0	0	0	0	207
05:00	0	369	87	0	7	0	0	1	0	0	0	0	0	464
06:00	0	763	248	3	10	3	0	3	1	0	0	0	0	1031
07:00	**7**	2269	**450**	**15**	27	0	**1**	0	0	0	0	0	0	2769
08:00	4	**2528**	431	14	24	**5**	0	**9**	1	0	0	0	0	**3016**
09:00	2	1900	363	7	27	2	0	4	**2**	0	0	0	0	2307
10:00	4	1928	333	7	24	4	0	6	1	0	0	0	0	2307
11:00	1	2080	330	2	**30**	2	0	7	2	0	0	0	0	2454
12 PM	8	2008	346	9	**33**	3	0	**4**	0	0	0	0	0	2411
13:00	**18**	2100	375	9	25	1	0	3	2	0	0	0	0	2533
14:00	5	2433	**470**	**12**	20	**4**	0	4	0	0	0	0	0	2948
15:00	11	2586	461	11	24	0	0	1	0	0	0	0	0	3094
16:00	11	2518	401	11	18	1	0	3	0	0	**2**	0	0	2965
17:00	12	**2816**	349	9	13	4	0	0	**3**	**1**	0	0	0	**3207**
18:00	7	1751	159	2	8	1	0	1	0	0	0	0	0	1929
19:00	2	1216	127	1	4	0	0	1	1	0	0	0	0	1352
20:00	1	1025	106	0	3	0	0	0	0	0	0	0	0	1135
21:00	0	769	72	0	1	0	0	1	0	0	0	0	0	843
22:00	3	447	39	2	1	0	**1**	0	0	0	0	0	0	493
23:00	0	191	11	0	0	0	0	1	0	0	0	0	0	203
Total	96	32104	5213	114	306	30	2	51	14	1	2	0	0	37933
Percent	0.3%	84.6%	13.7%	0.3%	0.8%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	07:00	07:00	11:00	08:00	07:00	08:00	09:00					08:00
Vol.	7	2528	450	15	30	5	1	9	2					3016
PM Peak	13:00	17:00	14:00	14:00	12:00	14:00	22:00	12:00	17:00	17:00	16:00			17:00
Vol.	18	2816	470	12	33	4	1	4	3	1	2			3207
Grand Total	96	32104	5213	114	306	30	2	51	14	1	2	0	0	37933
Percent	0.3%	84.6%	13.7%	0.3%	0.8%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Indian Wells
Hovley Lane East
B/ East City Limit - West City Limit
24 Hour Directional Classification Count

INW001
Site Code: 999-24117

Eastbound

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
02/22/24	**1**	15	6	0	0	0	0	0	0	0	0	0	0	22
01:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
04:00	1	15	10	0	3	0	0	1	0	0	0	0	0	30
05:00	0	23	16	2	3	0	0	0	1	0	0	0	0	45
06:00	0	101	44	0	21	**15**	0	3	0	1	0	0	0	185
07:00	1	234	100	1	**28**	2	0	**8**	1	**2**	**1**	0	0	378
08:00	1	330	**120**	**5**	15	1	0	1	2	0	0	0	0	475
09:00	0	271	113	1	11	2	0	1	0	0	0	0	0	399
10:00	0	298	101	1	15	1	0	1	**3**	0	0	0	0	420
11:00	0	**387**	116	0	8	1	0	2	0	1	0	0	0	**515**
12 PM	0	399	129	0	**17**	**5**	0	0	0	0	0	0	0	550
13:00	0	405	118	0	14	1	0	3	0	0	0	0	0	541
14:00	**4**	545	174	**4**	15	0	0	4	**1**	0	0	0	0	747
15:00	0	**698**	**240**	0	12	0	0	**6**	0	0	0	0	0	**956**
16:00	1	664	180	0	3	0	0	2	0	0	0	0	0	850
17:00	1	665	104	0	2	0	0	0	0	0	0	0	0	772
18:00	2	323	55	0	0	0	0	0	0	0	0	0	0	380
19:00	0	222	27	0	1	0	0	0	0	0	0	0	0	250
20:00	1	188	29	0	0	0	0	0	0	0	0	0	0	218
21:00	0	136	17	0	0	0	0	0	0	0	0	0	0	153
22:00	0	75	7	0	1	0	0	0	0	0	0	0	0	83
23:00	1	38	4	0	0	0	0	0	0	0	0	0	0	43
Total	14	6063	1712	14	169	28	0	32	8	4	1	0	0	8045
Percent	0.2%	75.4%	21.3%	0.2%	2.1%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	00:00	11:00	08:00	08:00	07:00	06:00		07:00	10:00	07:00	07:00			11:00
Vol.	1	387	120	5	28	15		8	3	2	1			515
PM Peak	14:00	15:00	15:00	14:00	12:00	12:00		15:00	14:00					15:00
Vol.	4	698	240	4	17	5		6	1					956
Grand Total	14	6063	1712	14	169	28	0	32	8	4	1	0	0	8045
Percent	0.2%	75.4%	21.3%	0.2%	2.1%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Hovley Lane East
B/ East City Limit - West City Limit
24 Hour Directional Classification Count

INW001
Site Code: 999-24117

Westbound

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
02/22/24	0	6	4	0	0	0	0	0	0	0	0	0	0	10
01:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	15	1	0	0	0	0	1	0	0	0	0	0	17
04:00	0	50	7	0	0	0	0	0	0	0	0	0	0	57
05:00	0	187	65	0	2	0	0	0	0	0	0	0	0	254
06:00	0	321	161	1	5	1	0	1	1	0	0	0	0	491
07:00	0	**620**	**207**	2	**21**	2	0	4	**2**	0	0	0	0	**858**
08:00	1	546	164	**4**	9	1	0	4	0	0	0	0	0	729
09:00	**2**	351	120	1	12	**4**	0	**5**	1	0	0	0	0	496
10:00	1	370	112	0	17	2	0	5	1	0	0	0	0	508
11:00	0	360	103	0	11	1	0	1	0	0	0	0	0	476
12 PM	1	369	108	0	**18**	**2**	0	2	0	0	0	0	0	500
13:00	0	411	**125**	0	15	0	0	**4**	0	0	0	0	0	**555**
14:00	**3**	**419**	108	**1**	14	1	0	2	**1**	0	0	0	0	549
15:00	1	374	120	0	12	0	0	3	1	0	0	0	0	511
16:00	0	347	73	0	7	2	0	3	0	0	0	0	0	432
17:00	0	341	61	0	3	0	0	0	0	0	0	0	0	405
18:00	1	234	28	0	0	0	0	0	0	0	0	0	0	263
19:00	0	133	11	0	1	0	0	0	0	0	0	0	0	145
20:00	0	139	15	1	1	0	0	0	0	0	0	0	0	156
21:00	0	87	5	0	1	0	0	0	0	0	0	0	0	93
22:00	0	43	1	0	0	0	0	0	0	0	0	0	0	44
23:00	0	18	1	0	0	0	0	0	0	0	0	0	0	19
Total	10	5757	1601	10	149	16	0	35	7	0	0	0	0	7585
Percent	0.1%	75.9%	21.1%	0.1%	2.0%	0.2%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	07:00	08:00	07:00	09:00		09:00	07:00					07:00
Vol.	2	620	207	4	21	4		5	2					858
PM Peak	14:00	14:00	13:00	14:00	12:00	12:00		13:00	14:00					13:00
Vol.	3	419	125	1	18	2		4	1					555
Grand Total	10	5757	1601	10	149	16	0	35	7	0	0	0	0	7585
Percent	0.1%	75.9%	21.1%	0.1%	2.0%	0.2%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Hovley Lane East
B/ East City Limit - West City Limit
24 Hour Directional Classification Count

INW001
Site Code: 999-24117

Eastbound, Westbound

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
02/22/24	1	21	10	0	0	0	0	0	0	0	0	0	0	32
01:00	0	26	2	0	0	0	0	0	0	0	0	0	0	28
02:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
03:00	0	24	2	0	0	0	0	1	0	0	0	0	0	27
04:00	1	65	17	0	3	0	0	1	0	0	0	0	0	87
05:00	0	210	81	2	5	0	0	0	1	0	0	0	0	299
06:00	0	422	205	1	26	**16**	0	4	1	1	0	0	0	676
07:00	1	854	**307**	3	**49**	4	0	**12**	3	**2**	**1**	0	0	**1236**
08:00	**2**	**876**	284	**9**	24	2	0	5	2	0	0	0	0	1204
09:00	2	622	233	2	23	6	0	6	1	0	0	0	0	895
10:00	1	668	213	1	32	3	0	6	**4**	0	0	0	0	928
11:00	0	747	219	0	19	2	0	3	0	1	0	0	0	991
12 PM	1	768	237	0	**35**	**7**	0	2	0	0	0	0	0	1050
13:00	0	816	243	0	29	1	0	7	0	0	0	0	0	1096
14:00	**7**	964	282	**5**	29	1	0	6	**2**	0	0	0	0	1296
15:00	1	**1072**	**360**	0	24	0	0	**9**	1	0	0	0	0	**1467**
16:00	1	1011	253	0	10	2	0	5	0	0	0	0	0	1282
17:00	1	1006	165	0	5	0	0	0	0	0	0	0	0	1177
18:00	3	557	83	0	0	0	0	0	0	0	0	0	0	643
19:00	0	355	38	0	2	0	0	0	0	0	0	0	0	395
20:00	1	327	44	1	1	0	0	0	0	0	0	0	0	374
21:00	0	223	22	0	1	0	0	0	0	0	0	0	0	246
22:00	0	118	8	0	1	0	0	0	0	0	0	0	0	127
23:00	1	56	5	0	0	0	0	0	0	0	0	0	0	62
Total	24	11820	3313	24	318	44	0	67	15	4	1	0	0	15630
Percent	0.2%	75.6%	21.2%	0.2%	2.0%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	07:00	08:00	07:00	06:00		07:00	10:00	07:00	07:00			07:00
Vol.	2	876	307	9	49	16		12	4	2	1			1236
PM Peak	14:00	15:00	15:00	14:00	12:00	12:00		15:00	14:00					15:00
Vol.	7	1072	360	5	35	7		9	2					1467
Grand Total	24	11820	3313	24	318	44	0	67	15	4	1	0	0	15630
Percent	0.2%	75.6%	21.2%	0.2%	2.0%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Hovley Lane East
B/ East City Limit - West City Limit
24 Hour Directional Classification Count

INW001
Site Code: 999-24117

Eastbound

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
02/22/24	**1**	15	6	0	0	0	0	0	0	0	0	0	0	22
01:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
04:00	1	15	10	0	3	0	0	1	0	0	0	0	0	30
05:00	0	23	16	2	3	0	0	0	1	0	0	0	0	45
06:00	0	101	44	0	21	**15**	0	3	0	1	0	0	0	185
07:00	1	234	100	1	**28**	2	0	**8**	1	**2**	**1**	0	0	378
08:00	1	330	**120**	**5**	15	1	0	1	2	0	0	0	0	475
09:00	0	271	113	1	11	2	0	1	0	0	0	0	0	399
10:00	0	298	101	1	15	1	0	1	**3**	0	0	0	0	420
11:00	0	**387**	116	0	8	1	0	2	0	1	0	0	0	**515**
12 PM	0	399	129	0	**17**	**5**	0	0	0	0	0	0	0	550
13:00	0	405	118	0	14	1	0	3	0	0	0	0	0	541
14:00	**4**	545	174	**4**	15	0	0	4	**1**	0	0	0	0	747
15:00	0	**698**	**240**	0	12	0	0	**6**	0	0	0	0	0	**956**
16:00	1	664	180	0	3	0	0	2	0	0	0	0	0	850
17:00	1	665	104	0	2	0	0	0	0	0	0	0	0	772
18:00	2	323	55	0	0	0	0	0	0	0	0	0	0	380
19:00	0	222	27	0	1	0	0	0	0	0	0	0	0	250
20:00	1	188	29	0	0	0	0	0	0	0	0	0	0	218
21:00	0	136	17	0	0	0	0	0	0	0	0	0	0	153
22:00	0	75	7	0	1	0	0	0	0	0	0	0	0	83
23:00	1	38	4	0	0	0	0	0	0	0	0	0	0	43
Total	14	6063	1712	14	169	28	0	32	8	4	1	0	0	8045
Percent	0.2%	75.4%	21.3%	0.2%	2.1%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	00:00	11:00	08:00	08:00	07:00	06:00		07:00	10:00	07:00	07:00			11:00
Vol.	1	387	120	5	28	15		8	3	2	1			515
PM Peak	14:00	15:00	15:00	14:00	12:00	12:00		15:00	14:00					15:00
Vol.	4	698	240	4	17	5		6	1					956
Grand Total	14	6063	1712	14	169	28	0	32	8	4	1	0	0	8045
Percent	0.2%	75.4%	21.3%	0.2%	2.1%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
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24 Hour Directional Classification Count

INW001
Site Code: 999-24117

Westbound

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
02/22/24	0	6	4	0	0	0	0	0	0	0	0	0	0	10
01:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	15	1	0	0	0	0	1	0	0	0	0	0	17
04:00	0	50	7	0	0	0	0	0	0	0	0	0	0	57
05:00	0	187	65	0	2	0	0	0	0	0	0	0	0	254
06:00	0	321	161	1	5	1	0	1	1	0	0	0	0	491
07:00	0	**620**	**207**	2	**21**	2	0	4	**2**	0	0	0	0	**858**
08:00	1	546	164	**4**	9	1	0	4	0	0	0	0	0	729
09:00	**2**	351	120	1	12	**4**	0	**5**	1	0	0	0	0	496
10:00	1	370	112	0	17	2	0	5	1	0	0	0	0	508
11:00	0	360	103	0	11	1	0	1	0	0	0	0	0	476
12 PM	1	369	108	0	**18**	**2**	0	2	0	0	0	0	0	500
13:00	0	411	**125**	0	15	0	0	**4**	0	0	0	0	0	**555**
14:00	**3**	**419**	108	**1**	14	1	0	2	**1**	0	0	0	0	549
15:00	1	374	120	0	12	0	0	3	1	0	0	0	0	511
16:00	0	347	73	0	7	2	0	3	0	0	0	0	0	432
17:00	0	341	61	0	3	0	0	0	0	0	0	0	0	405
18:00	1	234	28	0	0	0	0	0	0	0	0	0	0	263
19:00	0	133	11	0	1	0	0	0	0	0	0	0	0	145
20:00	0	139	15	1	1	0	0	0	0	0	0	0	0	156
21:00	0	87	5	0	1	0	0	0	0	0	0	0	0	93
22:00	0	43	1	0	0	0	0	0	0	0	0	0	0	44
23:00	0	18	1	0	0	0	0	0	0	0	0	0	0	19
Total	10	5757	1601	10	149	16	0	35	7	0	0	0	0	7585
Percent	0.1%	75.9%	21.1%	0.1%	2.0%	0.2%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	07:00	08:00	07:00	09:00		09:00	07:00					07:00
Vol.	2	620	207	4	21	4		5	2					858
PM Peak	14:00	14:00	13:00	14:00	12:00	12:00		13:00	14:00					13:00
Vol.	3	419	125	1	18	2		4	1					555
Grand Total	10	5757	1601	10	149	16	0	35	7	0	0	0	0	7585
Percent	0.1%	75.9%	21.1%	0.1%	2.0%	0.2%	0.0%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Indian Wells
Hovley Lane East
B/ East City Limit - West City Limit
24 Hour Directional Classification Count

INW001
Site Code: 999-24117

Eastbound, Westbound

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
02/22/24	1	21	10	0	0	0	0	0	0	0	0	0	0	32
01:00	0	26	2	0	0	0	0	0	0	0	0	0	0	28
02:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
03:00	0	24	2	0	0	0	0	1	0	0	0	0	0	27
04:00	1	65	17	0	3	0	0	1	0	0	0	0	0	87
05:00	0	210	81	2	5	0	0	0	1	0	0	0	0	299
06:00	0	422	205	1	26	**16**	0	4	1	1	0	0	0	676
07:00	1	854	**307**	3	**49**	4	0	**12**	3	**2**	**1**	0	0	**1236**
08:00	**2**	**876**	284	**9**	24	2	0	5	2	0	0	0	0	1204
09:00	2	622	233	2	23	6	0	6	1	0	0	0	0	895
10:00	1	668	213	1	32	3	0	6	**4**	0	0	0	0	928
11:00	0	747	219	0	19	2	0	3	0	1	0	0	0	991
12 PM	1	768	237	0	**35**	**7**	0	2	0	0	0	0	0	1050
13:00	0	816	243	0	29	1	0	7	0	0	0	0	0	1096
14:00	**7**	964	282	**5**	29	1	0	6	**2**	0	0	0	0	1296
15:00	1	**1072**	**360**	0	24	0	0	**9**	1	0	0	0	0	**1467**
16:00	1	1011	253	0	10	2	0	5	0	0	0	0	0	1282
17:00	1	1006	165	0	5	0	0	0	0	0	0	0	0	1177
18:00	3	557	83	0	0	0	0	0	0	0	0	0	0	643
19:00	0	355	38	0	2	0	0	0	0	0	0	0	0	395
20:00	1	327	44	1	1	0	0	0	0	0	0	0	0	374
21:00	0	223	22	0	1	0	0	0	0	0	0	0	0	246
22:00	0	118	8	0	1	0	0	0	0	0	0	0	0	127
23:00	1	56	5	0	0	0	0	0	0	0	0	0	0	62
Total	24	11820	3313	24	318	44	0	67	15	4	1	0	0	15630
Percent	0.2%	75.6%	21.2%	0.2%	2.0%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	07:00	08:00	07:00	06:00		07:00	10:00	07:00	07:00			07:00
Vol.	2	876	307	9	49	16		12	4	2	1			1236
PM Peak	14:00	15:00	15:00	14:00	12:00	12:00		15:00	14:00					15:00
Vol.	7	1072	360	5	35	7		9	2					1467
Grand Total	24	11820	3313	24	318	44	0	67	15	4	1	0	0	15630
Percent	0.2%	75.6%	21.2%	0.2%	2.0%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Indian Wells
Highway 111
B/ Cook Street - Rancho Palmeras Drive
24 Hour Directional Classification Count

INW006
Site Code: 999-24117

Eastbound

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
02/22/24	0	16	1	0	0	0	0	0	0	0	0	0	0	17
01:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
04:00	1	22	10	0	0	0	0	0	0	0	0	0	0	33
05:00	0	42	24	0	1	0	0	0	0	0	0	0	0	67
06:00	0	92	38	0	1	0	0	0	1	0	0	0	0	132
07:00	0	560	200	3	13	0	0	**11**	4	0	0	0	0	791
08:00	**2**	681	**209**	**9**	**20**	1	**1**	3	4	0	0	0	0	930
09:00	0	650	191	4	15	1	0	4	0	0	0	0	0	865
10:00	0	810	178	2	16	**2**	0	4	**7**	0	0	0	0	1019
11:00	1	**1025**	209	4	14	0	0	3	3	**1**	0	0	0	**1260**
12 PM	2	1104	216	2	15	0	0	**4**	1	0	0	0	0	1344
13:00	2	1141	243	4	**16**	**1**	0	4	**5**	**1**	0	0	0	1417
14:00	4	1264	247	6	12	0	0	2	0	1	0	0	0	1536
15:00	4	1271	**288**	**7**	10	1	0	3	1	1	0	0	0	1586
16:00	**12**	1325	229	7	6	1	0	2	3	0	0	0	0	1585
17:00	2	**1424**	184	5	3	1	0	0	1	0	0	0	0	**1620**
18:00	5	962	114	2	3	0	0	0	1	0	0	0	0	1087
19:00	0	827	71	3	0	0	0	0	1	0	0	0	0	902
20:00	0	269	25	0	0	0	0	0	0	0	0	0	0	294
21:00	1	217	11	0	1	0	0	0	0	0	0	0	0	230
22:00	0	126	8	0	0	0	0	0	0	0	0	0	0	134
23:00	2	47	5	0	1	0	0	0	0	0	0	0	0	55
Total	38	13898	2704	58	147	8	1	40	32	4	0	0	0	16930
Percent	0.2%	82.1%	16.0%	0.3%	0.9%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	11:00	08:00	08:00	08:00	10:00	08:00	07:00	10:00	11:00				11:00
Vol.	2	1025	209	9	20	2	1	11	7	1				1260
PM Peak	16:00	17:00	15:00	15:00	13:00	13:00		12:00	13:00	13:00				17:00
Vol.	12	1424	288	7	16	1		4	5	1				1620
Grand Total	38	13898	2704	58	147	8	1	40	32	4	0	0	0	16930
Percent	0.2%	82.1%	16.0%	0.3%	0.9%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Highway 111
B/ Cook Street - Rancho Palmeras Drive
24 Hour Directional Classification Count

INW006
Site Code: 999-24117

Westbound

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
02/22/24	0	17	0	0	0	0	0	0	0	0	0	0	0	17
01:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
04:00	0	24	4	0	0	0	0	0	0	0	0	0	0	28
05:00	0	59	19	0	3	1	0	1	1	0	0	0	0	84
06:00	0	111	87	0	15	0	0	0	2	0	**1**	0	0	216
07:00	3	1089	**271**	**6**	14	3	0	5	5	0	1	0	0	1397
08:00	0	**1221**	262	2	16	7	0	**15**	**6**	0	0	0	0	**1529**
09:00	**9**	1188	229	6	19	3	0	2	1	0	0	0	0	1457
10:00	1	1163	221	4	21	**11**	0	1	2	0	0	0	0	1424
11:00	0	1157	216	2	**28**	7	0	6	1	0	0	0	0	1417
12 PM	0	1095	213	2	12	**10**	0	1	1	0	0	0	0	1334
13:00	4	1072	226	**6**	**17**	7	1	1	**3**	0	0	0	0	1337
14:00	2	1109	201	4	13	7	1	**4**	2	0	0	0	0	1343
15:00	**6**	**1149**	**234**	4	8	7	1	3	2	0	0	0	0	**1414**
16:00	5	1118	178	4	6	3	**2**	2	2	0	0	0	0	1320
17:00	3	1093	145	3	4	5	1	3	2	0	0	0	0	1259
18:00	5	917	64	3	1	0	0	0	0	0	0	0	0	990
19:00	0	586	25	2	1	1	0	0	1	0	0	0	0	616
20:00	0	174	13	1	0	0	0	0	0	0	0	0	0	188
21:00	1	145	6	0	0	0	0	0	0	0	0	0	0	152
22:00	0	76	4	0	0	0	0	0	0	0	0	0	0	80
23:00	0	39	7	0	0	0	0	0	0	0	0	0	0	46
Total	39	14627	2627	49	178	72	6	44	31	0	2	0	0	17675
Percent	0.2%	82.8%	14.9%	0.3%	1.0%	0.4%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	08:00	07:00	07:00	11:00	10:00		08:00	08:00		06:00			08:00
Vol.	9	1221	271	6	28	11		15	6		1			1529
PM Peak	15:00	15:00	15:00	13:00	13:00	12:00	16:00	14:00	13:00					15:00
Vol.	6	1149	234	6	17	10	2	4	3					1414
Grand Total	39	14627	2627	49	178	72	6	44	31	0	2	0	0	17675
Percent	0.2%	82.8%	14.9%	0.3%	1.0%	0.4%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Highway 111
B/ Cook Street - Rancho Palmeras Drive
24 Hour Directional Classification Count

INW006
Site Code: 999-24117

Eastbound, Westbound

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
02/22/24	0	33	1	0	0	0	0	0	0	0	0	0	0	34
01:00	0	18	2	0	0	0	0	0	0	0	0	0	0	20
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	22	3	0	0	0	0	0	0	0	0	0	0	25
04:00	1	46	14	0	0	0	0	0	0	0	0	0	0	61
05:00	0	101	43	0	4	1	0	1	1	0	0	0	0	151
06:00	0	203	125	0	16	0	0	0	3	0	**1**	0	0	348
07:00	3	1649	**471**	9	27	3	0	16	9	0	1	0	0	2188
08:00	2	1902	471	**11**	36	8	**1**	**18**	**10**	0	0	0	0	2459
09:00	**9**	1838	420	10	34	4	0	6	1	0	0	0	0	2322
10:00	1	1973	399	6	37	**13**	0	5	9	0	0	0	0	2443
11:00	1	**2182**	425	6	**42**	7	0	9	4	**1**	0	0	0	**2677**
12 PM	2	2199	429	4	27	**10**	0	5	2	0	0	0	0	2678
13:00	6	2213	469	10	**33**	8	1	5	**8**	**1**	0	0	0	2754
14:00	6	2373	448	10	25	7	1	**6**	2	1	0	0	0	2879
15:00	10	2420	**522**	**11**	18	8	1	6	3	1	0	0	0	**3000**
16:00	**17**	2443	407	11	12	4	**2**	4	5	0	0	0	0	2905
17:00	5	**2517**	329	8	7	6	1	3	3	0	0	0	0	2879
18:00	10	1879	178	5	4	0	0	0	1	0	0	0	0	2077
19:00	0	1413	96	5	1	1	0	0	2	0	0	0	0	1518
20:00	0	443	38	1	0	0	0	0	0	0	0	0	0	482
21:00	2	362	17	0	1	0	0	0	0	0	0	0	0	382
22:00	0	202	12	0	0	0	0	0	0	0	0	0	0	214
23:00	2	86	12	0	1	0	0	0	0	0	0	0	0	101
Total	77	28525	5331	107	325	80	7	84	63	4	2	0	0	34605
Percent	0.2%	82.4%	15.4%	0.3%	0.9%	0.2%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	07:00	08:00	11:00	10:00	08:00	08:00	08:00	11:00	06:00			11:00
Vol.	9	2182	471	11	42	13	1	18	10	1	1			2677
PM Peak	16:00	17:00	15:00	15:00	13:00	12:00	16:00	14:00	13:00	13:00				15:00
Vol.	17	2517	522	11	33	10	2	6	8	1				3000
Grand Total	77	28525	5331	107	325	80	7	84	63	4	2	0	0	34605
Percent	0.2%	82.4%	15.4%	0.3%	0.9%	0.2%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Highway 111
B/ Miles Avenue - Washington Street
24 Hour Directional Classification Count

INW010
Site Code: 999-24117

Eastbound

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
02/22/24	0	60	11	0	2	0	0	0	2	0	0	0	0	75
01:00	0	35	7	0	0	0	0	0	0	0	0	0	0	42
02:00	0	26	2	0	0	0	0	0	0	0	0	0	0	28
03:00	0	16	3	0	1	0	0	0	1	0	0	0	0	21
04:00	0	39	10	0	1	0	0	1	0	0	0	0	0	51
05:00	1	80	23	0	1	0	0	3	2	0	0	0	0	110
06:00	1	217	64	2	7	0	0	4	3	0	0	0	0	298
07:00	0	458	111	4	**31**	1	0	**6**	1	0	0	0	0	612
08:00	2	649	138	**7**	26	**9**	0	0	3	**3**	0	0	0	837
09:00	**5**	641	162	4	28	0	0	0	**4**	0	0	0	0	844
10:00	1	796	204	3	31	1	0	0	2	0	0	0	0	1038
11:00	1	**1009**	**234**	1	21	1	0	0	1	0	0	0	0	**1268**
12 PM	5	1080	229	2	**20**	**1**	0	0	1	0	0	0	0	1338
13:00	1	1180	252	3	12	1	0	**1**	**3**	0	0	0	0	1453
14:00	5	1310	332	4	13	1	0	0	3	0	0	0	0	1668
15:00	6	1417	**334**	**6**	13	1	0	1	0	0	0	0	0	**1778**
16:00	**10**	1380	231	5	5	0	0	0	2	0	0	0	0	1633
17:00	1	**1431**	175	2	2	0	0	0	0	0	0	0	0	1611
18:00	0	1064	67	2	3	0	0	1	0	0	0	0	0	1137
19:00	0	716	49	3	4	1	0	0	1	0	0	0	0	774
20:00	1	735	64	3	3	0	0	0	0	0	0	0	0	806
21:00	2	613	61	2	0	0	0	0	0	0	0	0	0	678
22:00	6	406	36	1	2	0	0	0	0	0	0	0	0	451
23:00	0	176	16	0	0	0	0	0	1	0	0	0	0	193
Total	48	15534	2815	54	226	17	0	17	30	3	0	0	0	18744
Percent	0.3%	82.9%	15.0%	0.3%	1.2%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	11:00	08:00	07:00	08:00		07:00	09:00	08:00				11:00
Vol.	5	1009	234	7	31	9		6	4	3				1268
PM Peak	16:00	17:00	15:00	15:00	12:00	12:00		13:00	13:00					15:00
Vol.	10	1431	334	6	20	1		1	3					1778
Grand Total	48	15534	2815	54	226	17	0	17	30	3	0	0	0	18744
Percent	0.3%	82.9%	15.0%	0.3%	1.2%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Highway 111
B/ Miles Avenue - Washington Street
24 Hour Directional Classification Count

INW010
Site Code: 999-24117

Westbound

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
02/22/24	1	35	2	0	0	0	0	0	1	0	0	0	0	39
01:00	0	23	1	0	1	0	0	1	0	0	0	0	0	26
02:00	0	16	2	0	0	0	0	0	1	0	0	0	0	19
03:00	0	41	2	0	0	0	0	0	2	0	0	0	0	45
04:00	1	185	22	0	0	0	0	1	0	0	0	0	0	209
05:00	4	300	58	1	2	0	0	2	0	0	0	0	0	367
06:00	0	524	210	**9**	10	1	0	10	1	**4**	0	0	0	769
07:00	**5**	1152	**319**	6	29	0	0	**11**	3	0	0	0	0	**1525**
08:00	3	**1198**	265	2	25	0	**1**	7	**5**	0	0	0	0	1506
09:00	2	1031	213	2	14	**2**	0	2	0	0	0	0	0	1266
10:00	1	1047	214	2	**35**	0	1	4	3	0	0	0	0	1307
11:00	3	1159	215	2	31	1	0	4	0	0	0	0	0	1415
12 PM	6	**1086**	203	3	19	**1**	0	1	0	0	0	0	0	**1319**
13:00	3	1035	**217**	**7**	**21**	0	**1**	2	0	0	0	0	0	1286
14:00	1	1075	202	4	16	0	1	**4**	**2**	0	0	0	0	1305
15:00	**7**	1030	198	3	18	0	0	2	1	0	0	0	0	1259
16:00	1	1014	146	3	11	1	0	0	0	0	0	0	0	1176
17:00	0	1022	136	3	7	0	0	0	1	0	0	0	0	1169
18:00	3	807	53	2	2	0	0	0	1	0	0	0	0	868
19:00	1	566	38	2	1	0	0	0	0	0	0	0	0	608
20:00	2	454	33	2	1	0	0	0	0	0	0	0	0	492
21:00	3	290	15	3	2	0	0	0	0	0	0	0	0	313
22:00	0	186	8	0	1	0	0	0	0	0	0	0	0	195
23:00	1	96	4	0	0	0	0	1	0	0	0	0	0	102
Total	48	15372	2776	56	246	6	4	52	21	4	0	0	0	18585
Percent	0.3%	82.7%	14.9%	0.3%	1.3%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	07:00	06:00	10:00	09:00	08:00	07:00	08:00	06:00				07:00
Vol.	5	1198	319	9	35	2	1	11	5	4				1525
PM Peak	15:00	12:00	13:00	13:00	13:00	12:00	13:00	14:00	14:00					12:00
Vol.	7	1086	217	7	21	1	1	4	2					1319
Grand Total	48	15372	2776	56	246	6	4	52	21	4	0	0	0	18585
Percent	0.3%	82.7%	14.9%	0.3%	1.3%	0.0%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

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City of Indian Wells
Highway 111
B/ Miles Avenue - Washington Street
24 Hour Directional Classification Count

INW010
Site Code: 999-24117

Eastbound, Westbound

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
02/22/24	1	95	13	0	2	0	0	0	3	0	0	0	0	114
01:00	0	58	8	0	1	0	0	1	0	0	0	0	0	68
02:00	0	42	4	0	0	0	0	0	1	0	0	0	0	47
03:00	0	57	5	0	1	0	0	0	3	0	0	0	0	66
04:00	1	224	32	0	1	0	0	2	0	0	0	0	0	260
05:00	5	380	81	1	3	0	0	5	2	0	0	0	0	477
06:00	1	741	274	**11**	17	1	0	14	4	**4**	0	0	0	1067
07:00	5	1610	430	10	60	1	0	**17**	4	0	0	0	0	2137
08:00	5	1847	403	9	51	**9**	**1**	7	**8**	3	0	0	0	2343
09:00	**7**	1672	375	6	42	2	0	2	4	0	0	0	0	2110
10:00	2	1843	418	5	**66**	1	1	4	5	0	0	0	0	2345
11:00	4	**2168**	**449**	3	52	2	0	4	1	0	0	0	0	**2683**
12 PM	11	2166	432	5	**39**	**2**	0	1	1	0	0	0	0	2657
13:00	4	2215	469	**10**	33	1	**1**	3	3	0	0	0	0	2739
14:00	6	2385	**534**	8	29	1	1	**4**	**5**	0	0	0	0	2973
15:00	**13**	2447	532	9	31	1	0	3	1	0	0	0	0	**3037**
16:00	11	2394	377	8	16	1	0	0	2	0	0	0	0	2809
17:00	1	**2453**	311	5	9	0	0	0	1	0	0	0	0	2780
18:00	3	1871	120	4	5	0	0	1	1	0	0	0	0	2005
19:00	1	1282	87	5	5	1	0	0	1	0	0	0	0	1382
20:00	3	1189	97	5	4	0	0	0	0	0	0	0	0	1298
21:00	5	903	76	5	2	0	0	0	0	0	0	0	0	991
22:00	6	592	44	1	3	0	0	0	0	0	0	0	0	646
23:00	1	272	20	0	0	0	0	1	1	0	0	0	0	295
Total	96	30906	5591	110	472	23	4	69	51	7	0	0	0	37329
Percent	0.3%	82.8%	15.0%	0.3%	1.3%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	11:00	06:00	10:00	08:00	08:00	07:00	08:00	06:00				11:00
Vol.	7	2168	449	11	66	9	1	17	8	4				2683
PM Peak	15:00	17:00	14:00	13:00	12:00	12:00	13:00	14:00	14:00					15:00
Vol.	13	2453	534	10	39	2	1	4	5					3037
Grand Total	96	30906	5591	110	472	23	4	69	51	7	0	0	0	37329
Percent	0.3%	82.8%	15.0%	0.3%	1.3%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Miles Avenue
B/ Warner Trail - Washington Street
24 Hour Directional Classification Count

INW007
Site Code: 999-24117

Eastbound

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
02/22/24	0	8	1	0	0	0	0	0	0	0	0	0	0	9
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	8	2	0	1	0	0	0	0	0	0	0	0	11
06:00	0	33	9	0	2	0	0	0	0	0	0	0	0	44
07:00	**1**	102	22	0	**5**	0	0	0	1	0	0	0	0	131
08:00	0	138	38	**3**	0	0	0	**1**	2	0	0	0	0	182
09:00	0	117	**46**	1	3	0	0	1	**5**	0	0	0	0	173
10:00	0	132	44	0	2	0	0	0	0	0	0	0	0	178
11:00	0	**142**	40	0	5	0	0	0	0	0	0	0	0	**187**
12 PM	0	173	47	0	3	0	0	**4**	**1**	0	0	0	0	228
13:00	0	190	54	0	3	0	0	0	0	0	0	0	0	247
14:00	0	240	**74**	0	0	0	0	1	0	0	0	0	0	315
15:00	0	**312**	74	**2**	**4**	0	0	3	0	0	0	0	0	**395**
16:00	0	280	64	0	3	0	0	4	0	0	0	0	0	351
17:00	**1**	307	46	2	0	0	0	2	1	0	0	0	0	359
18:00	0	171	15	0	2	0	0	0	0	0	0	0	0	188
19:00	0	139	20	0	0	0	0	0	1	0	0	0	0	160
20:00	0	89	7	0	0	0	0	0	0	0	0	0	0	96
21:00	0	59	13	0	0	0	0	0	0	0	0	0	0	72
22:00	0	49	5	0	0	0	0	0	0	0	0	0	0	54
23:00	0	25	3	0	0	0	0	0	0	0	0	0	0	28
Total	2	2723	625	8	33	0	0	16	11	0	0	0	0	3418
Percent	0.1%	79.7%	18.3%	0.2%	1.0%	0.0%	0.0%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	09:00	08:00	07:00			08:00	09:00					11:00
Vol.	1	142	46	3	5			1	5					187
PM Peak	17:00	15:00	14:00	15:00	15:00			12:00	12:00					15:00
Vol.	1	312	74	2	4			4	1					395
Grand Total	2	2723	625	8	33	0	0	16	11	0	0	0	0	3418
Percent	0.1%	79.7%	18.3%	0.2%	1.0%	0.0%	0.0%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Miles Avenue
B/ Warner Trail - Washington Street
24 Hour Directional Classification Count

INW007
Site Code: 999-24117

Westbound

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
02/22/24	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	24	7	0	0	**1**	0	0	1	0	0	0	0	33
05:00	1	59	15	0	2	0	0	0	1	0	0	0	0	78
06:00	0	112	51	1	2	0	0	1	2	0	0	0	0	169
07:00	0	333	**83**	1	**6**	0	0	**4**	3	0	0	0	0	430
08:00	**3**	**350**	69	**2**	5	0	0	2	**4**	0	0	0	0	**435**
09:00	0	221	50	1	1	0	0	1	0	0	0	0	0	274
10:00	1	157	44	1	6	0	0	1	1	0	0	0	0	211
11:00	0	161	38	0	6	0	0	0	0	0	0	0	0	205
12 PM	0	168	30	0	0	0	0	0	0	0	0	0	0	198
13:00	0	188	**38**	0	**6**	0	0	**2**	0	0	0	0	0	234
14:00	**1**	196	37	0	1	0	0	0	0	0	0	0	0	235
15:00	1	**221**	32	**1**	4	0	0	1	0	0	0	0	0	**260**
16:00	1	202	30	0	2	0	0	0	0	**1**	0	0	0	236
17:00	1	205	25	0	0	0	0	0	0	0	0	0	0	231
18:00	0	120	4	0	0	0	0	0	0	0	0	0	0	124
19:00	1	59	6	0	2	0	0	0	0	0	0	0	0	68
20:00	0	51	3	0	0	0	0	0	0	0	0	0	0	54
21:00	0	36	0	0	0	0	0	0	0	0	0	0	0	36
22:00	0	19	2	0	0	0	0	0	0	0	0	0	0	21
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Total	10	2902	566	7	43	1	0	12	12	1	0	0	0	3554
Percent	0.3%	81.7%	15.9%	0.2%	1.2%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	07:00	08:00	07:00	04:00		07:00	08:00					08:00
Vol.	3	350	83	2	6	1		4	4					435
PM Peak	14:00	15:00	13:00	15:00	13:00			13:00		16:00				15:00
Vol.	1	221	38	1	6			2		1				260
Grand Total	10	2902	566	7	43	1	0	12	12	1	0	0	0	3554
Percent	0.3%	81.7%	15.9%	0.2%	1.2%	0.0%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Miles Avenue
B/ Warner Trail - Washington Street
24 Hour Directional Classification Count

INW007
Site Code: 999-24117

Eastbound, Westbound

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
02/22/24	0	11	1	0	0	0	0	0	0	0	0	0	0	12
01:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
04:00	0	27	7	0	0	**1**	0	0	1	0	0	0	0	36
05:00	1	67	17	0	3	0	0	0	1	0	0	0	0	89
06:00	0	145	60	1	4	0	0	1	2	0	0	0	0	213
07:00	1	435	105	1	**11**	0	0	**4**	4	0	0	0	0	561
08:00	**3**	**488**	**107**	**5**	5	0	0	3	**6**	0	0	0	0	**617**
09:00	0	338	96	2	4	0	0	2	5	0	0	0	0	447
10:00	1	289	88	1	8	0	0	1	1	0	0	0	0	389
11:00	0	303	78	0	11	0	0	0	0	0	0	0	0	392
12 PM	0	341	77	0	3	0	0	**4**	**1**	0	0	0	0	426
13:00	0	378	92	0	**9**	0	0	2	0	0	0	0	0	481
14:00	1	436	**111**	0	1	0	0	1	0	0	0	0	0	550
15:00	1	**533**	106	**3**	8	0	0	4	0	0	0	0	0	**655**
16:00	1	482	94	0	5	0	0	4	0	**1**	0	0	0	587
17:00	**2**	512	71	2	0	0	0	2	1	0	0	0	0	590
18:00	0	291	19	0	2	0	0	0	0	0	0	0	0	312
19:00	1	198	26	0	2	0	0	0	1	0	0	0	0	228
20:00	0	140	10	0	0	0	0	0	0	0	0	0	0	150
21:00	0	95	13	0	0	0	0	0	0	0	0	0	0	108
22:00	0	68	7	0	0	0	0	0	0	0	0	0	0	75
23:00	0	33	3	0	0	0	0	0	0	0	0	0	0	36
Total	12	5625	1191	15	76	1	0	28	23	1	0	0	0	6972
Percent	0.2%	80.7%	17.1%	0.2%	1.1%	0.0%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	08:00	07:00	04:00		07:00	08:00					08:00
Vol.	3	488	107	5	11	1		4	6					617
PM Peak	17:00	15:00	14:00	15:00	13:00			12:00	12:00	16:00				15:00
Vol.	2	533	111	3	9			4	1	1				655
Grand Total	12	5625	1191	15	76	1	0	28	23	1	0	0	0	6972
Percent	0.2%	80.7%	17.1%	0.2%	1.1%	0.0%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Portola Avenue
B/ Mockingbird Trail - South City Limits
24 Hour Directional Classification Count

INW012
Site Code: 999-24117

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
02/22/24	0	7	2	0	0	0	0	0	0	0	0	0	0	9
01:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
02:00	0	6	1	0	1	0	0	0	0	0	0	0	0	8
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	13	4	0	0	0	0	0	0	0	0	0	0	17
05:00	0	25	8	0	0	0	0	0	0	0	0	0	0	33
06:00	0	64	19	0	0	0	0	0	0	0	0	0	0	83
07:00	0	184	58	**2**	4	**2**	0	1	0	0	0	0	0	251
08:00	0	237	94	0	7	0	0	1	0	0	0	0	0	339
09:00	1	289	98	0	9	1	0	**4**	0	0	0	0	0	402
10:00	**2**	338	**143**	0	13	1	0	0	0	0	0	0	0	497
11:00	1	**424**	138	0	**17**	0	0	0	**1**	0	0	0	0	**581**
12 PM	1	448	174	0	19	1	0	2	2	0	0	0	0	647
13:00	0	461	152	1	12	0	0	2	0	0	0	0	0	628
14:00	2	**492**	190	1	**24**	3	0	**6**	**3**	0	0	0	0	**721**
15:00	0	425	**213**	**2**	20	2	0	5	1	0	0	0	0	668
16:00	**7**	367	83	0	4	**4**	0	1	0	0	0	0	0	466
17:00	0	384	55	0	5	0	0	2	0	0	0	0	0	446
18:00	1	212	12	0	1	0	0	0	0	0	0	0	0	226
19:00	0	75	13	0	2	0	0	0	0	0	0	0	0	90
20:00	0	70	13	0	5	0	0	0	0	0	0	0	0	88
21:00	0	67	8	0	0	0	0	0	0	0	0	0	0	75
22:00	0	41	1	0	0	0	0	0	0	0	0	0	0	42
23:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
Total	15	4650	1480	6	143	14	0	24	7	0	0	0	0	6339
Percent	0.2%	73.4%	23.3%	0.1%	2.3%	0.2%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	11:00	10:00	07:00	11:00	07:00		09:00	11:00					11:00
Vol.	2	424	143	2	17	2		4	1					581
PM Peak	16:00	14:00	15:00	15:00	14:00	16:00		14:00	14:00					14:00
Vol.	7	492	213	2	24	4		6	3					721
Grand Total	15	4650	1480	6	143	14	0	24	7	0	0	0	0	6339
Percent	0.2%	73.4%	23.3%	0.1%	2.3%	0.2%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Portola Avenue
B/ Mockingbird Trail - South City Limits
24 Hour Directional Classification Count

INW012
Site Code: 999-24117

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
02/22/24	0	10	0	0	0	0	0	0	0	0	0	0	0	10
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
04:00	0	59	30	0	0	0	0	0	0	0	0	0	0	89
05:00	0	41	31	0	0	0	0	0	0	0	0	0	0	72
06:00	0	109	110	0	12	**6**	**1**	1	0	0	0	0	0	239
07:00	0	201	**189**	0	**24**	4	0	0	**1**	0	0	0	0	419
08:00	1	373	176	**1**	20	2	0	1	0	0	0	0	0	**574**
09:00	**2**	296	120	0	17	1	0	1	0	0	0	0	0	437
10:00	1	361	141	0	15	0	0	0	0	0	0	0	0	518
11:00	0	**390**	131	0	15	0	1	**3**	1	0	0	0	0	541
12 PM	**3**	353	**112**	0	**12**	**2**	0	**5**	0	0	0	0	0	**487**
13:00	0	**391**	79	0	10	0	0	1	0	0	0	0	0	481
14:00	1	349	80	0	5	1	0	2	0	0	0	0	0	438
15:00	2	342	70	**1**	3	1	0	0	0	0	0	0	0	419
16:00	0	291	45	0	4	0	0	0	0	0	0	0	0	340
17:00	0	220	31	0	1	0	0	0	0	0	0	0	0	252
18:00	0	171	8	0	1	0	0	0	0	0	0	0	0	180
19:00	1	157	6	0	1	0	0	0	0	0	0	0	0	165
20:00	0	157	7	0	0	0	0	0	0	0	0	0	0	164
21:00	0	97	7	0	0	0	0	0	0	0	0	0	0	104
22:00	0	43	3	0	0	0	0	0	0	0	0	0	0	46
23:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
Total	11	4434	1379	2	140	17	2	14	2	0	0	0	0	6001
Percent	0.2%	73.9%	23.0%	0.0%	2.3%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	07:00	08:00	07:00	06:00	06:00	11:00	07:00					08:00
Vol.	2	390	189	1	24	6	1	3	1					574
PM Peak	12:00	13:00	12:00	15:00	12:00	12:00		12:00						12:00
Vol.	3	391	112	1	12	2		5						487
Grand Total	11	4434	1379	2	140	17	2	14	2	0	0	0	0	6001
Percent	0.2%	73.9%	23.0%	0.0%	2.3%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Portola Avenue
B/ Mockingbird Trail - South City Limits
24 Hour Directional Classification Count

INW012
Site Code: 999-24117

Northbound, 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
02/22/24	0	17	2	0	0	0	0	0	0	0	0	0	0	19
01:00	0	13	1	0	0	0	0	0	0	0	0	0	0	14
02:00	0	8	1	0	1	0	0	0	0	0	0	0	0	10
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
04:00	0	72	34	0	0	0	0	0	0	0	0	0	0	106
05:00	0	66	39	0	0	0	0	0	0	0	0	0	0	105
06:00	0	173	129	0	12	**6**	**1**	1	0	0	0	0	0	322
07:00	0	385	247	**2**	28	6	0	1	1	0	0	0	0	670
08:00	1	610	270	1	27	2	0	2	0	0	0	0	0	913
09:00	**3**	585	218	0	26	2	0	**5**	0	0	0	0	0	839
10:00	3	699	**284**	0	28	1	0	0	0	0	0	0	0	1015
11:00	1	**814**	269	0	**32**	0	1	3	**2**	0	0	0	0	**1122**
12 PM	4	801	**286**	0	**31**	3	0	7	2	0	0	0	0	1134
13:00	0	**852**	231	1	22	0	0	3	0	0	0	0	0	1109
14:00	3	841	270	1	29	**4**	0	**8**	**3**	0	0	0	0	**1159**
15:00	2	767	283	**3**	23	3	0	5	1	0	0	0	0	1087
16:00	**7**	658	128	0	8	4	0	1	0	0	0	0	0	806
17:00	0	604	86	0	6	0	0	2	0	0	0	0	0	698
18:00	1	383	20	0	2	0	0	0	0	0	0	0	0	406
19:00	1	232	19	0	3	0	0	0	0	0	0	0	0	255
20:00	0	227	20	0	5	0	0	0	0	0	0	0	0	252
21:00	0	164	15	0	0	0	0	0	0	0	0	0	0	179
22:00	0	84	4	0	0	0	0	0	0	0	0	0	0	88
23:00	0	24	1	0	0	0	0	0	0	0	0	0	0	25
Total	26	9084	2859	8	283	31	2	38	9	0	0	0	0	12340
Percent	0.2%	73.6%	23.2%	0.1%	2.3%	0.3%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	10:00	07:00	11:00	06:00	06:00	09:00	11:00					11:00
Vol.	3	814	284	2	32	6	1	5	2					1122
PM Peak	16:00	13:00	12:00	15:00	12:00	14:00		14:00	14:00					14:00
Vol.	7	852	286	3	31	4		8	3					1159
Grand Total	26	9084	2859	8	283	31	2	38	9	0	0	0	0	12340
Percent	0.2%	73.6%	23.2%	0.1%	2.3%	0.3%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Warner Trail
B/ Fred Waring Drive - Miles Avenue
24 Hour Directional Classification Count

INW005
Site Code: 999-24117

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
02/22/24	0	3	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	5	3	0	0	0	0	0	0	0	0	0	0	8
05:00	0	4	7	0	1	0	0	0	0	0	0	0	0	12
06:00	0	24	15	1	0	0	0	**1**	0	0	0	0	0	41
07:00	0	116	10	3	**4**	0	**1**	0	**1**	0	0	0	0	135
08:00	0	**254**	27	**4**	0	0	0	0	0	0	0	0	0	**285**
09:00	0	121	**29**	0	2	0	0	0	0	0	0	0	0	152
10:00	0	75	22	0	1	0	0	1	0	0	0	0	0	99
11:00	0	83	23	0	3	0	1	1	0	0	0	0	0	111
12 PM	0	95	21	0	3	**1**	0	1	0	0	0	0	0	121
13:00	0	84	13	0	2	0	0	1	0	0	0	0	0	100
14:00	**1**	83	27	0	1	0	0	**2**	0	0	0	0	0	114
15:00	1	**238**	**35**	**1**	**4**	0	0	0	0	0	0	0	0	**279**
16:00	0	159	31	0	4	0	0	0	0	0	0	0	0	194
17:00	0	122	15	0	1	0	0	0	0	0	0	0	0	138
18:00	0	63	9	0	0	0	0	0	0	0	0	0	0	72
19:00	0	86	3	0	0	0	0	0	0	0	0	0	0	89
20:00	0	41	4	0	0	0	0	0	0	0	0	0	0	45
21:00	0	25	1	0	0	0	0	0	0	0	0	0	0	26
22:00	0	22	1	0	0	0	0	0	0	0	0	0	0	23
23:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
Total	2	1710	297	9	26	1	2	7	1	0	0	0	0	2055
Percent	0.1%	83.2%	14.5%	0.4%	1.3%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	09:00	08:00	07:00		07:00	06:00	07:00					08:00
Vol.		254	29	4	4		1	1	1					285
PM Peak	14:00	15:00	15:00	15:00	15:00	12:00		14:00						15:00
Vol.	1	238	35	1	4	1		2						279
Grand Total	2	1710	297	9	26	1	2	7	1	0	0	0	0	2055
Percent	0.1%	83.2%	14.5%	0.4%	1.3%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Warner Trail
B/ Fred Waring Drive - Miles Avenue
24 Hour Directional Classification Count

INW005
Site Code: 999-24117

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
02/22/24	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
05:00	1	12	5	0	0	0	0	1	0	0	0	0	0	19
06:00	0	28	10	0	**2**	0	0	0	0	0	0	0	0	40
07:00	1	139	33	0	1	0	**1**	**2**	0	0	0	0	0	177
08:00	**2**	**267**	**35**	**4**	1	0	0	0	0	0	0	0	0	**309**
09:00	0	102	32	0	1	**1**	0	0	0	0	0	0	0	136
10:00	0	90	15	1	1	0	0	1	0	0	0	0	0	108
11:00	0	80	19	0	1	1	0	0	0	0	0	0	0	101
12 PM	0	88	28	0	0	0	0	**1**	0	0	0	0	0	117
13:00	0	134	24	0	**3**	0	0	0	0	0	0	0	0	161
14:00	0	163	23	1	2	0	0	0	0	0	0	0	0	189
15:00	0	**209**	**46**	**2**	1	0	0	0	0	0	0	0	0	**258**
16:00	0	179	27	0	3	0	0	0	0	0	0	0	0	209
17:00	0	200	26	0	0	0	0	1	0	0	0	0	0	227
18:00	0	89	8	0	0	0	0	0	0	0	0	0	0	97
19:00	0	49	4	0	0	0	0	0	0	0	0	0	0	53
20:00	0	32	2	0	0	0	0	0	0	0	0	0	0	34
21:00	0	15	1	0	0	0	0	0	0	0	0	0	0	16
22:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
23:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
Total	4	1898	338	8	16	2	1	6	0	0	0	0	0	2273
Percent	0.2%	83.5%	14.9%	0.4%	0.7%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	08:00	06:00	09:00	07:00	07:00						08:00
Vol.	2	267	35	4	2	1	1	2						309
PM Peak		15:00	15:00	15:00	13:00			12:00						15:00
Vol.		209	46	2	3			1						258
Grand Total	4	1898	338	8	16	2	1	6	0	0	0	0	0	2273
Percent	0.2%	83.5%	14.9%	0.4%	0.7%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	

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City of Indian Wells
Warner Trail
B/ Fred Waring Drive - Miles Avenue
24 Hour Directional Classification Count

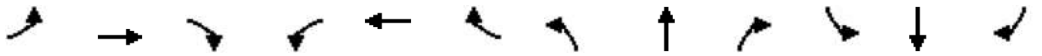
INW005
Site Code: 999-24117

Northbound, 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
02/22/24	0	4	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	8	3	0	0	0	0	0	0	0	0	0	0	11
05:00	1	16	12	0	1	0	0	1	0	0	0	0	0	31
06:00	0	52	25	1	2	0	0	1	0	0	0	0	0	81
07:00	1	255	43	3	**5**	0	**2**	**2**	**1**	0	0	0	0	312
08:00	**2**	**521**	**62**	**8**	1	0	0	0	0	0	0	0	0	**594**
09:00	0	223	61	0	3	**1**	0	0	0	0	0	0	0	288
10:00	0	165	37	1	2	0	0	2	0	0	0	0	0	207
11:00	0	163	42	0	4	1	1	1	0	0	0	0	0	212
12 PM	0	183	49	0	3	**1**	0	**2**	0	0	0	0	0	238
13:00	0	218	37	0	5	0	0	1	0	0	0	0	0	261
14:00	**1**	246	50	1	3	0	0	2	0	0	0	0	0	303
15:00	1	**447**	**81**	**3**	5	0	0	0	0	0	0	0	0	**537**
16:00	0	338	58	0	**7**	0	0	0	0	0	0	0	0	403
17:00	0	322	41	0	1	0	0	1	0	0	0	0	0	365
18:00	0	152	17	0	0	0	0	0	0	0	0	0	0	169
19:00	0	135	7	0	0	0	0	0	0	0	0	0	0	142
20:00	0	73	6	0	0	0	0	0	0	0	0	0	0	79
21:00	0	40	2	0	0	0	0	0	0	0	0	0	0	42
22:00	0	34	1	0	0	0	0	0	0	0	0	0	0	35
23:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
Total	6	3608	635	17	42	3	3	13	1	0	0	0	0	4328
Percent	0.1%	83.4%	14.7%	0.4%	1.0%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	08:00	07:00	09:00	07:00	07:00	07:00					08:00
Vol.	2	521	62	8	5	1	2	2	1					594
PM Peak	14:00	15:00	15:00	15:00	16:00	12:00		12:00						15:00
Vol.	1	447	81	3	7	1		2						537
Grand Total	6	3608	635	17	42	3	3	13	1	0	0	0	0	4328
Percent	0.1%	83.4%	14.7%	0.4%	1.0%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	

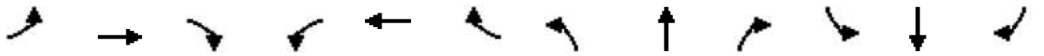
Appendix D
Existing Conditions LOS Worksheets

1: Eldorado Drive & Fred Warning Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	1010	123	106	2249	21	122	18	55	11	10	24
v/c Ratio	0.14	0.40	0.15	0.43	0.71	0.02	0.50	0.06	0.15	0.05	0.03	0.07
Control Delay (s/veh)	47.8	14.0	3.0	41.3	12.2	0.1	41.1	34.0	0.9	34.3	34.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.8	14.0	3.0	41.3	12.2	0.1	41.1	34.0	0.9	34.3	34.0	0.3
Queue Length 50th (ft)	6	105	0	38	184	0	43	6	0	4	3	0
Queue Length 95th (ft)	37	189	29	127	436	0	141	31	0	23	21	0
Internal Link Dist (ft)		742			7475			2736			746	
Turn Bay Length (ft)	225		210	290		160			125	120		105
Base Capacity (vph)	120	4397	1366	408	4634	1420	433	579	562	431	579	560
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.23	0.09	0.26	0.49	0.01	0.28	0.03	0.10	0.03	0.02	0.04

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	949	116	100	2114	20	115	17	52	10	9	23
Future Volume (veh/h)	16	949	116	100	2114	20	115	17	52	10	9	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	1010	123	106	2249	21	122	18	55	11	10	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	3241	1004	135	3531	1094	229	223	188	219	223	185
Arrive On Green	0.02	0.63	0.63	0.08	0.69	0.69	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5106	1582	1781	5106	1582	1368	1870	1577	1321	1870	1549
Grp Volume(v), veh/h	17	1010	123	106	2249	21	122	18	55	11	10	24
Grp Sat Flow(s),veh/h/ln	1781	1702	1582	1781	1702	1582	1368	1870	1577	1321	1870	1549
Q Serve(g_s), s	0.9	8.9	3.1	5.8	24.1	0.4	8.6	0.8	3.2	0.7	0.5	1.4
Cycle Q Clear(g_c), s	0.9	8.9	3.1	5.8	24.1	0.4	9.1	0.8	3.2	1.6	0.5	1.4
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	34	3241	1004	135	3531	1094	229	223	188	219	223	185
V/C Ratio(X)	0.51	0.31	0.12	0.79	0.64	0.02	0.53	0.08	0.29	0.05	0.04	0.13
Avail Cap(c_a), veh/h	90	3508	1087	305	4125	1278	382	431	364	366	431	357
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	8.3	7.2	45.1	8.4	4.8	42.7	38.9	39.9	39.6	38.7	39.1
Incr Delay (d2), s/veh	11.3	0.1	0.1	9.6	0.4	0.0	1.9	0.2	0.9	0.1	0.1	0.4
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	0.5	2.7	0.9	2.8	6.5	0.1	3.0	0.4	1.2	0.2	0.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.6	8.3	7.3	54.7	8.8	4.8	44.6	39.0	40.7	39.7	38.8	39.5
LnGrp LOS	E	A	A	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1150			2376			195			45	
Approach Delay, s/veh		9.0			10.8			43.0			39.4	
Approach LOS		A			B			D			D	

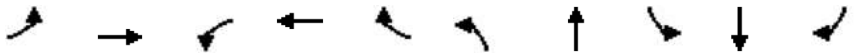
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.5	68.8		17.9	6.9	74.5		17.9				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	17.0	* 68		22.9	5.0	* 80		22.9				
Max Q Clear Time (g_c+I1), s	7.8	10.9		11.1	2.9	26.1		3.6				
Green Ext Time (p_c), s	0.1	15.3		0.4	0.0	42.6		0.1				

Intersection Summary		
HCM 7th Control Delay, s/veh		12.3
HCM 7th LOS		B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

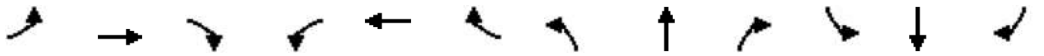
2: Warner Trail & Fred Warning Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	34	1017	65	2221	90	66	115	71	125	87
v/c Ratio	0.33	0.39	0.49	0.82	0.10	0.62	0.34	0.63	0.36	0.21
Control Delay (s/veh)	70.7	20.5	73.9	30.0	1.7	87.7	46.2	87.7	56.2	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.7	20.5	73.9	30.0	1.7	87.7	46.2	87.7	56.2	1.1
Queue Length 50th (ft)	30	184	58	556	0	58	80	63	109	0
Queue Length 95th (ft)	67	232	106	645	17	#150	140	#161	171	0
Internal Link Dist (ft)		7475		636			2261		402	
Turn Bay Length (ft)	250		235		95	190		95		35
Base Capacity (vph)	104	2617	155	2710	874	107	538	112	559	578
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	0.33	0.39	0.42	0.82	0.10	0.62	0.21	0.63	0.22	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

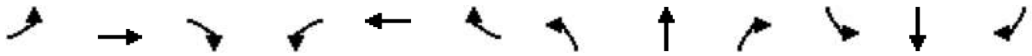


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	880	55	60	2043	83	61	66	40	65	115	80
Future Volume (veh/h)	31	880	55	60	2043	83	61	66	40	65	115	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	957	60	65	2221	90	66	72	43	71	125	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	2101	132	83	2289	709	84	330	197	84	568	470
Arrive On Green	0.03	0.43	0.43	0.05	0.45	0.45	0.05	0.30	0.30	0.05	0.30	0.30
Sat Flow, veh/h	1781	4911	307	1781	5106	1582	1781	1089	650	1781	1870	1550
Grp Volume(v), veh/h	34	663	354	65	2221	90	66	0	115	71	125	87
Grp Sat Flow(s),veh/h/ln	1781	1702	1814	1781	1702	1582	1781	0	1739	1781	1870	1550
Q Serve(g_s), s	2.7	19.4	19.4	5.1	59.5	4.7	5.1	0.0	6.9	5.5	7.0	5.8
Cycle Q Clear(g_c), s	2.7	19.4	19.4	5.1	59.5	4.7	5.1	0.0	6.9	5.5	7.0	5.8
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	47	1457	776	83	2289	709	84	0	528	84	568	470
V/C Ratio(X)	0.73	0.46	0.46	0.78	0.97	0.13	0.79	0.00	0.22	0.85	0.22	0.19
Avail Cap(c_a), veh/h	64	1457	776	149	2290	709	84	0	528	84	568	470
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)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.7	28.4	28.5	66.0	37.7	22.6	66.0	0.0	36.4	66.2	36.4	36.0
Incr Delay (d2), s/veh	22.0	0.4	0.7	14.7	12.7	0.1	37.9	0.0	0.9	51.2	0.9	0.9
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	1.5	7.7	8.3	2.6	25.9	1.7	3.2	0.0	3.1	3.7	3.4	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	89.7	28.8	29.2	80.7	50.4	22.7	103.9	0.0	37.3	117.4	37.3	36.9
LnGrp LOS	F	C	C	F	D	C	F		D	F	D	D
Approach Vol, veh/h		1051			2376			181			283	
Approach Delay, s/veh		30.9			50.1			61.6			57.2	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	49.0	11.9	67.1	12.0	49.0	9.1	70.0
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	6.6	41.1	11.7	56.1	6.6	41.1	5.0	62.8
Max Q Clear Time (g_c+I1), s	7.5	8.9	7.1	21.4	7.1	9.0	4.7	61.5
Green Ext Time (p_c), s	0.0	1.1	0.0	12.8	0.0	1.9	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	46.0
HCM 7th LOS	D

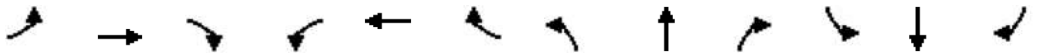
3: Cook Street & Highway 111



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	757	80	86	1403	228	49	133	63	183	224	253
v/c Ratio	0.49	0.36	0.08	0.39	0.68	0.24	0.42	0.40	0.22	0.60	0.48	0.60
Control Delay (s/veh)	68.6	16.5	1.5	69.1	23.1	11.4	72.8	62.7	1.8	69.4	60.3	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.6	16.5	1.5	69.1	23.1	11.4	72.8	62.7	1.8	69.4	60.3	12.4
Queue Length 50th (ft)	57	179	0	42	325	56	44	61	0	84	103	0
Queue Length 95th (ft)	91	267	14	m42	m346	m65	86	92	0	122	142	82
Internal Link Dist (ft)		873			1266			798			1278	
Turn Bay Length (ft)	300			225		245	70		95	80		180
Base Capacity (vph)	318	2091	951	318	2053	958	189	968	535	367	968	610
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.36	0.08	0.27	0.68	0.24	0.26	0.14	0.12	0.50	0.23	0.41

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



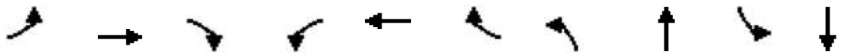
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	712	75	81	1319	214	46	125	59	172	211	238
Future Volume (veh/h)	118	712	75	81	1319	214	46	125	59	172	211	238
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	126	757	80	86	1403	94	49	133	63	183	224	82
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1055	2269	994	132	1292	563	64	328	142	236	443	196
Arrive On Green	0.31	0.64	0.64	0.04	0.36	0.36	0.04	0.09	0.09	0.07	0.12	0.12
Sat Flow, veh/h	3456	3554	1556	3456	3554	1548	1781	3554	1543	3456	3554	1574
Grp Volume(v), veh/h	126	757	80	86	1403	94	49	133	63	183	224	82
Grp Sat Flow(s),veh/h/ln	1728	1777	1556	1728	1777	1548	1781	1777	1543	1728	1777	1574
Q Serve(g_s), s	3.7	13.7	2.7	3.4	50.9	4.4	3.8	4.9	5.4	7.3	8.2	3.7
Cycle Q Clear(g_c), s	3.7	13.7	2.7	3.4	50.9	4.4	3.8	4.9	5.4	7.3	8.2	3.7
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	1055	2269	994	132	1292	563	64	328	142	236	443	196
V/C Ratio(X)	0.12	0.33	0.08	0.65	1.09	0.17	0.77	0.41	0.44	0.78	0.51	0.42
Avail Cap(c_a), veh/h	1055	2269	994	321	1292	563	191	972	422	370	972	430
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	11.6	9.6	66.4	44.6	17.8	66.9	59.9	60.1	64.2	57.2	16.9
Incr Delay (d2), s/veh	0.0	0.4	0.2	5.3	51.8	0.6	17.6	1.0	2.7	5.4	1.3	2.0
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	1.5	5.2	0.9	1.6	30.8	2.2	2.0	2.3	2.2	3.4	3.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.1	12.0	9.8	71.7	96.3	18.5	84.6	60.9	62.8	69.6	58.5	18.9
LnGrp LOS	D	B	A	E	F	B	F	E	E	E	E	B
Approach Vol, veh/h		963			1583			245			489	
Approach Delay, s/veh		14.9			90.4			66.1			56.0	
Approach LOS		B			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	48.8	57.0	14.5	19.6	10.3	95.5	10.0	24.2
Change Period (Y+Rc), s	6.1	* 6.1	5.0	6.7	5.0	6.1	5.0	6.7
Max Green Setting (Gmax), s	13.0	* 51	15.0	38.3	13.0	50.9	15.0	38.3
Max Q Clear Time (g_c+I1), s	5.7	52.9	9.3	7.4	5.4	15.7	5.8	10.2
Green Ext Time (p_c), s	0.2	0.0	0.3	1.3	0.1	9.6	0.0	2.3

Intersection Summary	
HCM 7th Control Delay, s/veh	61.3
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

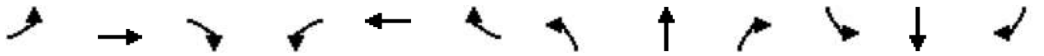


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	1230	53	166	2274	127	50	228	153	164
v/c Ratio	0.41	0.74	0.07	0.47	1.03	0.13	0.43	0.60	1.01	0.38
Control Delay (s/veh)	66.5	38.2	4.1	55.8	54.1	3.8	73.8	33.6	138.8	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.5	38.2	4.1	55.8	54.1	3.8	73.8	33.6	138.8	43.9
Queue Length 50th (ft)	40	451	0	135	~1176	8	45	46	~143	53
Queue Length 95th (ft)	60	460	9	167	802	20	67	54	#195	64
Internal Link Dist (ft)		3862			2597			391		2736
Turn Bay Length (ft)	365		150	300		150	135		110	
Base Capacity (vph)	152	1683	801	356	2209	1010	151	787	151	749
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	0.30	0.73	0.07	0.47	1.03	0.13	0.33	0.29	1.01	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	861	37	116	1592	89	35	71	89	107	79	36
Future Volume (veh/h)	32	861	37	116	1592	89	35	71	89	107	79	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	1230	53	166	2274	127	50	101	127	153	113	51
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1455	640	416	2189	961	65	189	168	153	376	160
Arrive On Green	0.03	0.41	0.41	0.23	0.62	0.62	0.04	0.11	0.11	0.09	0.16	0.16
Sat Flow, veh/h	1781	3554	1563	1781	3554	1561	1781	1777	1581	1781	2412	1027
Grp Volume(v), veh/h	46	1230	53	166	2274	127	50	101	127	153	81	83
Grp Sat Flow(s),veh/h/ln	1781	1777	1563	1781	1777	1561	1781	1777	1581	1781	1777	1661
Q Serve(g_s), s	3.6	43.8	2.1	11.0	86.2	4.8	3.9	7.5	10.9	12.0	5.7	6.2
Cycle Q Clear(g_c), s	3.6	43.8	2.1	11.0	86.2	4.8	3.9	7.5	10.9	12.0	5.7	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	60	1455	640	416	2189	961	65	189	168	153	277	259
V/C Ratio(X)	0.77	0.85	0.08	0.40	1.04	0.13	0.77	0.53	0.76	1.00	0.29	0.32
Avail Cap(c_a), veh/h	153	1627	716	416	2189	961	153	377	335	153	377	352
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	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	67.1	37.3	13.2	45.4	26.9	11.2	66.9	59.3	60.8	64.0	52.3	52.5
Incr Delay (d2), s/veh	18.8	6.2	0.3	0.1	19.3	0.0	17.5	2.9	8.3	72.3	0.8	1.0
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	1.9	19.5	1.1	4.8	38.3	1.6	2.1	3.5	4.8	8.5	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	85.9	43.5	13.5	45.4	46.2	11.3	84.4	62.2	69.1	136.3	53.1	53.5
LnGrp LOS	F	D	B	D	F	B	F	E	E	F	D	D
Approach Vol, veh/h		1329			2567			278			317	
Approach Delay, s/veh		43.8			44.4			69.3			93.3	
Approach LOS		D			D			E			F	

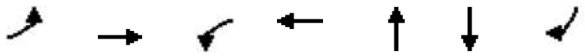
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.6	63.2	17.0	21.2	9.7	92.1	10.1	28.1
Change Period (Y+Rc), s	* 5.9	* 5.9	5.0	* 6.3	5.0	* 5.9	5.0	* 6.3
Max Green Setting (Gmax), s	* 12	* 64	12.0	* 30	12.0	* 64	12.0	* 30
Max Q Clear Time (g_c+I1), s	13.0	45.8	14.0	12.9	5.6	88.2	5.9	8.2
Green Ext Time (p_c), s	0.0	11.6	0.0	1.4	0.0	0.0	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	49.2
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	184	948	23	2042	41	59	59
v/c Ratio	0.60	0.37	0.16	1.09	0.10	0.35	0.20
Control Delay (s/veh)	42.3	7.2	40.2	72.0	24.8	40.9	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.3	7.2	40.2	72.0	24.8	40.9	2.6
Queue Length 50th (ft)	93	75	12	~690	6	30	0
Queue Length 95th (ft)	167	199	36	#878	21	67	6
Internal Link Dist (ft)		2597		3704	122	283	
Turn Bay Length (ft)	725		300				
Base Capacity (vph)	323	2576	754	2717	1034	458	617
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.37	0.03	0.75	0.04	0.13	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	874	27	22	1722	218	8	17	14	50	6	56
Future Volume (veh/h)	175	874	27	22	1722	218	8	17	14	50	6	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.97		0.95	0.97		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	184	920	28	23	1813	92	8	18	15	53	6	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	2079	63	43	1682	85	147	292	221	306	31	303
Arrive On Green	0.13	0.59	0.59	0.02	0.49	0.49	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3517	107	1781	3438	173	468	1477	1121	1166	156	1532
Grp Volume(v), veh/h	184	465	483	23	929	976	22	0	19	59	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1834	1629	0	1437	1321	0	1532
Q Serve(g_s), s	9.1	13.1	13.1	1.2	44.2	44.2	0.0	0.0	1.0	3.0	0.0	0.8
Cycle Q Clear(g_c), s	9.1	13.1	13.1	1.2	44.2	44.2	4.0	0.0	1.0	4.0	0.0	0.8
Prop In Lane	1.00		0.06	1.00		0.09	0.37		0.78	0.90		1.00
Lane Grp Cap(c), veh/h	225	1050	1092	43	870	897	376	0	284	337	0	303
V/C Ratio(X)	0.82	0.44	0.44	0.53	1.07	1.09	0.06	0.00	0.07	0.18	0.00	0.06
Avail Cap(c_a), veh/h	296	1050	1092	690	870	897	577	0	460	505	0	490
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	10.2	10.2	43.6	23.1	23.1	29.4	0.0	29.5	30.9	0.0	29.4
Incr Delay (d2), s/veh	15.7	0.5	0.5	9.8	50.4	56.8	0.1	0.0	0.1	0.3	0.0	0.1
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	4.7	4.3	4.5	0.6	28.0	30.4	0.4	0.0	0.3	1.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.1	10.7	10.7	53.3	73.5	79.8	29.5	0.0	29.6	31.2	0.0	29.5
LnGrp LOS	D	B	B	D	F	F	C		C	C		C
Approach Vol, veh/h		1132			1928			41			76	
Approach Delay, s/veh		17.8			76.5			29.5			30.8	
Approach LOS		B			E			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	59.2		23.9	16.4	50.0		23.9				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	35.0	* 44		28.9	15.0	* 44		28.9				
Max Q Clear Time (g_c+I1), s	3.2	15.1		6.0	11.1	46.2		6.0				
Green Ext Time (p_c), s	0.0	10.3		0.1	0.3	0.0		0.4				

Intersection Summary			
HCM 7th Control Delay, s/veh		53.8	
HCM 7th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

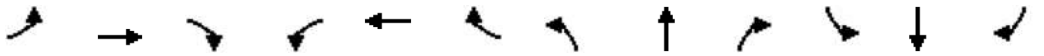
6: Miles Avenue & Highway 111



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	93	799	29	46	1776	67	25	42	11	32	313
v/c Ratio	0.45	0.39	0.03	0.28	0.94	0.31	0.08	0.12	0.05	0.11	0.67
Control Delay (s/veh)	43.6	11.9	0.1	42.7	32.3	36.4	31.7	0.6	31.3	32.0	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.6	11.9	0.1	42.7	32.3	36.4	31.7	0.6	31.3	32.0	15.5
Queue Length 50th (ft)	46	114	0	23	423	32	12	0	5	15	26
Queue Length 95th (ft)	103	222	0	62	#826	72	35	0	20	40	108
Internal Link Dist (ft)		3704			801		318			2030	
Turn Bay Length (ft)	770		300	280					135		
Base Capacity (vph)	316	2075	975	531	2320	382	521	535	385	521	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.39	0.03	0.09	0.77	0.18	0.05	0.08	0.03	0.06	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	735	27	42	1629	5	62	23	39	10	29	288
Future Volume (veh/h)	86	735	27	42	1629	5	62	23	39	10	29	288
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	799	29	46	1771	5	67	25	42	11	32	313
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	1872	823	68	1808	5	302	424	358	369	424	358
Arrive On Green	0.07	0.53	0.53	0.04	0.50	0.50	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3554	1563	1781	3635	10	1033	1870	1579	1329	1870	1579
Grp Volume(v), veh/h	93	799	29	46	865	911	67	25	42	11	32	313
Grp Sat Flow(s),veh/h/ln	1781	1777	1563	1781	1777	1868	1033	1870	1579	1329	1870	1579
Q Serve(g_s), s	4.5	12.1	0.8	2.2	42.1	42.2	4.8	0.9	1.9	0.6	1.2	16.9
Cycle Q Clear(g_c), s	4.5	12.1	0.8	2.2	42.1	42.2	6.0	0.9	1.9	1.5	1.2	16.9
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	1872	823	68	884	929	302	424	358	369	424	358
V/C Ratio(X)	0.77	0.43	0.04	0.67	0.98	0.98	0.22	0.06	0.12	0.03	0.08	0.88
Avail Cap(c_a), veh/h	297	1872	823	499	884	929	337	487	411	414	487	411
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	12.8	10.1	41.9	21.7	21.7	29.2	26.8	27.1	27.3	26.9	32.9
Incr Delay (d2), s/veh	10.0	0.3	0.0	11.0	25.2	24.7	0.4	0.1	0.1	0.1	0.1	18.9
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	2.2	4.1	0.2	1.1	20.6	21.5	1.2	0.4	0.7	0.2	0.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.5	13.0	10.1	52.9	47.0	46.4	29.6	26.8	27.3	27.4	27.0	51.8
LnGrp LOS	D	B	B	D	D	D	C	C	C	C	C	D
Approach Vol, veh/h		921			1822			134			356	
Approach Delay, s/veh		16.7			46.8			28.3			48.8	
Approach LOS		B			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	52.6		27.0	11.3	50.0		27.0				
Change Period (Y+Rc), s	5.3	6.1		7.0	5.3	6.1		7.0				
Max Green Setting (Gmax), s	24.7	43.9		23.0	14.7	43.9		23.0				
Max Q Clear Time (g_c+I1), s	4.2	14.1		8.0	6.5	44.2		18.9				
Green Ext Time (p_c), s	0.1	9.9		0.4	0.1	0.0		0.9				

Intersection Summary		
HCM 7th Control Delay, s/veh		37.7
HCM 7th LOS		D

Notes

User approved pedestrian interval to be less than phase max green.

7: Washington Street & Miles Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	24	151	110	266	239	138	1241	67	188	1189	106
v/c Ratio	0.11	0.25	0.36	0.58	0.42	0.58	0.72	0.11	0.67	0.64	0.16
Control Delay (s/veh)	54.3	24.9	52.4	43.4	7.3	55.8	33.2	0.9	57.0	30.1	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.3	24.9	52.4	43.4	7.3	55.8	33.2	0.9	57.0	30.1	4.7
Queue Length 50th (ft)	8	28	38	173	0	92	275	0	124	245	0
Queue Length 95th (ft)	24	62	74	284	66	173	375	4	#232	356	33
Internal Link Dist (ft)		4468		923			1015			760	
Turn Bay Length (ft)	225		190		140	195		320	130		205
Base Capacity (vph)	676	1135	676	613	675	348	2222	749	348	2237	761
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.13	0.16	0.43	0.35	0.40	0.56	0.09	0.54	0.53	0.14

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	86	59	106	255	229	132	1191	64	180	1141	102
Future Volume (veh/h)	23	86	59	106	255	229	132	1191	64	180	1141	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	90	61	110	266	239	138	1241	0	188	1189	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	370	231	181	381	318	173	1910		226	2063	
Arrive On Green	0.03	0.18	0.18	0.05	0.20	0.20	0.10	0.37	0.00	0.13	0.40	0.00
Sat Flow, veh/h	3456	2098	1313	3456	1870	1564	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	24	75	76	110	266	239	138	1241	0	188	1189	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1634	1728	1870	1564	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	0.6	3.3	3.6	2.8	12.0	13.0	6.9	18.2	0.0	9.3	16.4	0.0
Cycle Q Clear(g_c), s	0.6	3.3	3.6	2.8	12.0	13.0	6.9	18.2	0.0	9.3	16.4	0.0
Prop In Lane	1.00		0.80	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	313	288	181	381	318	173	1910		226	2063	
V/C Ratio(X)	0.28	0.24	0.26	0.61	0.70	0.75	0.80	0.65		0.83	0.58	
Avail Cap(c_a), veh/h	747	643	591	747	677	566	385	2451		385	2451	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.4	32.1	32.3	42.0	33.5	33.9	40.0	23.5	0.0	38.6	21.0	0.0
Incr Delay (d2), s/veh	1.7	0.7	0.9	3.3	3.8	5.8	8.1	0.7	0.0	7.6	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	0.3	1.4	1.4	1.2	5.4	5.1	3.2	6.7	0.0	4.3	5.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.1	32.8	33.2	45.3	37.3	39.7	48.1	24.2	0.0	46.2	21.5	0.0
LnGrp LOS	D	C	C	D	D	D	D	C		D	C	
Approach Vol, veh/h		175			615			1379			1377	
Approach Delay, s/veh		34.7			39.7			26.6			24.8	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	40.4	10.1	23.2	14.2	43.1	7.7	25.6
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	19.6	43.5	19.6	32.8	19.6	43.5	19.6	32.8
Max Q Clear Time (g_c+I1), s	11.3	20.2	4.8	5.6	8.9	18.4	2.6	15.0
Green Ext Time (p_c), s	0.3	13.5	0.2	1.3	0.2	13.6	0.0	3.4

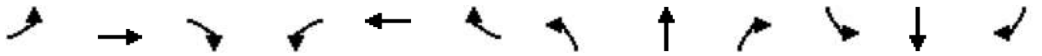
Intersection Summary	
HCM 7th Control Delay, s/veh	28.6
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

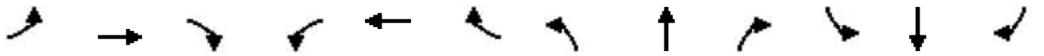
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

1: Eldorado Drive & Fred Warning Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	13	2041	113	37	1204	11	90	28	90	14	24	40
v/c Ratio	0.10	0.69	0.12	0.22	0.36	0.01	0.40	0.09	0.28	0.06	0.08	0.13
Control Delay (s/veh)	44.1	13.2	2.4	41.9	6.6	0.0	39.1	33.8	14.1	34.4	34.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.1	13.2	2.4	41.9	6.6	0.0	39.1	33.8	14.1	34.4	34.0	4.4
Queue Length 50th (ft)	6	250	1	17	67	0	41	12	6	6	10	0
Queue Length 95th (ft)	28	363	23	56	159	0	102	41	51	26	37	13
Internal Link Dist (ft)		742			7475			2736			746	
Turn Bay Length (ft)	225		210	290		160			125	120		105
Base Capacity (vph)	124	4746	1484	198	4811	1478	424	572	540	423	572	533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.43	0.08	0.19	0.25	0.01	0.21	0.05	0.17	0.03	0.04	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1898	105	34	1120	10	84	26	84	13	22	37
Future Volume (veh/h)	12	1898	105	34	1120	10	84	26	84	13	22	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	2041	113	37	1204	11	90	28	90	14	24	40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	27	3450	1070	59	3541	1098	207	202	171	198	202	171
Arrive On Green	0.02	0.68	0.68	0.03	0.69	0.69	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	5106	1584	1781	5106	1584	1338	1870	1585	1274	1870	1585
Grp Volume(v), veh/h	13	2041	113	37	1204	11	90	28	90	14	24	40
Grp Sat Flow(s),veh/h/ln	1781	1702	1584	1781	1702	1584	1338	1870	1585	1274	1870	1585
Q Serve(g_s), s	0.7	19.9	2.3	1.9	8.7	0.2	6.0	1.3	5.0	0.9	1.1	2.1
Cycle Q Clear(g_c), s	0.7	19.9	2.3	1.9	8.7	0.2	7.1	1.3	5.0	2.2	1.1	2.1
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	27	3450	1070	59	3541	1098	207	202	171	198	202	171
V/C Ratio(X)	0.48	0.59	0.11	0.63	0.34	0.01	0.43	0.14	0.52	0.07	0.12	0.23
Avail Cap(c_a), veh/h	96	4322	1341	154	4488	1392	380	443	376	363	443	376
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	8.1	5.2	44.1	5.7	4.4	40.4	37.3	38.9	38.3	37.2	37.7
Incr Delay (d2), s/veh	12.2	0.3	0.1	10.4	0.1	0.0	1.4	0.3	2.5	0.2	0.3	0.9
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	0.4	5.2	0.6	1.0	2.2	0.0	2.0	0.6	2.0	0.3	0.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.4	8.4	5.3	54.5	5.8	4.4	41.9	37.6	41.4	38.5	37.5	38.5
LnGrp LOS	E	A	A	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		2167			1252			208			78	
Approach Delay, s/veh		8.5			7.2			41.1			38.2	
Approach LOS		A			A			D			D	

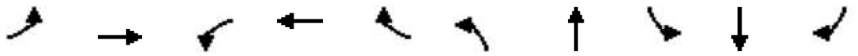
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	68.2		16.1	6.4	69.9		16.1				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	8.0	* 78		21.9	5.0	* 81		21.9				
Max Q Clear Time (g_c+I1), s	3.9	21.9		9.1	2.7	10.7		4.2				
Green Ext Time (p_c), s	0.0	40.5		0.5	0.0	18.9		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		10.5
HCM 7th LOS		B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

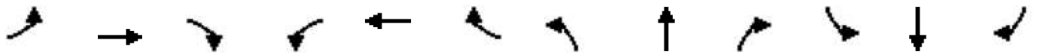
2: Warner Trail & Fred Warning Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	76	2065	33	1163	81	44	134	98	124	52
v/c Ratio	0.53	0.82	0.32	0.50	0.10	0.46	0.36	0.71	0.27	0.10
Control Delay (s/veh)	74.6	32.5	70.8	26.7	0.2	80.0	47.4	88.4	49.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.6	32.5	70.8	26.7	0.2	80.0	47.4	88.4	49.9	0.4
Queue Length 50th (ft)	68	569	29	258	0	39	95	86	97	0
Queue Length 95th (ft)	119	606	65	293	0	82	166	#193	166	0
Internal Link Dist (ft)		7475		636			2261		402	
Turn Bay Length (ft)	250		235		95	190		95		35
Base Capacity (vph)	168	2522	102	2350	814	101	556	140	632	636
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	0.45	0.82	0.32	0.49	0.10	0.44	0.24	0.70	0.20	0.08

Intersection Summary

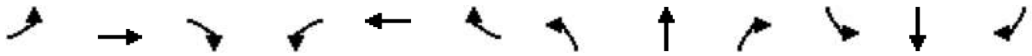
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	1776	103	30	1058	74	40	80	42	89	113	47
Future Volume (veh/h)	69	1776	103	30	1058	74	40	80	42	89	113	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	1952	113	33	1163	81	44	88	46	98	124	52
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	2069	119	46	1996	619	57	362	189	119	652	552
Arrive On Green	0.05	0.42	0.42	0.03	0.39	0.39	0.03	0.31	0.31	0.07	0.35	0.35
Sat Flow, veh/h	1781	4938	285	1781	5106	1583	1781	1156	604	1781	1870	1584
Grp Volume(v), veh/h	76	1344	721	33	1163	81	44	0	134	98	124	52
Grp Sat Flow(s),veh/h/ln	1781	1702	1819	1781	1702	1583	1781	0	1761	1781	1870	1584
Q Serve(g_s), s	5.9	53.1	53.5	2.6	25.2	4.6	3.4	0.0	7.9	7.6	6.5	3.1
Cycle Q Clear(g_c), s	5.9	53.1	53.5	2.6	25.2	4.6	3.4	0.0	7.9	7.6	6.5	3.1
Prop In Lane	1.00		0.16	1.00		1.00	1.00		0.34	1.00		1.00
Lane Grp Cap(c), veh/h	96	1426	762	46	1996	619	57	0	551	119	652	552
V/C Ratio(X)	0.79	0.94	0.95	0.72	0.58	0.13	0.78	0.00	0.24	0.82	0.19	0.09
Avail Cap(c_a), veh/h	160	1430	764	66	1996	619	99	0	551	122	652	552
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)	0.69	0.69	0.69	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.5	39.0	39.2	67.7	33.6	27.4	67.3	0.0	35.7	64.5	31.8	30.7
Incr Delay (d2), s/veh	9.7	9.6	16.2	18.7	0.6	0.2	19.8	0.0	1.0	33.5	0.6	0.3
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	2.9	22.8	25.9	1.4	10.1	1.7	1.9	0.0	3.6	4.6	3.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	75.1	48.7	55.3	86.4	34.2	27.5	87.0	0.0	36.8	98.0	32.5	31.1
LnGrp LOS	E	D	E	F	C	C	F		D	F	C	C
Approach Vol, veh/h		2141			1277			178			274	
Approach Delay, s/veh		51.8			35.1			49.2			55.6	
Approach LOS		D			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	50.3	9.0	65.9	9.9	55.3	12.9	61.9
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	9.6	41.9	5.2	58.8	7.8	43.7	12.6	51.4
Max Q Clear Time (g_c+I1), s	9.6	9.9	4.6	55.5	5.4	8.5	7.9	27.2
Green Ext Time (p_c), s	0.0	1.3	0.0	3.2	0.0	1.6	0.0	12.7

Intersection Summary	
HCM 7th Control Delay, s/veh	46.5
HCM 7th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	227	1484	74	68	1134	227	59	149	133	226	145	240
v/c Ratio	0.42	0.69	0.08	0.34	0.65	0.27	0.47	0.47	0.48	0.68	0.31	0.58
Control Delay (s/veh)	57.6	22.2	1.1	79.9	21.3	5.0	73.6	65.2	12.0	71.7	58.0	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.6	22.2	1.1	79.9	21.3	5.0	73.6	65.2	12.0	71.7	58.0	12.7
Queue Length 50th (ft)	96	478	0	34	213	15	53	69	0	103	65	0
Queue Length 95th (ft)	151	648	10	m56	255	57	99	103	47	148	100	82
Internal Link Dist (ft)		873			1266			798			1278	
Turn Bay Length (ft)	300			225		245	70		95	80		180
Base Capacity (vph)	545	2152	986	318	1741	851	189	968	542	367	968	599
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.69	0.08	0.21	0.65	0.27	0.31	0.15	0.25	0.62	0.15	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

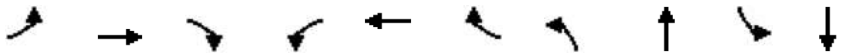
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	1395	70	64	1066	213	55	140	125	212	136	226
Future Volume (veh/h)	213	1395	70	64	1066	213	55	140	125	212	136	226
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	1484	74	68	1134	227	59	149	133	226	145	240
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	906	2096	932	115	1255	557	76	475	210	278	609	266
Arrive On Green	0.26	0.59	0.59	0.03	0.35	0.35	0.04	0.13	0.13	0.08	0.17	0.17
Sat Flow, veh/h	3456	3554	1581	3456	3554	1578	1781	3554	1567	3456	3554	1550
Grp Volume(v), veh/h	227	1484	74	68	1134	227	59	149	133	226	145	240
Grp Sat Flow(s),veh/h/ln	1728	1777	1581	1728	1777	1578	1781	1777	1567	1728	1777	1550
Q Serve(g_s), s	7.3	41.2	2.8	2.7	42.4	11.5	4.6	5.3	11.2	9.0	4.9	12.2
Cycle Q Clear(g_c), s	7.3	41.2	2.8	2.7	42.4	11.5	4.6	5.3	11.2	9.0	4.9	12.2
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	906	2096	932	115	1255	557	76	475	210	278	609	266
V/C Ratio(X)	0.25	0.71	0.08	0.59	0.90	0.41	0.78	0.31	0.63	0.81	0.24	0.90
Avail Cap(c_a), veh/h	906	2096	932	321	1292	574	191	972	429	370	972	424
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	20.2	12.4	66.7	43.0	19.4	66.3	54.8	57.4	63.3	50.1	18.7
Incr Delay (d2), s/veh	0.1	2.1	0.2	4.8	10.8	2.2	15.4	0.5	3.9	9.8	0.3	17.8
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	3.1	16.4	1.0	1.3	19.9	4.5	2.4	2.4	4.6	4.3	2.2	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.9	22.3	12.5	71.6	53.8	21.6	81.7	55.3	61.3	73.1	50.4	36.5
LnGrp LOS	D	C	B	E	D	C	F	E	E	E	D	D
Approach Vol, veh/h		1785			1429			341			611	
Approach Delay, s/veh		24.2			49.5			62.2			53.3	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.8	55.5	16.3	25.4	9.6	88.7	11.0	30.7
Change Period (Y+Rc), s	6.1	* 6.1	5.0	6.7	5.0	6.1	5.0	6.7
Max Green Setting (Gmax), s	13.0	* 51	15.0	38.3	13.0	50.9	15.0	38.3
Max Q Clear Time (g_c+I1), s	9.3	44.4	11.0	13.2	4.7	43.2	6.6	14.2
Green Ext Time (p_c), s	0.2	5.0	0.3	1.7	0.1	6.5	0.1	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	40.3
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	1691	21	49	1330	87	40	170	105	76
v/c Ratio	0.37	0.77	0.02	0.41	0.60	0.09	0.37	0.49	0.65	0.18
Control Delay (s/veh)	55.8	39.8	0.0	71.7	18.0	1.7	71.9	25.5	79.9	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.8	39.8	0.0	71.7	18.0	1.7	71.9	25.5	79.9	39.1
Queue Length 50th (ft)	36	855	0	44	379	0	36	23	93	21
Queue Length 95th (ft)	m49	932	m0	85	486	17	75	61	#170	48
Internal Link Dist (ft)		3862			2597			391		2736
Turn Bay Length (ft)	365		150	300		150	135		110	
Base Capacity (vph)	151	2205	1028	189	2228	1019	151	765	169	732
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	0.26	0.77	0.02	0.26	0.60	0.09	0.26	0.22	0.62	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	1657	21	48	1303	85	39	49	118	103	48	26
Future Volume (veh/h)	39	1657	21	48	1303	85	39	49	118	103	48	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	1691	21	49	1330	87	40	50	120	105	49	27
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	52	1551	690	412	2293	1021	52	170	152	127	315	160
Arrive On Green	0.03	0.44	0.44	0.23	0.65	0.65	0.03	0.10	0.10	0.07	0.14	0.14
Sat Flow, veh/h	1781	3554	1582	1781	3554	1583	1781	1777	1585	1781	2277	1161
Grp Volume(v), veh/h	40	1691	21	49	1330	87	40	50	120	105	37	39
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1583	1781	1777	1585	1781	1777	1661
Q Serve(g_s), s	3.1	61.1	0.8	3.0	29.7	2.9	3.1	3.7	10.4	8.1	2.6	2.9
Cycle Q Clear(g_c), s	3.1	61.1	0.8	3.0	29.7	2.9	3.1	3.7	10.4	8.1	2.6	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	52	1551	690	412	2293	1021	52	170	152	127	245	230
V/C Ratio(X)	0.77	1.09	0.03	0.12	0.58	0.09	0.77	0.29	0.79	0.82	0.15	0.17
Avail Cap(c_a), veh/h	153	1551	690	412	2293	1021	153	377	336	153	377	352
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	1.00	1.00	0.41	0.41	0.41	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	39.5	12.2	42.5	14.1	9.3	67.5	58.9	61.9	64.1	53.1	53.2
Incr Delay (d2), s/veh	21.3	51.7	0.1	0.1	0.4	0.1	21.3	1.2	10.9	25.6	0.4	0.5
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	1.7	37.3	0.4	1.4	11.7	1.0	1.7	1.7	4.7	4.6	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	88.8	91.1	12.3	42.6	14.5	9.4	88.8	60.1	72.8	89.7	53.5	53.7
LnGrp LOS	F	F	B	D	B	A	F	E	E	F	D	D
Approach Vol, veh/h		1752			1466			210			181	
Approach Delay, s/veh		90.1			15.2			72.8			74.6	
Approach LOS		F			B			E			E	

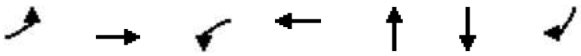
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.3	67.0	15.0	19.7	9.1	96.2	9.1	25.6
Change Period (Y+Rc), s	* 5.9	* 5.9	5.0	* 6.3	5.0	* 5.9	5.0	* 6.3
Max Green Setting (Gmax), s	* 15	* 61	12.0	* 30	12.0	* 64	12.0	* 30
Max Q Clear Time (g_c+I1), s	5.0	63.1	10.1	12.4	5.1	31.7	5.1	4.9
Green Ext Time (p_c), s	0.0	0.0	0.0	1.0	0.0	19.8	0.0	0.5

Intersection Summary	
HCM 7th Control Delay, s/veh	57.9
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

5: Indian Wells Lane & Highway 111



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	97	1915	21	1486	65	191	206
v/c Ratio	0.43	0.91	0.16	0.91	0.11	0.70	0.41
Control Delay (s/veh)	46.0	26.9	46.6	33.5	18.8	47.8	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.0	26.9	46.6	33.5	18.8	47.8	7.1
Queue Length 50th (ft)	54	396	12	403	8	106	0
Queue Length 95th (ft)	113	#929	38	#678	26	185	54
Internal Link Dist (ft)		2597		3704	122	283	
Turn Bay Length (ft)	725		300				
Base Capacity (vph)	280	2108	691	2543	850	405	634
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.91	0.03	0.58	0.08	0.47	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	1690	33	19	1260	77	25	7	26	160	12	185
Future Volume (veh/h)	87	1690	33	19	1260	77	25	7	26	160	12	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		0.97	0.98		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	1878	37	21	1400	86	28	8	29	178	13	206
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	1906	37	41	1597	98	201	79	285	371	21	384
Arrive On Green	0.08	0.53	0.53	0.02	0.47	0.47	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1781	3564	70	1781	3396	208	478	316	1145	1173	86	1545
Grp Volume(v), veh/h	97	933	982	21	730	756	28	0	37	191	0	206
Grp Sat Flow(s),veh/h/ln	1781	1777	1857	1781	1777	1827	478	0	1461	1258	0	1545
Q Serve(g_s), s	4.6	44.9	45.6	1.0	32.3	32.6	2.0	0.0	1.7	10.9	0.0	10.1
Cycle Q Clear(g_c), s	4.6	44.9	45.6	1.0	32.3	32.6	14.6	0.0	1.7	12.6	0.0	10.1
Prop In Lane	1.00		0.04	1.00		0.11	1.00		0.78	0.93		1.00
Lane Grp Cap(c), veh/h	139	951	993	41	836	859	201	0	363	392	0	384
V/C Ratio(X)	0.70	0.98	0.99	0.52	0.87	0.88	0.14	0.00	0.10	0.49	0.00	0.54
Avail Cap(c_a), veh/h	290	951	993	714	916	942	296	0	484	505	0	511
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	19.9	20.0	42.2	20.8	20.9	35.9	0.0	25.3	30.2	0.0	28.4
Incr Delay (d2), s/veh	9.8	24.8	25.7	9.7	8.8	9.0	0.3	0.0	0.1	1.2	0.0	1.5
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	2.3	21.7	23.1	0.5	13.5	14.1	0.6	0.0	0.6	3.6	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.0	44.6	45.7	51.9	29.6	29.9	36.3	0.0	25.4	31.3	0.0	29.9
LnGrp LOS	D	D	D	D	C	C	D		C	C		C
Approach Vol, veh/h		2012			1507			65			397	
Approach Delay, s/veh		45.4			30.1			30.1			30.6	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	52.5		27.8	12.6	46.9		27.8				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	* 5.8	* 5.8		6.1				
Max Green Setting (Gmax), s	35.0	* 44		28.9	* 14	* 45		28.9				
Max Q Clear Time (g_c+I1), s	3.0	47.6		16.6	6.6	34.6		14.6				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.2	6.4		2.0				

Intersection Summary												
HCM 7th Control Delay, s/veh			37.9									
HCM 7th LOS			D									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	210	1774	47	54	1220	47	35	68	12	24	155
v/c Ratio	0.65	0.85	0.05	0.30	0.77	0.25	0.14	0.21	0.07	0.10	0.45
Control Delay (s/veh)	42.7	20.2	0.1	39.1	22.1	36.7	33.9	1.4	33.5	33.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.7	20.2	0.1	39.1	22.1	36.7	33.9	1.4	33.5	33.5	10.7
Queue Length 50th (ft)	99	395	0	26	252	22	16	0	5	11	0
Queue Length 95th (ft)	#214	#654	0	64	346	57	45	1	22	35	54
Internal Link Dist (ft)		3704			801		318			2030	
Turn Bay Length (ft)	770		300	280					135		
Base Capacity (vph)	335	2095	983	563	2456	409	552	565	405	552	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.85	0.05	0.10	0.50	0.11	0.06	0.12	0.03	0.04	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	1632	43	50	1107	16	43	32	63	11	22	143
Future Volume (veh/h)	193	1632	43	50	1107	16	43	32	63	11	22	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	210	1774	47	54	1203	17	47	35	68	12	24	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	253	2041	898	80	1712	24	244	250	212	248	250	212
Arrive On Green	0.14	0.57	0.57	0.05	0.48	0.48	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3554	1564	1781	3587	51	1205	1870	1585	1291	1870	1585
Grp Volume(v), veh/h	210	1774	47	54	596	624	47	35	68	12	24	155
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1781	1777	1861	1205	1870	1585	1291	1870	1585
Q Serve(g_s), s	8.6	31.7	1.0	2.2	19.7	19.7	2.7	1.2	2.9	0.6	0.8	7.0
Cycle Q Clear(g_c), s	8.6	31.7	1.0	2.2	19.7	19.7	3.5	1.2	2.9	1.9	0.8	7.0
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	253	2041	898	80	848	888	244	250	212	248	250	212
V/C Ratio(X)	0.83	0.87	0.05	0.67	0.70	0.70	0.19	0.14	0.32	0.05	0.10	0.73
Avail Cap(c_a), veh/h	351	2090	920	590	1045	1095	454	576	488	473	576	488
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	13.5	7.0	35.1	15.3	15.3	29.9	28.5	29.2	29.3	28.4	31.0
Incr Delay (d2), s/veh	11.1	4.5	0.0	9.3	2.4	2.3	0.4	0.3	0.9	0.1	0.3	8.7
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	4.1	10.2	0.3	1.1	6.9	7.2	0.8	0.6	1.1	0.2	0.4	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.2	17.9	7.0	44.4	17.7	17.6	30.3	28.8	30.1	29.5	28.7	39.7
LnGrp LOS	D	B	A	D	B	B	C	C	C	C	C	D
Approach Vol, veh/h		2031			1274			150			191	
Approach Delay, s/veh		20.2			18.8			29.9			37.7	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	49.0		17.0	15.9	41.7		17.0				
Change Period (Y+Rc), s	5.3	6.1		7.0	5.3	6.1		7.0				
Max Green Setting (Gmax), s	24.7	43.9		23.0	14.7	43.9		23.0				
Max Q Clear Time (g_c+I1), s	4.2	33.7		5.5	10.6	21.7		9.0				
Green Ext Time (p_c), s	0.1	9.2		0.5	0.2	12.8		0.9				

Intersection Summary			
HCM 7th Control Delay, s/veh		21.0	
HCM 7th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

7: Washington Street & Miles Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	52	317	110	138	145	114	1192	117	208	1626	33
v/c Ratio	0.23	0.59	0.38	0.40	0.36	0.55	0.64	0.18	0.71	0.76	0.05
Control Delay (s/veh)	51.6	40.0	51.3	43.6	9.3	55.8	30.2	5.3	56.9	30.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.6	40.0	51.3	43.6	9.3	55.8	30.2	5.3	56.9	30.3	0.1
Queue Length 50th (ft)	17	87	36	84	0	73	248	0	130	338	0
Queue Length 95th (ft)	40	145	71	157	56	141	328	39	#255	477	0
Internal Link Dist (ft)		4468		923			1015			760	
Turn Bay Length (ft)	225		190		140	195		320	130		205
Base Capacity (vph)	640	1084	640	582	583	330	2106	711	330	2128	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.29	0.17	0.24	0.25	0.35	0.57	0.16	0.63	0.76	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	205	99	106	132	139	109	1144	112	200	1561	32
Future Volume (veh/h)	50	205	99	106	132	139	109	1144	112	200	1561	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	214	103	110	138	145	114	1192	0	208	1626	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	382	176	180	328	274	146	1931		247	2220	
Arrive On Green	0.04	0.16	0.16	0.05	0.18	0.18	0.08	0.38	0.00	0.14	0.43	0.00
Sat Flow, veh/h	3456	2338	1077	3456	1870	1561	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	52	160	157	110	138	145	114	1192	0	208	1626	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1638	1728	1870	1561	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	1.3	7.6	8.1	2.8	6.0	7.7	5.7	17.3	0.0	10.4	24.2	0.0
Cycle Q Clear(g_c), s	1.3	7.6	8.1	2.8	6.0	7.7	5.7	17.3	0.0	10.4	24.2	0.0
Prop In Lane	1.00		0.66	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	139	290	267	180	328	274	146	1931		247	2220	
V/C Ratio(X)	0.38	0.55	0.59	0.61	0.42	0.53	0.78	0.62		0.84	0.73	
Avail Cap(c_a), veh/h	741	637	587	741	671	560	382	2429		382	2429	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.8	35.2	35.4	42.4	33.6	34.3	41.2	23.1	0.0	38.4	21.4	0.0
Incr Delay (d2), s/veh	1.7	3.0	3.8	3.3	1.4	2.6	8.8	0.6	0.0	9.9	1.3	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	0.6	3.3	3.3	1.2	2.7	2.9	2.7	6.3	0.0	4.9	8.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.5	38.2	39.2	45.7	35.0	36.9	50.0	23.7	0.0	48.3	22.8	0.0
LnGrp LOS	D	D	D	D	C	D	D	C		D	C	
Approach Vol, veh/h		369			393			1306			1834	
Approach Delay, s/veh		39.5			38.7			26.0			25.7	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	41.1	10.2	22.1	12.9	46.3	9.1	23.2
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	19.6	43.5	19.6	32.8	19.6	43.5	19.6	32.8
Max Q Clear Time (g_c+I1), s	12.4	19.3	4.8	10.1	7.7	26.2	3.3	9.7
Green Ext Time (p_c), s	0.3	13.3	0.2	2.9	0.2	13.6	0.1	1.9

Intersection Summary	
HCM 7th Control Delay, s/veh	28.4
HCM 7th LOS	C

Notes

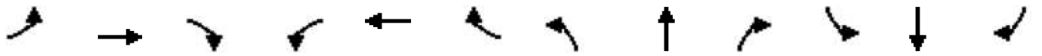
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Appendix E

Future Conditions LOS Worksheets

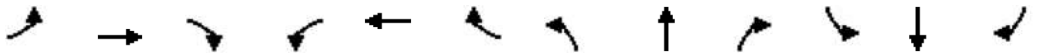
1: Eldorado Drive & Fred Warning Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	1104	143	119	2324	22	196	29	90	13	12	30
v/c Ratio	0.16	0.49	0.19	0.49	0.75	0.02	0.67	0.07	0.22	0.05	0.03	0.07
Control Delay (s/veh)	53.2	17.4	3.1	47.8	14.8	0.0	48.7	34.8	6.1	35.8	35.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.2	17.4	3.1	47.8	14.8	0.0	48.7	34.8	6.1	35.8	35.4	0.3
Queue Length 50th (ft)	9	145	0	55	264	0	87	11	0	5	5	0
Queue Length 95th (ft)	39	217	31	148	479	0	#251	46	30	27	25	0
Internal Link Dist (ft)		742			7475			2736			746	
Turn Bay Length (ft)	225		210	290		160			125	120		105
Base Capacity (vph)	111	4123	1292	378	4482	1375	400	536	529	395	536	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.27	0.11	0.31	0.52	0.02	0.49	0.05	0.17	0.03	0.02	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1104	143	119	2324	22	196	29	90	13	12	30
Future Volume (veh/h)	18	1104	143	119	2324	22	196	29	90	13	12	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1104	143	119	2324	22	196	29	90	13	12	30
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	3036	941	148	3362	1042	288	315	266	263	315	262
Arrive On Green	0.02	0.59	0.59	0.08	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	5106	1582	1781	5106	1582	1360	1870	1579	1269	1870	1554
Grp Volume(v), veh/h	18	1104	143	119	2324	22	196	29	90	13	12	30
Grp Sat Flow(s),veh/h/ln	1781	1702	1582	1781	1702	1582	1360	1870	1579	1269	1870	1554
Q Serve(g_s), s	1.1	12.3	4.4	7.2	31.4	0.5	15.5	1.4	5.5	1.0	0.6	1.8
Cycle Q Clear(g_c), s	1.1	12.3	4.4	7.2	31.4	0.5	16.1	1.4	5.5	2.4	0.6	1.8
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	34	3036	941	148	3362	1042	288	315	266	263	315	262
V/C Ratio(X)	0.53	0.36	0.15	0.81	0.69	0.02	0.68	0.09	0.34	0.05	0.04	0.11
Avail Cap(c_a), veh/h	81	3169	982	276	3727	1155	342	390	329	313	390	324
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	11.5	9.9	49.5	11.8	6.5	44.9	38.6	40.3	39.6	38.2	38.7
Incr Delay (d2), s/veh	11.9	0.1	0.1	9.8	0.6	0.0	4.3	0.1	0.7	0.1	0.1	0.2
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	0.6	4.1	1.4	3.5	9.6	0.2	5.5	0.7	2.2	0.3	0.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	65.3	11.6	10.0	59.3	12.4	6.5	49.3	38.7	41.0	39.7	38.3	39.0
LnGrp LOS	E	B	B	E	B	A	D	D	D	D	D	D
Approach Vol, veh/h		1265			2465			315			55	
Approach Delay, s/veh		12.2			14.6			45.9			39.0	
Approach LOS		B			B			D			D	

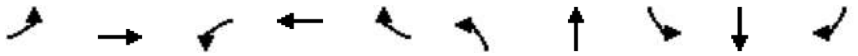
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	71.1		24.6	7.1	78.1		24.6				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	17.0	* 68		22.9	5.0	* 80		22.9				
Max Q Clear Time (g_c+I1), s	9.2	14.3		18.1	3.1	33.4		4.4				
Green Ext Time (p_c), s	0.1	17.3		0.5	0.0	39.0		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		16.6
HCM 7th LOS		B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

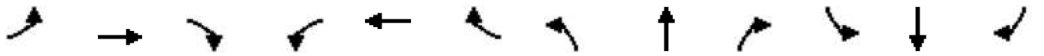
2: Warner Trail & Fred Warning Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	1074	68	2043	110	91	177	71	149	92
v/c Ratio	0.40	0.45	0.50	0.83	0.14	0.69	0.43	0.62	0.38	0.20
Control Delay (s/veh)	71.4	24.6	74.1	34.4	3.5	88.8	48.6	86.7	53.4	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.4	24.6	74.1	34.4	3.5	88.8	48.6	86.7	53.4	1.0
Queue Length 50th (ft)	43	218	61	543	0	80	136	63	127	0
Queue Length 95th (ft)	85	276	109	643	32	#176	210	#136	193	0
Internal Link Dist (ft)		7475		636			2261		402	
Turn Bay Length (ft)	250		235		95	190		95		35
Base Capacity (vph)	120	2409	159	2468	806	135	570	118	576	590
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	0.40	0.45	0.43	0.83	0.14	0.67	0.31	0.60	0.26	0.16

Intersection Summary

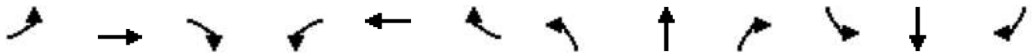
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1001	73	68	2043	110	91	120	57	71	149	92
Future Volume (veh/h)	48	1001	73	68	2043	110	91	120	57	71	149	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	1001	73	68	2043	110	91	120	57	71	149	92
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1968	143	87	2141	663	112	382	181	90	576	478
Arrive On Green	0.03	0.41	0.41	0.05	0.42	0.42	0.06	0.32	0.32	0.05	0.31	0.31
Sat Flow, veh/h	1781	4856	354	1781	5106	1581	1781	1191	566	1781	1870	1550
Grp Volume(v), veh/h	48	701	373	68	2043	110	91	0	177	71	149	92
Grp Sat Flow(s),veh/h/ln	1781	1702	1806	1781	1702	1581	1781	0	1756	1781	1870	1550
Q Serve(g_s), s	3.7	21.6	21.7	5.3	54.2	6.1	7.1	0.0	10.7	5.5	8.4	6.1
Cycle Q Clear(g_c), s	3.7	21.6	21.7	5.3	54.2	6.1	7.1	0.0	10.7	5.5	8.4	6.1
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	62	1380	732	87	2141	663	112	0	563	90	576	478
V/C Ratio(X)	0.78	0.51	0.51	0.79	0.95	0.17	0.81	0.00	0.31	0.79	0.26	0.19
Avail Cap(c_a), veh/h	71	1380	732	151	2145	664	122	0	563	111	576	478
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)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	31.2	31.2	65.9	39.4	25.4	64.8	0.0	35.9	65.7	36.4	35.6
Incr Delay (d2), s/veh	32.9	0.5	0.9	14.3	10.8	0.2	30.6	0.0	1.5	26.0	1.1	0.9
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	2.2	8.6	9.3	2.7	23.5	2.3	4.1	0.0	4.8	3.1	4.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	99.9	31.7	32.1	80.2	50.2	25.6	95.4	0.0	37.4	91.8	37.5	36.5
LnGrp LOS	F	C	C	F	D	C	F		D	F	D	D
Approach Vol, veh/h		1122			2221			268			312	
Approach Delay, s/veh		34.7			49.9			57.1			49.6	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	51.4	12.2	63.9	14.2	49.6	10.3	65.9
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	8.7	42.4	11.9	52.5	9.6	41.5	5.6	58.8
Max Q Clear Time (g_c+I1), s	7.5	12.7	7.3	23.7	9.1	10.4	5.7	56.2
Green Ext Time (p_c), s	0.0	1.8	0.0	12.6	0.0	2.2	0.0	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	46.0
HCM 7th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	118	851	115	141	1643	256	57	148	82	200	315	239
v/c Ratio	0.64	0.44	0.13	0.50	0.80	0.27	0.70	0.32	0.24	0.95	0.55	0.62
Control Delay (s/veh)	76.5	19.2	3.4	63.0	26.3	6.5	101.8	51.9	1.6	110.2	53.7	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.5	19.2	3.4	63.0	26.3	6.5	101.8	51.9	1.6	110.2	53.7	24.2
Queue Length 50th (ft)	51	214	0	59	545	36	48	60	0	88	133	60
Queue Length 95th (ft)	#89	313	33	92	738	92	#121	89	0	#166	172	144
Internal Link Dist (ft)		873			1266			798			1278	
Turn Bay Length (ft)	300			225		245	70		95	80		180
Base Capacity (vph)	184	1948	898	297	2047	965	81	980	547	211	1034	569
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.44	0.13	0.47	0.80	0.27	0.70	0.15	0.15	0.95	0.30	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

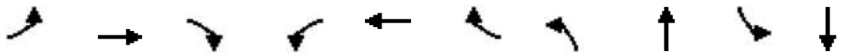
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	851	115	141	1643	256	57	148	82	200	315	239
Future Volume (veh/h)	118	851	115	141	1643	256	57	148	82	200	315	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	851	115	141	1643	256	57	148	82	200	315	239
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	627	2012	881	193	1536	670	73	501	219	213	573	254
Arrive On Green	0.18	0.57	0.57	0.06	0.43	0.43	0.04	0.14	0.14	0.06	0.16	0.16
Sat Flow, veh/h	3456	3554	1555	3456	3554	1551	1781	3554	1551	3456	3554	1576
Grp Volume(v), veh/h	118	851	115	141	1643	256	57	148	82	200	315	239
Grp Sat Flow(s),veh/h/ln	1728	1777	1555	1728	1777	1551	1781	1777	1551	1728	1777	1576
Q Serve(g_s), s	3.8	17.8	4.5	5.2	56.2	10.8	4.1	4.9	6.2	7.5	10.6	13.0
Cycle Q Clear(g_c), s	3.8	17.8	4.5	5.2	56.2	10.8	4.1	4.9	6.2	7.5	10.6	13.0
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	627	2012	881	193	1536	670	73	501	219	213	573	254
V/C Ratio(X)	0.19	0.42	0.13	0.73	1.07	0.38	0.78	0.30	0.38	0.94	0.55	0.94
Avail Cap(c_a), veh/h	627	2012	881	266	1536	670	82	984	430	213	1039	461
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	16.1	13.2	60.4	36.9	13.8	61.7	50.1	50.7	60.8	50.2	23.9
Incr Delay (d2), s/veh	0.1	0.7	0.3	6.3	44.1	1.6	33.7	0.4	1.3	45.1	1.2	20.9
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	1.6	7.0	1.6	2.4	32.3	3.9	2.5	2.2	2.5	4.6	4.7	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.2	16.7	13.5	66.7	81.0	15.4	95.4	50.5	52.0	105.9	51.3	44.8
LnGrp LOS	D	B	B	E	F	B	F	D	D	F	D	D
Approach Vol, veh/h		1084			2040			287			754	
Approach Delay, s/veh		19.5			71.7			59.8			63.7	
Approach LOS		B			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.7	62.3	13.0	25.0	12.3	79.7	10.3	27.7
Change Period (Y+Rc), s	6.1	* 6.1	5.0	6.7	5.0	6.1	5.0	6.7
Max Green Setting (Gmax), s	7.0	* 56	8.0	36.0	10.0	53.2	6.0	38.0
Max Q Clear Time (g_c+I1), s	5.8	58.2	9.5	8.2	7.2	19.8	6.1	15.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.5	0.1	11.2	0.0	4.0

Intersection Summary	
HCM 7th Control Delay, s/veh	55.9
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

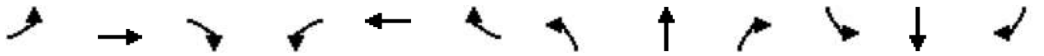


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	1206	46	147	2323	174	46	241	145	145
v/c Ratio	0.41	0.74	0.06	0.35	1.07	0.18	0.51	0.63	1.33	0.35
Control Delay (s/veh)	70.7	35.2	0.2	50.2	69.2	6.0	86.1	41.0	247.6	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.7	35.2	0.2	50.2	69.2	6.0	86.1	41.0	247.6	42.0
Queue Length 50th (ft)	57	480	0	116	~1267	27	43	62	~176	45
Queue Length 95th (ft)	105	546	0	195	#1475	66	88	105	#323	80
Internal Link Dist (ft)		3862			2597			391		2736
Turn Bay Length (ft)	365		150	300		150	135		110	
Base Capacity (vph)	152	1656	788	424	2171	994	97	748	109	729
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	0.41	0.73	0.06	0.35	1.07	0.18	0.47	0.32	1.33	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	1206	46	147	2323	174	46	128	113	145	95	50
Future Volume (veh/h)	62	1206	46	147	2323	174	46	128	113	145	95	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	1206	46	147	2323	174	46	128	113	145	95	50
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1436	632	488	2309	1014	59	187	152	111	297	145
Arrive On Green	0.03	0.40	0.40	0.27	0.65	0.65	0.03	0.10	0.10	0.06	0.13	0.13
Sat Flow, veh/h	1781	3554	1563	1781	3554	1561	1781	1860	1510	1781	2293	1123
Grp Volume(v), veh/h	62	1206	46	147	2323	174	46	122	119	145	72	73
Grp Sat Flow(s),veh/h/ln	1781	1777	1563	1781	1777	1561	1781	1777	1593	1781	1777	1640
Q Serve(g_s), s	5.0	44.4	2.0	9.5	94.2	6.4	3.7	9.6	10.5	9.0	5.3	5.9
Cycle Q Clear(g_c), s	5.0	44.4	2.0	9.5	94.2	6.4	3.7	9.6	10.5	9.0	5.3	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.95	1.00		0.69
Lane Grp Cap(c), veh/h	61	1436	632	488	2309	1014	59	179	160	111	230	212
V/C Ratio(X)	1.01	0.84	0.07	0.30	1.01	0.17	0.78	0.68	0.74	1.31	0.31	0.34
Avail Cap(c_a), veh/h	61	1637	720	488	2309	1014	98	355	319	111	368	339
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	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	70.0	39.0	15.7	41.7	25.4	10.0	69.5	63.0	63.4	68.0	57.3	57.5
Incr Delay (d2), s/veh	117.5	6.1	0.2	0.0	7.2	0.0	19.0	5.6	8.2	189.0	1.1	1.3
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	4.3	19.9	1.0	4.1	37.1	2.2	2.0	4.6	4.6	9.9	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	187.5	45.0	15.9	41.7	32.5	10.0	88.6	68.6	71.6	257.0	58.3	58.8
LnGrp LOS	F	D	B	D	F	B	F	E	E	F	E	E
Approach Vol, veh/h		1314			2644			287			290	
Approach Delay, s/veh		50.7			31.6			73.0			157.8	
Approach LOS		D			C			E			F	

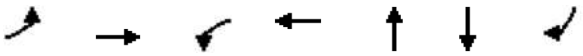
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.6	64.5	14.0	20.9	10.0	100.1	9.8	25.1
Change Period (Y+Rc), s	* 5.9	* 5.9	5.0	* 6.3	5.0	* 5.9	5.0	* 6.3
Max Green Setting (Gmax), s	* 18	* 67	9.0	* 29	5.0	* 80	8.0	* 30
Max Q Clear Time (g_c+I1), s	11.5	46.4	11.0	12.5	7.0	96.2	5.7	7.9
Green Ext Time (p_c), s	0.2	12.2	0.0	1.4	0.0	0.0	0.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	47.8
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

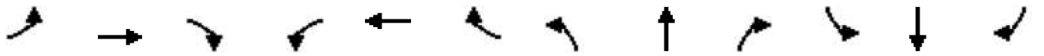


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	312	1218	22	2993	41	81	88
v/c Ratio	0.85	0.46	0.28	1.56	0.12	0.57	0.34
Control Delay (s/veh)	71.5	8.0	70.5	281.8	38.0	70.7	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.5	8.0	70.5	281.8	38.0	70.7	12.1
Queue Length 50th (ft)	253	210	18	~1891	11	66	0
Queue Length 95th (ft)	#431	301	50	#2143	29	121	43
Internal Link Dist (ft)		2597		3704	122	283	
Turn Bay Length (ft)	725		300				
Base Capacity (vph)	380	2635	82	1914	674	287	420
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.46	0.27	1.56	0.06	0.28	0.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	1191	27	22	2587	406	8	19	14	75	6	88
Future Volume (veh/h)	312	1191	27	22	2587	406	8	19	14	75	6	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.97		0.95	0.96		0.96
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	1191	27	22	2587	216	8	19	14	75	6	88
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	2473	56	37	1750	144	98	205	148	232	17	239
Arrive On Green	0.19	0.70	0.70	0.02	0.53	0.53	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3550	80	1781	3317	272	381	1302	938	1151	106	1519
Grp Volume(v), veh/h	312	596	622	22	1366	1437	19	0	22	81	0	88
Grp Sat Flow(s),veh/h/ln	1781	1777	1853	1781	1777	1813	1151	0	1469	1257	0	1519
Q Serve(g_s), s	23.2	20.7	20.7	1.7	71.3	71.3	0.1	0.0	1.7	7.1	0.0	7.0
Cycle Q Clear(g_c), s	23.2	20.7	20.7	1.7	71.3	71.3	8.9	0.0	1.7	8.9	0.0	7.0
Prop In Lane	1.00		0.04	1.00		0.15	0.42		0.64	0.93		1.00
Lane Grp Cap(c), veh/h	338	1238	1291	37	938	957	219	0	231	249	0	239
V/C Ratio(X)	0.92	0.48	0.48	0.59	1.46	1.50	0.09	0.00	0.09	0.33	0.00	0.37
Avail Cap(c_a), veh/h	366	1238	1291	79	938	957	308	0	315	326	0	326
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	9.3	9.4	65.6	31.9	31.9	48.6	0.0	48.7	52.3	0.0	50.9
Incr Delay (d2), s/veh	28.2	0.5	0.5	14.2	211.4	231.7	0.2	0.0	0.2	0.9	0.0	1.2
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	12.8	7.2	7.5	0.9	83.2	90.3	0.6	0.0	0.7	2.6	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	82.0	9.8	9.8	79.8	243.3	263.6	48.8	0.0	48.9	53.3	0.0	52.1
LnGrp LOS	F	A	A	E	F	F	D		D	D		D
Approach Vol, veh/h		1530			2825			41			169	
Approach Delay, s/veh		24.5			252.4			48.8			52.7	
Approach LOS		C			F			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	100.0		27.4	30.7	77.1		27.4				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	6.0	* 93		29.0	27.8	* 71		29.0				
Max Q Clear Time (g_c+I1), s	3.7	22.7		10.9	25.2	73.3		10.9				
Green Ext Time (p_c), s	0.0	19.3		0.1	0.4	0.0		0.8				

Intersection Summary		
HCM 7th Control Delay, s/veh	166.8	
HCM 7th LOS	F	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

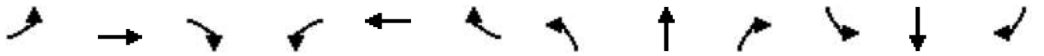


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	977	45	72	2472	87	29	50	16	57	503
v/c Ratio	1.00	0.47	0.05	0.56	1.17	0.31	0.07	0.13	0.05	0.14	1.19
Control Delay (s/veh)	151.2	18.3	1.2	81.5	112.0	51.5	46.3	7.5	46.2	47.5	146.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	151.2	18.3	1.2	81.5	112.0	51.5	46.3	7.5	46.2	47.5	146.1
Queue Length 50th (ft)	108	269	0	67	~1461	70	22	0	12	44	~486
Queue Length 95th (ft)	#241	330	8	121	#1585	124	51	26	34	85	#715
Internal Link Dist (ft)		3704			801		318			2030	
Turn Bay Length (ft)	770		300	280					135		
Base Capacity (vph)	112	2076	944	152	2108	285	398	383	293	398	421
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.47	0.05	0.47	1.17	0.31	0.07	0.13	0.05	0.14	1.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	977	45	72	2465	7	87	29	50	16	57	503
Future Volume (veh/h)	112	977	45	72	2465	7	87	29	50	16	57	503
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	977	45	72	2465	7	87	29	50	16	57	132
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	2420	1065	92	2407	7	173	236	199	203	236	199
Arrive On Green	0.07	0.68	0.68	0.05	0.66	0.66	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3554	1564	1781	3635	10	1188	1870	1574	1312	1870	1574
Grp Volume(v), veh/h	112	977	45	72	1204	1268	87	29	50	16	57	132
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1781	1777	1868	1188	1870	1574	1312	1870	1574
Q Serve(g_s), s	8.1	15.8	1.2	5.2	86.4	86.4	9.3	1.8	3.7	1.4	3.6	10.4
Cycle Q Clear(g_c), s	8.1	15.8	1.2	5.2	86.4	86.4	12.9	1.8	3.7	3.2	3.6	10.4
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	126	2420	1065	92	1177	1237	173	236	199	203	236	199
V/C Ratio(X)	0.89	0.40	0.04	0.78	1.02	1.02	0.50	0.12	0.25	0.08	0.24	0.66
Avail Cap(c_a), veh/h	126	2420	1065	171	1177	1237	305	444	374	349	444	374
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.1	9.2	6.8	61.2	22.0	22.0	57.2	50.6	51.4	52.0	51.4	54.4
Incr Delay (d2), s/veh	48.9	0.2	0.0	13.5	32.4	32.0	2.3	0.2	0.7	0.3	1.0	6.9
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	5.3	5.3	0.4	2.6	40.1	42.0	2.9	0.9	1.5	0.5	1.7	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	109.1	9.4	6.9	74.6	54.4	54.1	59.4	50.8	52.1	52.3	52.3	61.3
LnGrp LOS	F	A	A	E	F	F	E	D	D	D	D	E
Approach Vol, veh/h		1134			2544			166			205	
Approach Delay, s/veh		19.1			54.8			55.7			58.1	
Approach LOS		B			D			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	95.0		23.5	14.5	92.5		23.5				
Change Period (Y+Rc), s	5.3	6.1		7.0	5.3	6.1		7.0				
Max Green Setting (Gmax), s	12.5	83.1		31.0	9.2	86.4		31.0				
Max Q Clear Time (g_c+I1), s	7.2	17.8		14.9	10.1	88.4		12.4				
Green Ext Time (p_c), s	0.0	16.1		0.5	0.0	0.0		1.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		45.0
HCM 7th LOS		D

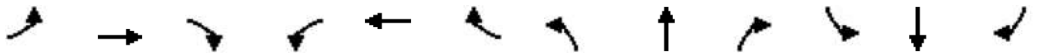
Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	23	145	130	381	290	181	1366	74	189	1144	129
v/c Ratio	0.15	0.21	0.47	0.74	0.45	0.68	0.76	0.12	0.70	0.64	0.20
Control Delay (s/veh)	64.7	24.8	62.2	50.4	6.6	63.3	38.0	1.6	64.6	34.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.7	24.8	62.2	50.4	6.6	63.3	38.0	1.6	64.6	34.6	6.2
Queue Length 50th (ft)	9	30	53	292	0	142	354	0	149	278	0
Queue Length 95th (ft)	26	61	95	431	69	238	473	9	251	384	47
Internal Link Dist (ft)		4468		923			1015			760	
Turn Bay Length (ft)	225		190		140	195		320	130		205
Base Capacity (vph)	157	1129	314	696	765	385	2193	740	366	2151	744
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.13	0.41	0.55	0.38	0.47	0.62	0.10	0.52	0.53	0.17

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	86	59	130	381	290	181	1366	74	189	1144	129
Future Volume (veh/h)	23	86	59	130	381	290	181	1366	74	189	1144	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	86	59	130	381	290	181	1366	0	189	1144	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	463	293	191	475	398	215	1899		222	1921	
Arrive On Green	0.02	0.22	0.22	0.06	0.25	0.25	0.12	0.37	0.00	0.12	0.38	0.00
Sat Flow, veh/h	3456	2089	1321	3456	1870	1565	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	23	72	73	130	381	290	181	1366	0	189	1144	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1633	1728	1870	1565	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	0.7	3.6	3.9	4.0	20.7	18.4	10.8	24.9	0.0	11.3	19.5	0.0
Cycle Q Clear(g_c), s	0.7	3.6	3.9	4.0	20.7	18.4	10.8	24.9	0.0	11.3	19.5	0.0
Prop In Lane	1.00		0.81	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	394	362	191	475	398	215	1899		222	1921	
V/C Ratio(X)	0.29	0.18	0.20	0.68	0.80	0.73	0.84	0.72		0.85	0.60	
Avail Cap(c_a), veh/h	159	587	540	319	704	589	391	2220		372	2163	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	34.2	34.3	50.2	37.9	37.0	46.6	29.2	0.0	46.4	27.2	0.0
Incr Delay (d2), s/veh	2.0	0.4	0.5	4.2	5.9	4.2	8.7	1.3	0.0	9.3	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	0.3	1.5	1.5	1.8	9.7	7.1	5.1	9.6	0.0	5.3	7.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.0	34.6	34.8	54.4	43.7	41.2	55.4	30.5	0.0	55.7	27.8	0.0
LnGrp LOS	D	C	C	D	D	D	E	C		E	C	
Approach Vol, veh/h		168			801			1547			1333	
Approach Delay, s/veh		37.4			44.6			33.4			31.7	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	46.8	11.4	31.2	18.4	47.3	7.9	34.7
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	22.6	47.1	10.0	35.8	23.8	45.9	5.0	40.8
Max Q Clear Time (g_c+I1), s	13.3	26.9	6.0	5.9	12.8	21.5	2.7	22.7
Green Ext Time (p_c), s	0.3	13.4	0.1	1.3	0.3	12.8	0.0	4.8

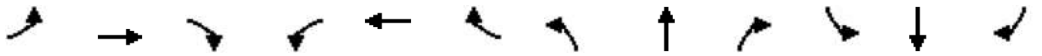
Intersection Summary	
HCM 7th Control Delay, s/veh	35.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

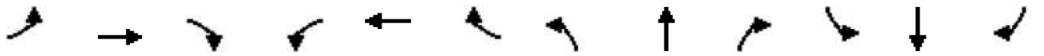
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

1: Eldorado Drive & Fred Warning Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	2218	151	49	1315	14	101	37	101	15	32	44
v/c Ratio	0.16	0.70	0.15	0.30	0.39	0.01	0.48	0.13	0.33	0.07	0.11	0.15
Control Delay (s/veh)	53.2	14.0	2.7	49.4	7.5	0.0	47.3	39.3	18.7	40.1	39.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.2	14.0	2.7	49.4	7.5	0.0	47.3	39.3	18.7	40.1	39.2	5.3
Queue Length 50th (ft)	9	311	4	26	81	0	52	18	13	7	16	0
Queue Length 95th (ft)	38	465	31	78	190	0	129	57	69	31	51	17
Internal Link Dist (ft)		742			7475			2736			746	
Turn Bay Length (ft)	225		210	290		160			125	120		105
Base Capacity (vph)	107	4360	1376	214	4511	1390	346	471	455	345	471	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.51	0.11	0.23	0.29	0.01	0.29	0.08	0.22	0.04	0.07	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	2218	151	49	1315	14	101	37	101	15	32	44
Future Volume (veh/h)	17	2218	151	49	1315	14	101	37	101	15	32	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	2218	151	49	1315	14	101	37	101	15	32	44
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	3461	1073	66	3555	1103	204	216	183	194	216	183
Arrive On Green	0.02	0.68	0.68	0.04	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5106	1584	1781	5106	1584	1323	1870	1585	1251	1870	1585
Grp Volume(v), veh/h	17	2218	151	49	1315	14	101	37	101	15	32	44
Grp Sat Flow(s),veh/h/ln	1781	1702	1584	1781	1702	1584	1323	1870	1585	1251	1870	1585
Q Serve(g_s), s	0.9	24.7	3.4	2.7	10.5	0.3	7.4	1.8	6.0	1.1	1.5	2.5
Cycle Q Clear(g_c), s	0.9	24.7	3.4	2.7	10.5	0.3	8.9	1.8	6.0	2.9	1.5	2.5
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	34	3461	1073	66	3555	1103	204	216	183	194	216	183
V/C Ratio(X)	0.51	0.64	0.14	0.74	0.37	0.01	0.49	0.17	0.55	0.08	0.15	0.24
Avail Cap(c_a), veh/h	89	3956	1227	179	4212	1306	329	392	332	312	392	332
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	9.1	5.7	47.5	6.2	4.6	43.7	39.8	41.6	41.1	39.7	40.1
Incr Delay (d2), s/veh	11.3	0.4	0.1	14.7	0.1	0.0	1.8	0.4	2.6	0.2	0.4	0.8
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	0.5	6.8	0.9	1.4	2.8	0.1	2.5	0.8	2.4	0.3	0.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.8	9.5	5.8	62.2	6.3	4.6	45.5	40.2	44.2	41.3	40.1	40.9
LnGrp LOS	E	A	A	E	A	A	D	D	D	D	D	D
Approach Vol, veh/h		2386			1378			239			91	
Approach Delay, s/veh		9.7			8.3			44.2			40.7	
Approach LOS		A			A			D			D	

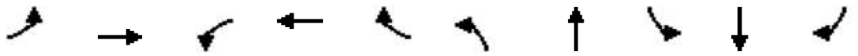
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	73.3		17.6	6.9	75.2		17.6				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	10.0	* 77		20.9	5.0	* 82		20.9				
Max Q Clear Time (g_c+I1), s	4.7	26.7		10.9	2.9	12.5		4.9				
Green Ext Time (p_c), s	0.0	40.9		0.5	0.0	21.9		0.3				

Intersection Summary		
HCM 7th Control Delay, s/veh		11.9
HCM 7th LOS		B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

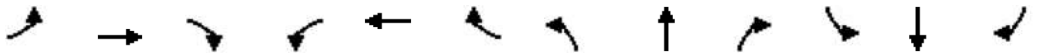
2: Warner Trail & Fred Warning Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	90	2062	39	1156	91	48	154	114	179	65
v/c Ratio	0.57	0.83	0.35	0.50	0.11	0.46	0.42	0.77	0.40	0.13
Control Delay (s/veh)	74.9	33.7	71.0	27.9	0.3	77.5	50.1	92.6	51.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.9	33.7	71.0	27.9	0.3	77.5	50.1	92.6	51.8	0.5
Queue Length 50th (ft)	80	534	35	243	0	43	120	102	151	0
Queue Length 95th (ft)	135	656	73	318	0	87	186	#219	227	0
Internal Link Dist (ft)		7475		636			2261		402	
Turn Bay Length (ft)	250		235		95	190		95		35
Base Capacity (vph)	191	2489	110	2298	799	118	549	150	622	628
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	0.47	0.83	0.35	0.50	0.11	0.41	0.28	0.76	0.29	0.10

Intersection Summary

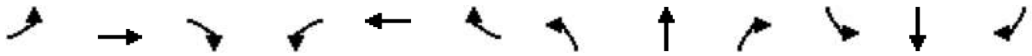
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1920	142	39	1156	91	48	107	47	114	179	65
Future Volume (veh/h)	90	1920	142	39	1156	91	48	107	47	114	179	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	1920	142	39	1156	91	48	107	47	114	179	65
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	2001	147	50	1929	598	62	380	167	135	654	554
Arrive On Green	0.06	0.41	0.41	0.03	0.38	0.38	0.03	0.31	0.31	0.08	0.35	0.35
Sat Flow, veh/h	1781	4852	357	1781	5106	1583	1781	1231	541	1781	1870	1584
Grp Volume(v), veh/h	90	1345	717	39	1156	91	48	0	154	114	179	65
Grp Sat Flow(s),veh/h/ln	1781	1702	1806	1781	1702	1583	1781	0	1772	1781	1870	1584
Q Serve(g_s), s	7.0	53.7	54.2	3.0	25.5	5.3	3.7	0.0	9.2	8.8	9.6	3.9
Cycle Q Clear(g_c), s	7.0	53.7	54.2	3.0	25.5	5.3	3.7	0.0	9.2	8.8	9.6	3.9
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	112	1404	745	50	1929	598	62	0	547	135	654	554
V/C Ratio(X)	0.81	0.96	0.96	0.78	0.60	0.15	0.77	0.00	0.28	0.85	0.27	0.12
Avail Cap(c_a), veh/h	186	1405	745	66	1929	598	120	0	547	135	654	554
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)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	39.9	40.1	67.6	35.0	28.7	67.0	0.0	36.6	63.9	32.7	30.9
Incr Delay (d2), s/veh	8.8	11.5	18.9	33.6	0.7	0.2	18.3	0.0	1.3	36.3	1.0	0.4
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	3.4	23.4	26.6	1.8	10.3	2.0	2.0	0.0	4.2	5.4	4.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.5	51.4	59.0	101.2	35.7	28.9	85.3	0.0	37.9	100.2	33.8	31.3
LnGrp LOS	E	D	E	F	D	C	F		D	F	C	C
Approach Vol, veh/h		2152			1286			202			358	
Approach Delay, s/veh		54.9			37.2			49.2			54.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	49.7	9.3	64.9	10.3	55.4	14.2	60.1
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	10.6	41.9	5.2	57.8	9.4	43.1	14.6	48.4
Max Q Clear Time (g_c+I1), s	10.8	11.2	5.0	56.2	5.7	11.6	9.0	27.5
Green Ext Time (p_c), s	0.0	1.5	0.0	1.5	0.0	2.3	0.1	11.6

Intersection Summary	
HCM 7th Control Delay, s/veh	48.9
HCM 7th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	223	1749	90	93	1289	259	79	203	207	265	174	234
v/c Ratio	0.39	0.83	0.09	0.41	0.74	0.30	0.90	0.54	0.69	1.08	0.38	0.64
Control Delay (s/veh)	56.5	28.4	2.0	67.8	30.9	6.7	135.8	63.9	29.8	140.0	57.6	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.5	28.4	2.0	67.8	30.9	6.7	135.8	63.9	29.8	140.0	57.6	21.2
Queue Length 50th (ft)	92	633	0	42	492	36	73	94	49	~138	78	37
Queue Length 95th (ft)	#161	#906	19	71	528	82	#177	130	130	#231	110	121
Internal Link Dist (ft)		873			1266			798			1278	
Turn Bay Length (ft)	300			225		245	70		95	80		180
Base Capacity (vph)	565	2098	964	226	1749	863	88	910	518	245	985	570
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.83	0.09	0.41	0.74	0.30	0.90	0.22	0.40	1.08	0.18	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

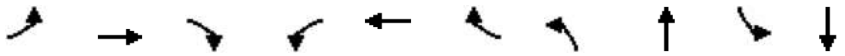
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	1749	90	93	1289	259	79	203	207	265	174	234
Future Volume (veh/h)	223	1749	90	93	1289	259	79	203	207	265	174	234
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	223	1749	90	93	1289	259	79	203	207	265	174	234
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	610	1963	873	137	1449	644	89	617	273	247	693	303
Arrive On Green	0.18	0.55	0.55	0.04	0.41	0.41	0.05	0.17	0.17	0.07	0.20	0.20
Sat Flow, veh/h	3456	3554	1581	3456	3554	1579	1781	3554	1571	3456	3554	1552
Grp Volume(v), veh/h	223	1749	90	93	1289	259	79	203	207	265	174	234
Grp Sat Flow(s),veh/h/ln	1728	1777	1581	1728	1777	1579	1781	1777	1571	1728	1777	1552
Q Serve(g_s), s	8.0	60.7	3.8	3.7	47.2	12.1	6.2	7.0	17.6	10.0	5.8	13.3
Cycle Q Clear(g_c), s	8.0	60.7	3.8	3.7	47.2	12.1	6.2	7.0	17.6	10.0	5.8	13.3
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	610	1963	873	137	1449	644	89	617	273	247	693	303
V/C Ratio(X)	0.37	0.89	0.10	0.68	0.89	0.40	0.89	0.33	0.76	1.07	0.25	0.77
Avail Cap(c_a), veh/h	610	1963	873	148	1503	668	89	914	404	247	990	432
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	27.6	14.9	66.3	38.5	16.3	66.1	50.7	55.1	65.0	47.7	23.8
Incr Delay (d2), s/veh	0.4	6.6	0.2	10.6	8.5	1.9	59.9	0.4	5.7	78.2	0.3	6.9
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	3.4	25.7	1.4	1.8	21.4	4.6	4.3	3.2	7.3	7.0	2.6	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.1	34.2	15.1	77.0	47.0	18.2	126.0	51.1	60.7	143.2	48.0	30.7
LnGrp LOS	D	C	B	E	D	B	F	D	E	F	D	C
Approach Vol, veh/h		2062			1641			489			673	
Approach Delay, s/veh		35.2			44.2			67.3			79.4	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.8	63.2	15.0	31.0	10.6	83.4	12.0	34.0
Change Period (Y+Rc), s	6.1	* 6.1	5.0	6.7	5.0	6.1	5.0	6.7
Max Green Setting (Gmax), s	12.0	* 59	10.0	36.0	6.0	65.2	7.0	39.0
Max Q Clear Time (g_c+I1), s	10.0	49.2	12.0	19.6	5.7	62.7	8.2	15.3
Green Ext Time (p_c), s	0.1	7.9	0.0	2.2	0.0	2.3	0.0	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	47.6
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

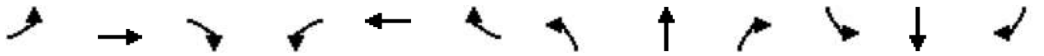


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	2443	28	61	1862	116	50	211	130	86
v/c Ratio	0.41	1.04	0.03	1.00	0.84	0.11	0.68	0.62	1.34	0.20
Control Delay (s/veh)	72.4	54.0	0.0	182.7	27.1	3.4	109.6	53.6	256.1	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.4	54.0	0.0	182.7	27.1	3.4	109.6	53.6	256.1	37.4
Queue Length 50th (ft)	49	~1302	0	59	697	5	48	74	~159	24
Queue Length 95th (ft)	95	#1480	0	#162	920	34	#118	116	#298	51
Internal Link Dist (ft)		3862			2597			391		2736
Turn Bay Length (ft)	365		150	300		150	135		110	
Base Capacity (vph)	133	2353	1088	61	2208	1009	73	677	97	738
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	0.41	1.04	0.03	1.00	0.84	0.11	0.68	0.31	1.34	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



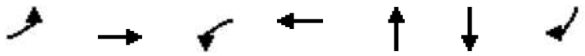
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	2443	28	61	1862	116	50	59	152	130	53	33
Future Volume (veh/h)	54	2443	28	61	1862	116	50	59	152	130	53	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	2443	28	61	1862	116	50	59	152	130	53	33
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	1980	882	201	2280	1016	64	206	183	98	293	168
Arrive On Green	0.03	0.56	0.56	0.11	0.64	0.64	0.04	0.12	0.12	0.06	0.13	0.13
Sat Flow, veh/h	1781	3554	1582	1781	3554	1583	1781	1777	1585	1781	2177	1246
Grp Volume(v), veh/h	54	2443	28	61	1862	116	50	59	152	130	42	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1582	1781	1777	1583	1781	1777	1585	1781	1777	1646
Q Serve(g_s), s	4.4	80.8	0.8	4.6	57.2	4.1	4.0	4.4	13.6	8.0	3.1	3.4
Cycle Q Clear(g_c), s	4.4	80.8	0.8	4.6	57.2	4.1	4.0	4.4	13.6	8.0	3.1	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	61	1980	882	201	2280	1016	64	206	183	98	239	222
V/C Ratio(X)	0.88	1.23	0.03	0.30	0.82	0.11	0.78	0.29	0.83	1.32	0.18	0.20
Avail Cap(c_a), veh/h	61	1980	882	201	2280	1016	74	355	317	98	380	352
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	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	69.7	32.1	7.2	59.1	19.6	10.1	69.3	58.6	62.7	68.5	55.6	55.8
Incr Delay (d2), s/veh	73.5	109.8	0.1	0.1	0.3	0.0	35.8	0.9	11.2	199.4	0.5	0.6
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	3.3	63.6	0.4	2.1	22.7	1.4	2.5	2.1	6.1	9.1	1.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	143.2	141.9	7.3	59.2	19.9	10.1	105.1	59.6	73.9	267.9	56.1	56.4
LnGrp LOS	F	F	A	E	B	B	F	E	E	F	E	E
Approach Vol, veh/h		2525			2039			261			216	
Approach Delay, s/veh		140.4			20.5			76.7			183.6	
Approach LOS		F			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.2	86.7	13.0	23.1	10.0	98.9	10.2	25.8
Change Period (Y+Rc), s	* 5.9	* 5.9	5.0	* 6.3	5.0	* 5.9	5.0	* 6.3
Max Green Setting (Gmax), s	* 5	* 81	8.0	* 29	5.0	* 81	6.0	* 31
Max Q Clear Time (g_c+I1), s	6.6	82.8	10.0	15.6	6.4	59.2	6.0	5.4
Green Ext Time (p_c), s	0.0	0.0	0.0	1.2	0.0	19.0	0.0	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	90.4
HCM 7th LOS	F

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	148	2563	19	1906	58	309	332
v/c Ratio	0.60	1.16	0.26	1.14	0.10	1.01	0.53
Control Delay (s/veh)	58.7	102.8	65.9	103.2	23.3	99.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	58.7	102.8	65.9	103.2	23.3	99.9	7.8
Queue Length 50th (ft)	104	~1161	14	~893	9	228	2
Queue Length 95th (ft)	177	#1479	42	#1130	30	#458	82
Internal Link Dist (ft)		2597		3704	122	283	
Turn Bay Length (ft)	725		300				
Base Capacity (vph)	402	2202	74	1665	586	306	623
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.16	0.26	1.14	0.10	1.01	0.53

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	2530	33	19	1777	129	25	7	26	296	13	332
Future Volume (veh/h)	148	2530	33	19	1777	129	25	7	26	296	13	332
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.97	0.98		0.97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	2530	33	19	1777	129	25	7	26	296	13	94
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	2175	28	35	1732	124	59	73	272	343	13	366
Arrive On Green	0.10	0.61	0.61	0.02	0.52	0.52	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3592	47	1781	3357	240	0	309	1149	1204	53	1543
Grp Volume(v), veh/h	148	1249	1314	19	930	976	25	0	33	309	0	94
Grp Sat Flow(s),veh/h/ln	1781	1777	1861	1781	1777	1820	0	0	1458	1257	0	1543
Q Serve(g_s), s	10.0	74.1	74.1	1.3	63.1	63.1	0.0	0.0	2.2	26.8	0.0	6.1
Cycle Q Clear(g_c), s	10.0	74.1	74.1	1.3	63.1	63.1	29.0	0.0	2.2	29.0	0.0	6.1
Prop In Lane	1.00		0.03	1.00		0.13	1.00		0.79	0.96		1.00
Lane Grp Cap(c), veh/h	182	1076	1127	35	917	939	59	0	346	355	0	366
V/C Ratio(X)	0.81	1.16	1.17	0.55	1.01	1.04	0.42	0.00	0.10	0.87	0.00	0.26
Avail Cap(c_a), veh/h	393	1076	1127	73	917	939	59	0	346	355	0	366
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.8	24.1	24.1	59.5	29.6	29.6	61.2	0.0	36.5	48.3	0.0	37.9
Incr Delay (d2), s/veh	13.1	82.8	84.7	12.8	33.2	40.1	4.8	0.0	0.1	20.3	0.0	0.5
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	5.0	51.6	54.6	0.7	32.9	35.5	0.9	0.0	0.8	11.5	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	66.9	107.0	108.8	72.3	62.8	69.8	66.0	0.0	36.6	68.5	0.0	38.4
LnGrp LOS	E	F	F	E	F	F	E		D	E		D
Approach Vol, veh/h		2711			1925			58			403	
Approach Delay, s/veh		105.7			66.4			49.2			61.5	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	79.9		35.1	18.3	68.9		35.1				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	* 5.8	* 5.8		6.1				
Max Green Setting (Gmax), s	5.0	* 74		29.0	* 27	* 52		29.0				
Max Q Clear Time (g_c+I1), s	3.3	76.1		31.0	12.0	65.1		31.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.6	0.0		0.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		86.7	
HCM 7th LOS		F	

Notes

User approved pedestrian interval to be less than phase max green.

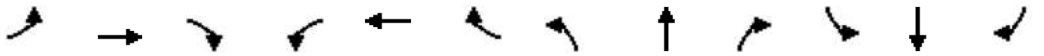
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	320	2461	62	69	1577	69	57	103	16	30	197
v/c Ratio	0.85	0.98	0.05	0.87	0.82	0.51	0.31	0.42	0.12	0.17	0.60
Control Delay (s/veh)	70.1	31.0	1.3	132.3	28.7	68.4	58.0	15.0	54.1	54.4	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.1	31.0	1.3	132.3	28.7	68.4	58.0	15.0	54.1	54.4	14.9
Queue Length 50th (ft)	252	881	0	57	541	55	45	0	12	23	0
Queue Length 95th (ft)	#426	#1289	12	#156	705	105	89	54	35	54	72
Internal Link Dist (ft)		3704			801		318			2030	
Turn Bay Length (ft)	770		300	280					135		
Base Capacity (vph)	387	2524	1132	79	1930	323	438	451	315	438	523
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.98	0.05	0.87	0.82	0.21	0.13	0.23	0.05	0.07	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	2461	62	69	1551	26	69	57	103	16	30	197
Future Volume (veh/h)	320	2461	62	69	1551	26	69	57	103	16	30	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	320	2461	62	69	1551	26	69	57	0	16	30	51
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	2568	1130	81	2049	34	150	160	136	134	160	136
Arrive On Green	0.19	0.72	0.72	0.05	0.57	0.57	0.09	0.09	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1781	3554	1564	1781	3576	60	1317	1870	1585	1346	1870	1585
Grp Volume(v), veh/h	320	2461	62	69	770	807	69	57	0	16	30	51
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1781	1777	1860	1317	1870	1585	1346	1870	1585
Q Serve(g_s), s	22.1	78.4	1.4	4.8	41.0	41.1	6.4	3.6	0.0	1.4	1.9	3.8
Cycle Q Clear(g_c), s	22.1	78.4	1.4	4.8	41.0	41.1	8.3	3.6	0.0	5.0	1.9	3.8
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	347	2568	1130	81	1018	1065	150	160	136	134	160	136
V/C Ratio(X)	0.92	0.96	0.05	0.85	0.76	0.76	0.46	0.36	0.00	0.12	0.19	0.38
Avail Cap(c_a), veh/h	396	2574	1133	81	1018	1065	353	447	379	340	447	379
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	15.7	5.0	59.5	20.2	20.2	57.2	54.1	0.0	56.5	53.3	54.2
Incr Delay (d2), s/veh	24.9	10.0	0.0	54.5	3.8	3.6	2.2	1.3	0.0	0.7	1.0	3.2
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	11.9	27.2	0.4	3.3	16.2	16.9	2.2	1.8	0.0	0.5	0.9	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	74.5	25.7	5.1	114.0	23.9	23.9	59.4	55.5	0.0	57.2	54.4	57.4
LnGrp LOS	E	C	A	F	C	C	E	E		E	D	E
Approach Vol, veh/h		2843			1646			126			97	
Approach Delay, s/veh		30.8			27.7			57.6			56.5	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	96.8		17.7	29.8	78.0		17.7				
Change Period (Y+Rc), s	5.3	6.1		7.0	5.3	6.1		7.0				
Max Green Setting (Gmax), s	5.7	90.9		30.0	27.9	68.7		30.0				
Max Q Clear Time (g_c+I1), s	6.8	80.4		10.3	24.1	43.1		7.0				
Green Ext Time (p_c), s	0.0	10.2		0.4	0.3	18.5		0.5				

Intersection Summary			
HCM 7th Control Delay, s/veh		30.9	
HCM 7th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	55	393	120	132	146	109	1144	135	251	1724	32
v/c Ratio	0.36	0.65	0.45	0.32	0.31	0.61	0.64	0.21	0.76	0.78	0.04
Control Delay (s/veh)	65.2	45.9	59.7	42.8	7.5	67.3	34.1	3.6	60.8	30.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.2	45.9	59.7	42.8	7.5	67.3	34.1	3.6	60.8	30.9	0.1
Queue Length 50th (ft)	22	135	46	89	0	82	263	0	187	402	0
Queue Length 95th (ft)	46	195	84	154	49	152	361	31	287	505	0
Internal Link Dist (ft)		4468		923			1015			760	
Turn Bay Length (ft)	225		190		140	195		320	130		205
Base Capacity (vph)	152	1087	292	660	648	213	1934	689	448	2562	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.36	0.41	0.20	0.23	0.51	0.59	0.20	0.56	0.67	0.04

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	275	118	120	132	146	109	1144	135	251	1724	32
Future Volume (veh/h)	55	275	118	120	132	146	109	1144	135	251	1724	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	275	118	120	132	146	109	1144	0	251	1724	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	406	169	181	341	284	137	1987		287	2419	
Arrive On Green	0.04	0.17	0.17	0.05	0.18	0.18	0.08	0.39	0.00	0.16	0.47	0.00
Sat Flow, veh/h	3456	2422	1008	3456	1870	1562	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	55	199	194	120	132	146	109	1144	0	251	1724	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1653	1728	1870	1562	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	1.7	11.2	11.8	3.6	6.6	9.0	6.4	18.8	0.0	14.7	28.6	0.0
Cycle Q Clear(g_c), s	1.7	11.2	11.8	3.6	6.6	9.0	6.4	18.8	0.0	14.7	28.6	0.0
Prop In Lane	1.00		0.61	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	298	277	181	341	284	137	1987		287	2419	
V/C Ratio(X)	0.42	0.67	0.70	0.66	0.39	0.51	0.80	0.58		0.87	0.71	
Avail Cap(c_a), veh/h	162	590	549	311	702	586	227	2007		478	2726	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	41.6	41.8	49.6	38.4	39.3	48.4	25.6	0.0	43.7	22.3	0.0
Incr Delay (d2), s/veh	2.2	4.8	5.8	4.1	1.2	2.4	10.1	0.6	0.0	9.5	1.0	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	0.7	5.1	5.0	1.6	3.0	3.5	3.1	7.1	0.0	6.9	10.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.3	46.4	47.7	53.7	39.5	41.7	58.5	26.2	0.0	53.2	23.3	0.0
LnGrp LOS	D	D	D	D	D	D	E	C		D	C	
Approach Vol, veh/h		448			398			1253			1975	
Approach Delay, s/veh		47.7			44.6			29.0			27.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	48.0	11.0	25.1	13.6	57.0	9.4	26.6
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	28.6	41.9	9.6	35.4	13.6	56.9	5.0	40.0
Max Q Clear Time (g_c+I1), s	16.7	20.8	5.6	13.8	8.4	30.6	3.7	11.0
Green Ext Time (p_c), s	0.5	11.7	0.1	3.6	0.1	19.9	0.0	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	31.7
HCM 7th LOS	C

Notes

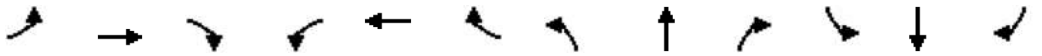
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Appendix F

With Highway 111 Improvements Intersection Worksheets

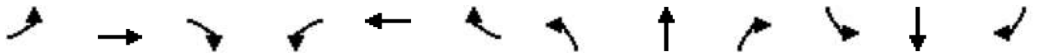
1: Eldorado Drive & Fred Warning Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	1104	143	119	2324	22	196	29	90	13	12	30
v/c Ratio	0.16	0.49	0.19	0.49	0.75	0.02	0.67	0.07	0.22	0.05	0.03	0.07
Control Delay (s/veh)	53.2	17.4	3.1	47.8	14.8	0.0	48.7	34.8	6.1	35.8	35.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.2	17.4	3.1	47.8	14.8	0.0	48.7	34.8	6.1	35.8	35.4	0.3
Queue Length 50th (ft)	9	145	0	55	264	0	87	11	0	5	5	0
Queue Length 95th (ft)	39	217	31	148	479	0	#251	46	30	27	25	0
Internal Link Dist (ft)		742			7475			2736			746	
Turn Bay Length (ft)	225		210	290		160			125	120		105
Base Capacity (vph)	111	4123	1292	378	4482	1375	400	536	529	395	536	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.27	0.11	0.31	0.52	0.02	0.49	0.05	0.17	0.03	0.02	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	1104	143	119	2324	22	196	29	90	13	12	30
Future Volume (veh/h)	18	1104	143	119	2324	22	196	29	90	13	12	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1104	143	119	2324	22	196	29	90	13	12	30
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	3036	941	148	3362	1042	288	315	266	263	315	262
Arrive On Green	0.02	0.59	0.59	0.08	0.66	0.66	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	5106	1582	1781	5106	1582	1360	1870	1579	1269	1870	1554
Grp Volume(v), veh/h	18	1104	143	119	2324	22	196	29	90	13	12	30
Grp Sat Flow(s),veh/h/ln	1781	1702	1582	1781	1702	1582	1360	1870	1579	1269	1870	1554
Q Serve(g_s), s	1.1	12.3	4.4	7.2	31.4	0.5	15.5	1.4	5.5	1.0	0.6	1.8
Cycle Q Clear(g_c), s	1.1	12.3	4.4	7.2	31.4	0.5	16.1	1.4	5.5	2.4	0.6	1.8
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	34	3036	941	148	3362	1042	288	315	266	263	315	262
V/C Ratio(X)	0.53	0.36	0.15	0.81	0.69	0.02	0.68	0.09	0.34	0.05	0.04	0.11
Avail Cap(c_a), veh/h	81	3169	982	276	3727	1155	342	390	329	313	390	324
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	11.5	9.9	49.5	11.8	6.5	44.9	38.6	40.3	39.6	38.2	38.7
Incr Delay (d2), s/veh	11.9	0.1	0.1	9.8	0.6	0.0	4.3	0.1	0.7	0.1	0.1	0.2
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	0.6	4.1	1.4	3.5	9.6	0.2	5.5	0.7	2.2	0.3	0.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	65.3	11.6	10.0	59.3	12.4	6.5	49.3	38.7	41.0	39.7	38.3	39.0
LnGrp LOS	E	B	B	E	B	A	D	D	D	D	D	D
Approach Vol, veh/h		1265			2465			315			55	
Approach Delay, s/veh		12.2			14.6			45.9			39.0	
Approach LOS		B			B			D			D	

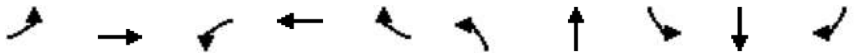
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	71.1		24.6	7.1	78.1		24.6				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	17.0	* 68		22.9	5.0	* 80		22.9				
Max Q Clear Time (g_c+I1), s	9.2	14.3		18.1	3.1	33.4		4.4				
Green Ext Time (p_c), s	0.1	17.3		0.5	0.0	39.0		0.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		16.6
HCM 7th LOS		B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

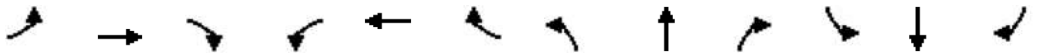
2: Warner Trail & Fred Warning Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	48	1074	68	2043	110	91	177	71	149	92
v/c Ratio	0.40	0.45	0.50	0.83	0.14	0.69	0.43	0.62	0.38	0.20
Control Delay (s/veh)	71.4	24.6	74.1	34.4	3.5	88.8	48.6	86.7	53.4	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.4	24.6	74.1	34.4	3.5	88.8	48.6	86.7	53.4	1.0
Queue Length 50th (ft)	43	218	61	543	0	80	136	63	127	0
Queue Length 95th (ft)	85	276	109	643	32	#176	210	#136	193	0
Internal Link Dist (ft)		7475		636			2261		402	
Turn Bay Length (ft)	250		235		95	190		95		35
Base Capacity (vph)	120	2409	159	2468	806	135	570	118	576	590
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	0.40	0.45	0.43	0.83	0.14	0.67	0.31	0.60	0.26	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	1001	73	68	2043	110	91	120	57	71	149	92
Future Volume (veh/h)	48	1001	73	68	2043	110	91	120	57	71	149	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	1001	73	68	2043	110	91	120	57	71	149	92
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	1968	143	87	2141	663	112	382	181	90	576	478
Arrive On Green	0.03	0.41	0.41	0.05	0.42	0.42	0.06	0.32	0.32	0.05	0.31	0.31
Sat Flow, veh/h	1781	4856	354	1781	5106	1581	1781	1191	566	1781	1870	1550
Grp Volume(v), veh/h	48	701	373	68	2043	110	91	0	177	71	149	92
Grp Sat Flow(s),veh/h/ln	1781	1702	1806	1781	1702	1581	1781	0	1756	1781	1870	1550
Q Serve(g_s), s	3.7	21.6	21.7	5.3	54.2	6.1	7.1	0.0	10.7	5.5	8.4	6.1
Cycle Q Clear(g_c), s	3.7	21.6	21.7	5.3	54.2	6.1	7.1	0.0	10.7	5.5	8.4	6.1
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	62	1380	732	87	2141	663	112	0	563	90	576	478
V/C Ratio(X)	0.78	0.51	0.51	0.79	0.95	0.17	0.81	0.00	0.31	0.79	0.26	0.19
Avail Cap(c_a), veh/h	71	1380	732	151	2145	664	122	0	563	111	576	478
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)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	31.2	31.2	65.9	39.4	25.4	64.8	0.0	35.9	65.7	36.4	35.6
Incr Delay (d2), s/veh	32.9	0.5	0.9	14.3	10.8	0.2	30.6	0.0	1.5	26.0	1.1	0.9
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	2.2	8.6	9.3	2.7	23.5	2.3	4.1	0.0	4.8	3.1	4.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	99.9	31.7	32.1	80.2	50.2	25.6	95.4	0.0	37.4	91.8	37.5	36.5
LnGrp LOS	F	C	C	F	D	C	F		D	F	D	D
Approach Vol, veh/h		1122			2221			268			312	
Approach Delay, s/veh		34.7			49.9			57.1			49.6	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	51.4	12.2	63.9	14.2	49.6	10.3	65.9
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	8.7	42.4	11.9	52.5	9.6	41.5	5.6	58.8
Max Q Clear Time (g_c+I1), s	7.5	12.7	7.3	23.7	9.1	10.4	5.7	56.2
Green Ext Time (p_c), s	0.0	1.8	0.0	12.6	0.0	2.2	0.0	2.5

Intersection Summary	
HCM 7th Control Delay, s/veh	46.0
HCM 7th LOS	D

3: Cook Street & Highway 111



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	118	966	141	1899	57	148	82	200	315	239
v/c Ratio	0.53	0.35	0.52	0.67	0.52	0.35	0.26	0.67	0.55	0.64
Control Delay (s/veh)	71.9	18.4	83.9	5.4	80.5	57.5	2.0	73.7	58.0	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.9	18.4	83.9	5.4	80.5	57.5	2.0	73.7	58.0	28.5
Queue Length 50th (ft)	54	171	60	50	51	66	0	91	144	76
Queue Length 95th (ft)	#99	234	m68	158	#109	95	0	#147	183	162
Internal Link Dist (ft)		873		1266		798			1278	
Turn Bay Length (ft)	300		225		70		95	80		180
Base Capacity (vph)	224	2753	282	2820	114	917	515	301	993	545
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	0.53	0.35	0.50	0.67	0.50	0.16	0.16	0.66	0.32	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	851	115	141	1643	256	57	148	82	200	315	239
Future Volume (veh/h)	118	851	115	141	1643	256	57	148	82	200	315	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	851	115	141	1643	256	57	148	82	200	315	239
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	679	2654	357	190	1933	300	73	448	195	248	557	247
Arrive On Green	0.20	0.58	0.58	0.05	0.43	0.43	0.04	0.13	0.13	0.07	0.16	0.16
Sat Flow, veh/h	3456	4541	610	3456	4444	689	1781	3554	1549	3456	3554	1576
Grp Volume(v), veh/h	118	637	329	141	1257	642	57	148	82	200	315	239
Grp Sat Flow(s),veh/h/ln	1728	1702	1747	1728	1702	1728	1781	1777	1549	1728	1777	1576
Q Serve(g_s), s	4.0	13.4	13.5	5.6	46.3	46.8	4.4	5.3	6.8	8.0	11.5	13.9
Cycle Q Clear(g_c), s	4.0	13.4	13.5	5.6	46.3	46.8	4.4	5.3	6.8	8.0	11.5	13.9
Prop In Lane	1.00		0.35	1.00		0.40	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	679	1990	1021	190	1480	752	73	448	195	248	557	247
V/C Ratio(X)	0.17	0.32	0.32	0.74	0.85	0.85	0.78	0.33	0.42	0.81	0.57	0.97
Avail Cap(c_a), veh/h	679	1990	1021	247	1529	777	102	921	402	272	998	442
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.8	14.9	14.9	65.2	35.4	35.6	66.5	55.8	56.5	64.0	54.6	25.4
Incr Delay (d2), s/veh	0.1	0.4	0.8	8.4	6.2	11.9	22.1	0.5	1.8	15.2	1.3	27.4
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	1.7	5.1	5.3	2.7	19.6	21.3	2.5	2.4	2.7	4.0	5.2	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.9	15.3	15.7	73.6	41.7	47.5	88.6	56.3	58.2	79.2	55.9	52.9
LnGrp LOS	D	B	B	E	D	D	F	E	E	E	E	D
Approach Vol, veh/h		1084			2040			287			754	
Approach Delay, s/veh		18.9			45.7			63.3			61.1	
Approach LOS		B			D			E			E	

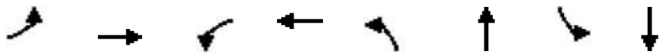
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.6	67.0	15.0	24.3	12.7	87.9	10.7	28.6
Change Period (Y+Rc), s	6.1	* 6.1	5.0	6.7	5.0	6.1	5.0	6.7
Max Green Setting (Gmax), s	7.0	* 63	11.0	36.3	10.0	59.9	8.0	39.3
Max Q Clear Time (g_c+I1), s	6.0	48.8	10.0	8.8	7.6	15.5	6.4	15.9
Green Ext Time (p_c), s	0.0	12.1	0.1	1.5	0.1	12.2	0.0	4.0

Intersection Summary	
HCM 7th Control Delay, s/veh	42.7
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

4: Eldorado Drive & Highway 111



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	1252	147	2497	46	241	145	145
v/c Ratio	0.44	0.62	0.31	0.85	0.46	0.62	0.91	0.29
Control Delay (s/veh)	63.8	32.1	44.1	28.0	77.9	39.3	114.3	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.8	32.1	44.1	28.0	77.9	39.3	114.3	38.2
Queue Length 50th (ft)	56	335	106	644	41	59	134	42
Queue Length 95th (ft)	m100	366	181	810	85	102	#274	75
Internal Link Dist (ft)		3862		2597		391		2736
Turn Bay Length (ft)	365		300		135		110	
Base Capacity (vph)	141	2058	473	2944	113	773	159	803
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	0.44	0.61	0.31	0.85	0.41	0.31	0.91	0.18

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	1206	46	147	2323	174	46	128	113	145	95	50
Future Volume (veh/h)	62	1206	46	147	2323	174	46	128	113	145	95	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	1206	46	147	2323	174	46	128	113	145	95	50
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	1622	62	581	2962	219	59	189	153	153	353	173
Arrive On Green	0.04	0.32	0.32	0.33	0.61	0.61	0.03	0.10	0.10	0.09	0.15	0.15
Sat Flow, veh/h	1781	5044	192	1781	4845	358	1781	1860	1510	1781	2294	1124
Grp Volume(v), veh/h	62	814	438	147	1623	874	46	122	119	145	72	73
Grp Sat Flow(s),veh/h/ln	1781	1702	1832	1781	1702	1799	1781	1777	1593	1781	1777	1641
Q Serve(g_s), s	4.8	29.8	29.9	8.5	49.6	51.5	3.6	9.3	10.2	11.3	5.0	5.5
Cycle Q Clear(g_c), s	4.8	29.8	29.9	8.5	49.6	51.5	3.6	9.3	10.2	11.3	5.0	5.5
Prop In Lane	1.00		0.10	1.00		0.20	1.00		0.95	1.00		0.69
Lane Grp Cap(c), veh/h	76	1095	589	581	2081	1100	59	181	162	153	274	253
V/C Ratio(X)	0.81	0.74	0.74	0.25	0.78	0.80	0.77	0.67	0.74	0.95	0.26	0.29
Avail Cap(c_a), veh/h	76	1379	742	581	2081	1100	115	369	331	153	407	376
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	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	66.4	42.3	42.3	34.6	20.2	20.6	67.1	60.7	61.1	63.7	52.2	52.4
Incr Delay (d2), s/veh	46.4	4.6	8.3	0.0	0.3	0.6	19.0	5.4	7.9	56.4	0.7	0.9
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	3.1	12.9	14.5	3.6	18.0	19.8	1.9	4.4	4.5	7.5	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	112.9	46.9	50.6	34.7	20.5	21.1	86.1	66.0	68.9	120.1	52.9	53.3
LnGrp LOS	F	D	D	C	C	C	F	E	E	F	D	D
Approach Vol, veh/h		1314			2644			287			290	
Approach Delay, s/veh		51.3			21.5			70.5			86.6	
Approach LOS		D			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.6	50.9	17.0	20.5	11.0	91.5	9.7	27.9
Change Period (Y+Rc), s	* 5.9	* 5.9	5.0	* 6.3	5.0	* 5.9	5.0	* 6.3
Max Green Setting (Gmax), s	* 20	* 57	12.0	* 29	6.0	* 71	9.0	* 32
Max Q Clear Time (g_c+I1), s	10.5	31.9	13.3	12.2	6.8	53.5	5.6	7.5
Green Ext Time (p_c), s	0.2	13.2	0.0	1.5	0.0	16.3	0.0	1.0

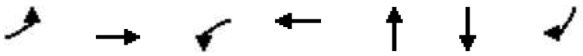
Intersection Summary	
HCM 7th Control Delay, s/veh	37.4
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

5: Indian Wells Lane & Highway 111

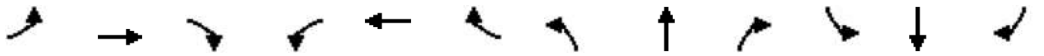


Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	312	1218	22	2993	41	81	88
v/c Ratio	0.86	0.32	0.28	1.08	0.12	0.57	0.34
Control Delay (s/veh)	73.2	6.5	71.3	72.5	38.3	71.4	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.2	6.5	71.3	72.5	38.3	71.4	12.2
Queue Length 50th (ft)	256	125	18	~1043	11	67	0
Queue Length 95th (ft)	#438	176	50	#1219	30	122	43
Internal Link Dist (ft)		2597		3704	122	283	
Turn Bay Length (ft)	725		300				
Base Capacity (vph)	376	3794	81	2769	643	274	405
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.32	0.27	1.08	0.06	0.30	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	1191	27	22	2587	406	8	19	14	75	6	88
Future Volume (veh/h)	312	1191	27	22	2587	406	8	19	14	75	6	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.97		0.94	0.96		0.96
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	1191	27	22	2587	216	8	19	14	75	6	88
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	3598	82	37	2554	208	96	200	144	228	16	234
Arrive On Green	0.19	0.70	0.70	0.02	0.53	0.53	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5134	116	1781	4802	390	376	1294	933	1147	106	1517
Grp Volume(v), veh/h	312	790	428	22	1813	990	19	0	22	81	0	88
Grp Sat Flow(s),veh/h/ln	1781	1702	1846	1781	1702	1788	1134	0	1470	1253	0	1517
Q Serve(g_s), s	23.4	12.3	12.3	1.7	72.4	72.4	0.1	0.0	1.8	7.2	0.0	7.1
Cycle Q Clear(g_c), s	23.4	12.3	12.3	1.7	72.4	72.4	9.0	0.0	1.8	9.0	0.0	7.1
Prop In Lane	1.00		0.06	1.00		0.22	0.42		0.64	0.93		1.00
Lane Grp Cap(c), veh/h	338	2386	1294	37	1811	951	212	0	227	244	0	234
V/C Ratio(X)	0.92	0.33	0.33	0.60	1.00	1.04	0.09	0.00	0.10	0.33	0.00	0.38
Avail Cap(c_a), veh/h	364	2386	1294	79	1811	951	291	0	301	313	0	311
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	7.9	7.9	66.1	31.9	31.9	49.3	0.0	49.4	53.1	0.0	51.7
Incr Delay (d2), s/veh	28.6	0.1	0.2	14.4	21.5	40.1	0.2	0.0	0.2	1.0	0.0	1.2
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	12.9	4.0	4.4	0.9	32.8	39.4	0.6	0.0	0.7	2.6	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	82.8	8.1	8.2	80.4	53.4	72.0	49.5	0.0	49.6	54.1	0.0	52.9
LnGrp LOS	F	A	A	F	F	F	D		D	D		D
Approach Vol, veh/h		1530			2825			41			169	
Approach Delay, s/veh		23.3			60.1			49.6			53.5	
Approach LOS		C			E			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	101.2		27.1	30.8	78.2		27.1				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	6.0	* 94		27.9	27.8	* 72		27.9				
Max Q Clear Time (g_c+I1), s	3.7	14.3		11.0	25.4	74.4		11.0				
Green Ext Time (p_c), s	0.0	19.0		0.1	0.4	0.0		0.8				

Intersection Summary		
HCM 7th Control Delay, s/veh	47.4	
HCM 7th LOS	D	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

6: Miles Avenue & Highway 111

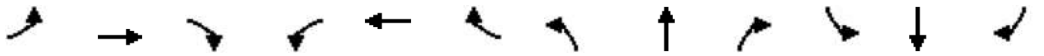


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	112	1022	72	2472	87	29	50	16	57	503
v/c Ratio	0.71	0.41	0.48	1.05	0.24	0.06	0.10	0.04	0.11	0.91
Control Delay (s/veh)	70.8	18.5	56.5	61.9	31.1	27.8	2.1	27.7	28.5	45.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.8	18.5	56.5	61.9	31.1	27.8	2.1	27.7	28.5	45.2
Queue Length 50th (ft)	74	168	47	~684	45	14	0	8	28	214
Queue Length 95th (ft)	#158	207	93	#779	87	36	9	25	60	#408
Internal Link Dist (ft)		3704		801		318			2030	
Turn Bay Length (ft)	770		280					135		
Base Capacity (vph)	165	2486	171	2353	394	549	521	404	549	589
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	0.68	0.41	0.42	1.05	0.22	0.05	0.10	0.04	0.10	0.85

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	977	45	72	2465	7	87	29	50	16	57	503
Future Volume (veh/h)	112	977	45	72	2465	7	87	29	50	16	57	503
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		0.99
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	977	45	72	2465	7	87	29	50	16	57	132
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	2933	135	93	2939	8	221	262	221	253	262	221
Arrive On Green	0.08	0.59	0.59	0.05	0.56	0.56	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	4999	230	1781	5257	15	1189	1870	1575	1313	1870	1575
Grp Volume(v), veh/h	112	665	357	72	1596	876	87	29	50	16	57	132
Grp Sat Flow(s),veh/h/ln	1781	1702	1825	1781	1702	1867	1189	1870	1575	1313	1870	1575
Q Serve(g_s), s	5.1	8.4	8.4	3.3	32.4	32.5	5.8	1.1	2.3	0.9	2.3	6.6
Cycle Q Clear(g_c), s	5.1	8.4	8.4	3.3	32.4	32.5	8.1	1.1	2.3	2.0	2.3	6.6
Prop In Lane	1.00		0.13	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	1997	1071	93	1903	1044	221	262	221	253	262	221
V/C Ratio(X)	0.79	0.33	0.33	0.77	0.84	0.84	0.39	0.11	0.23	0.06	0.22	0.60
Avail Cap(c_a), veh/h	203	1997	1071	212	1924	1056	482	674	567	541	674	567
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	8.8	8.8	39.0	15.2	15.3	35.4	31.3	31.8	32.2	31.8	33.6
Incr Delay (d2), s/veh	12.3	0.2	0.3	12.7	3.7	6.6	1.1	0.2	0.5	0.2	0.8	4.8
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	2.6	2.4	2.7	1.7	10.6	12.5	1.7	0.5	0.9	0.3	1.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.9	9.0	9.2	51.7	19.0	21.8	36.5	31.5	32.3	32.4	32.5	38.4
LnGrp LOS	D	A	A	D	B	C	D	C	C	C	C	D
Approach Vol, veh/h		1134			2544			166			205	
Approach Delay, s/veh		13.1			20.9			34.4			36.3	
Approach LOS		B			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	55.0		18.7	12.0	52.7		18.7				
Change Period (Y+Rc), s	5.3	6.1		7.0	5.3	6.1		7.0				
Max Green Setting (Gmax), s	9.9	46.7		30.0	9.5	47.1		30.0				
Max Q Clear Time (g_c+I1), s	5.3	10.4		10.1	7.1	34.5		8.6				
Green Ext Time (p_c), s	0.0	13.1		0.5	0.0	12.1		1.3				

Intersection Summary	
HCM 7th Control Delay, s/veh	20.0
HCM 7th LOS	C

Notes

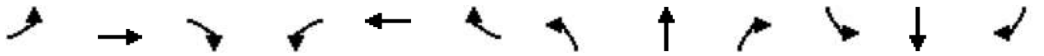
User approved pedestrian interval to be less than phase max green.

7: Washington Street & Miles Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	23	145	130	381	290	181	1366	74	189	1144	129
v/c Ratio	0.15	0.21	0.47	0.74	0.45	0.68	0.76	0.12	0.70	0.64	0.20
Control Delay (s/veh)	64.7	24.8	62.2	50.4	6.6	63.3	38.0	1.6	64.6	34.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.7	24.8	62.2	50.4	6.6	63.3	38.0	1.6	64.6	34.6	6.2
Queue Length 50th (ft)	9	30	53	292	0	142	354	0	149	278	0
Queue Length 95th (ft)	26	61	95	431	69	238	473	9	251	384	47
Internal Link Dist (ft)		4468		923			1015			760	
Turn Bay Length (ft)	225		190		140	195		320	130		205
Base Capacity (vph)	157	1129	314	696	765	385	2193	740	366	2151	744
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.13	0.41	0.55	0.38	0.47	0.62	0.10	0.52	0.53	0.17

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	86	59	130	381	290	181	1366	74	189	1144	129
Future Volume (veh/h)	23	86	59	130	381	290	181	1366	74	189	1144	129
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	86	59	130	381	290	181	1366	0	189	1144	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	463	293	191	475	398	215	1899		222	1921	
Arrive On Green	0.02	0.22	0.22	0.06	0.25	0.25	0.12	0.37	0.00	0.12	0.38	0.00
Sat Flow, veh/h	3456	2089	1321	3456	1870	1565	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	23	72	73	130	381	290	181	1366	0	189	1144	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1633	1728	1870	1565	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	0.7	3.6	3.9	4.0	20.7	18.4	10.8	24.9	0.0	11.3	19.5	0.0
Cycle Q Clear(g_c), s	0.7	3.6	3.9	4.0	20.7	18.4	10.8	24.9	0.0	11.3	19.5	0.0
Prop In Lane	1.00		0.81	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	394	362	191	475	398	215	1899		222	1921	
V/C Ratio(X)	0.29	0.18	0.20	0.68	0.80	0.73	0.84	0.72		0.85	0.60	
Avail Cap(c_a), veh/h	159	587	540	319	704	589	391	2220		372	2163	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	34.2	34.3	50.2	37.9	37.0	46.6	29.2	0.0	46.4	27.2	0.0
Incr Delay (d2), s/veh	2.0	0.4	0.5	4.2	5.9	4.2	8.7	1.3	0.0	9.3	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	0.3	1.5	1.5	1.8	9.7	7.1	5.1	9.6	0.0	5.3	7.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	54.0	34.6	34.8	54.4	43.7	41.2	55.4	30.5	0.0	55.7	27.8	0.0
LnGrp LOS	D	C	C	D	D	D	E	C		E	C	
Approach Vol, veh/h		168			801			1547			1333	
Approach Delay, s/veh		37.4			44.6			33.4			31.7	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.9	46.8	11.4	31.2	18.4	47.3	7.9	34.7
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	22.6	47.1	10.0	35.8	23.8	45.9	5.0	40.8
Max Q Clear Time (g_c+I1), s	13.3	26.9	6.0	5.9	12.8	21.5	2.7	22.7
Green Ext Time (p_c), s	0.3	13.4	0.1	1.3	0.3	12.8	0.0	4.8

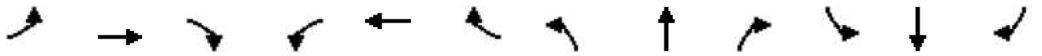
Intersection Summary	
HCM 7th Control Delay, s/veh	35.3
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

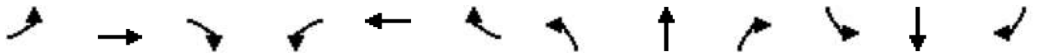
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

1: Eldorado Drive & Fred Warning Drive



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	17	2218	151	49	1315	14	101	37	101	15	32	44
v/c Ratio	0.16	0.70	0.15	0.30	0.39	0.01	0.48	0.13	0.33	0.07	0.11	0.15
Control Delay (s/veh)	53.2	14.0	2.7	49.4	7.5	0.0	47.3	39.3	18.7	40.1	39.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.2	14.0	2.7	49.4	7.5	0.0	47.3	39.3	18.7	40.1	39.2	5.3
Queue Length 50th (ft)	9	311	4	26	81	0	52	18	13	7	16	0
Queue Length 95th (ft)	38	465	31	78	190	0	129	57	69	31	51	17
Internal Link Dist (ft)		742			7475			2736			746	
Turn Bay Length (ft)	225		210	290		160			125	120		105
Base Capacity (vph)	107	4360	1376	214	4511	1390	346	471	455	345	471	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.51	0.11	0.23	0.29	0.01	0.29	0.08	0.22	0.04	0.07	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	2218	151	49	1315	14	101	37	101	15	32	44
Future Volume (veh/h)	17	2218	151	49	1315	14	101	37	101	15	32	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	2218	151	49	1315	14	101	37	101	15	32	44
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	34	3461	1073	66	3555	1103	204	216	183	194	216	183
Arrive On Green	0.02	0.68	0.68	0.04	0.70	0.70	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5106	1584	1781	5106	1584	1323	1870	1585	1251	1870	1585
Grp Volume(v), veh/h	17	2218	151	49	1315	14	101	37	101	15	32	44
Grp Sat Flow(s),veh/h/ln	1781	1702	1584	1781	1702	1584	1323	1870	1585	1251	1870	1585
Q Serve(g_s), s	0.9	24.7	3.4	2.7	10.5	0.3	7.4	1.8	6.0	1.1	1.5	2.5
Cycle Q Clear(g_c), s	0.9	24.7	3.4	2.7	10.5	0.3	8.9	1.8	6.0	2.9	1.5	2.5
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	34	3461	1073	66	3555	1103	204	216	183	194	216	183
V/C Ratio(X)	0.51	0.64	0.14	0.74	0.37	0.01	0.49	0.17	0.55	0.08	0.15	0.24
Avail Cap(c_a), veh/h	89	3956	1227	179	4212	1306	329	392	332	312	392	332
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	9.1	5.7	47.5	6.2	4.6	43.7	39.8	41.6	41.1	39.7	40.1
Incr Delay (d2), s/veh	11.3	0.4	0.1	14.7	0.1	0.0	1.8	0.4	2.6	0.2	0.4	0.8
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	0.5	6.8	0.9	1.4	2.8	0.1	2.5	0.8	2.4	0.3	0.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.8	9.5	5.8	62.2	6.3	4.6	45.5	40.2	44.2	41.3	40.1	40.9
LnGrp LOS	E	A	A	E	A	A	D	D	D	D	D	D
Approach Vol, veh/h		2386			1378			239			91	
Approach Delay, s/veh		9.7			8.3			44.2			40.7	
Approach LOS		A			A			D			D	

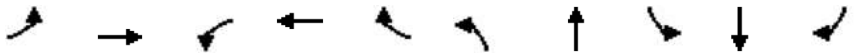
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	73.3		17.6	6.9	75.2		17.6				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	5.0	* 5.8		6.1				
Max Green Setting (Gmax), s	10.0	* 77		20.9	5.0	* 82		20.9				
Max Q Clear Time (g_c+I1), s	4.7	26.7		10.9	2.9	12.5		4.9				
Green Ext Time (p_c), s	0.0	40.9		0.5	0.0	21.9		0.3				

Intersection Summary		
HCM 7th Control Delay, s/veh		11.9
HCM 7th LOS		B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

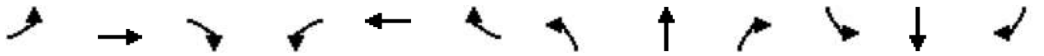
2: Warner Trail & Fred Warning Drive



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	90	2062	39	1156	91	48	154	114	179	65
v/c Ratio	0.57	0.83	0.35	0.50	0.11	0.46	0.42	0.77	0.40	0.13
Control Delay (s/veh)	74.9	33.7	71.0	27.9	0.3	77.5	50.1	92.6	51.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.9	33.7	71.0	27.9	0.3	77.5	50.1	92.6	51.8	0.5
Queue Length 50th (ft)	80	534	35	243	0	43	120	102	151	0
Queue Length 95th (ft)	135	656	73	318	0	87	186	#219	227	0
Internal Link Dist (ft)		7475		636			2261		402	
Turn Bay Length (ft)	250		235		95	190		95		35
Base Capacity (vph)	191	2489	110	2298	799	118	549	150	622	628
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	0.47	0.83	0.35	0.50	0.11	0.41	0.28	0.76	0.29	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1920	142	39	1156	91	48	107	47	114	179	65
Future Volume (veh/h)	90	1920	142	39	1156	91	48	107	47	114	179	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	1920	142	39	1156	91	48	107	47	114	179	65
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	2001	147	50	1929	598	62	380	167	135	654	554
Arrive On Green	0.06	0.41	0.41	0.03	0.38	0.38	0.03	0.31	0.31	0.08	0.35	0.35
Sat Flow, veh/h	1781	4852	357	1781	5106	1583	1781	1231	541	1781	1870	1584
Grp Volume(v), veh/h	90	1345	717	39	1156	91	48	0	154	114	179	65
Grp Sat Flow(s),veh/h/ln	1781	1702	1806	1781	1702	1583	1781	0	1772	1781	1870	1584
Q Serve(g_s), s	7.0	53.7	54.2	3.0	25.5	5.3	3.7	0.0	9.2	8.8	9.6	3.9
Cycle Q Clear(g_c), s	7.0	53.7	54.2	3.0	25.5	5.3	3.7	0.0	9.2	8.8	9.6	3.9
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	112	1404	745	50	1929	598	62	0	547	135	654	554
V/C Ratio(X)	0.81	0.96	0.96	0.78	0.60	0.15	0.77	0.00	0.28	0.85	0.27	0.12
Avail Cap(c_a), veh/h	186	1405	745	66	1929	598	120	0	547	135	654	554
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)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	39.9	40.1	67.6	35.0	28.7	67.0	0.0	36.6	63.9	32.7	30.9
Incr Delay (d2), s/veh	8.8	11.5	18.9	33.6	0.7	0.2	18.3	0.0	1.3	36.3	1.0	0.4
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	3.4	23.4	26.6	1.8	10.3	2.0	2.0	0.0	4.2	5.4	4.6	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.5	51.4	59.0	101.2	35.7	28.9	85.3	0.0	37.9	100.2	33.8	31.3
LnGrp LOS	E	D	E	F	D	C	F		D	F	C	C
Approach Vol, veh/h		2152			1286			202			358	
Approach Delay, s/veh		54.9			37.2			49.2			54.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	49.7	9.3	64.9	10.3	55.4	14.2	60.1
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	10.6	41.9	5.2	57.8	9.4	43.1	14.6	48.4
Max Q Clear Time (g_c+I1), s	10.8	11.2	5.0	56.2	5.7	11.6	9.0	27.5
Green Ext Time (p_c), s	0.0	1.5	0.0	1.5	0.0	2.3	0.1	11.6

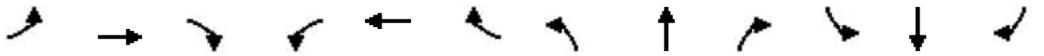
Intersection Summary	
HCM 7th Control Delay, s/veh	48.9
HCM 7th LOS	D



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	223	1839	93	1548	79	203	207	265	174	234
v/c Ratio	0.68	0.65	0.41	0.59	0.58	0.54	0.69	0.72	0.36	0.56
Control Delay (s/veh)	72.4	24.0	81.1	18.5	79.2	63.9	29.8	71.8	56.1	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.4	24.0	81.1	18.5	79.2	63.9	29.8	71.8	56.1	11.6
Queue Length 50th (ft)	102	412	46	188	70	94	49	121	77	0
Queue Length 95th (ft)	148	535	m73	205	127	130	130	171	110	76
Internal Link Dist (ft)		873		1266		798			1278	
Turn Bay Length (ft)	300		225		70		95	80		180
Base Capacity (vph)	340	2811	226	2625	155	912	519	388	988	602
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	0.66	0.65	0.41	0.59	0.51	0.22	0.40	0.68	0.18	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	223	1749	90	93	1289	259	79	203	207	265	174	234
Future Volume (veh/h)	223	1749	90	93	1289	259	79	203	207	265	174	234
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	223	1749	90	93	1289	259	79	203	207	265	174	234
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	707	2647	136	137	1533	308	99	617	273	315	744	325
Arrive On Green	0.20	0.53	0.53	0.04	0.36	0.36	0.06	0.17	0.17	0.09	0.21	0.21
Sat Flow, veh/h	3456	4972	256	3456	4260	856	1781	3554	1571	3456	3554	1553
Grp Volume(v), veh/h	223	1197	642	93	1030	518	79	203	207	265	174	234
Grp Sat Flow(s),veh/h/ln	1728	1702	1824	1728	1702	1712	1781	1777	1571	1728	1777	1553
Q Serve(g_s), s	7.7	35.5	35.6	3.7	38.9	38.9	6.1	7.0	17.6	10.6	5.7	12.3
Cycle Q Clear(g_c), s	7.7	35.5	35.6	3.7	38.9	38.9	6.1	7.0	17.6	10.6	5.7	12.3
Prop In Lane	1.00		0.14	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	707	1812	971	137	1225	616	99	617	273	315	744	325
V/C Ratio(X)	0.32	0.66	0.66	0.68	0.84	0.84	0.80	0.33	0.76	0.84	0.23	0.72
Avail Cap(c_a), veh/h	707	1812	971	148	1291	649	153	916	405	370	992	434
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	23.6	23.6	66.3	41.1	41.1	65.3	50.7	55.1	62.6	46.0	20.2
Incr Delay (d2), s/veh	0.3	1.9	3.5	10.6	7.1	13.1	14.8	0.4	5.6	13.9	0.2	5.0
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	3.3	14.0	15.5	1.8	16.9	18.1	3.2	3.2	7.3	5.2	2.5	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.6	25.5	27.2	77.0	48.2	54.2	80.1	51.1	60.7	76.5	46.3	25.1
LnGrp LOS	D	C	C	E	D	D	F	D	E	E	D	C
Approach Vol, veh/h		2062			1641			489			673	
Approach Delay, s/veh		28.4			51.7			59.8			50.8	
Approach LOS		C			D			E			D	

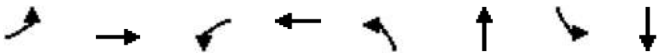
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.7	56.5	17.8	31.0	10.6	80.6	12.8	36.0
Change Period (Y+Rc), s	6.1	* 6.1	5.0	6.7	5.0	6.1	5.0	6.7
Max Green Setting (Gmax), s	13.0	* 53	15.0	36.1	6.0	60.1	12.0	39.1
Max Q Clear Time (g_c+I1), s	9.7	40.9	12.6	19.6	5.7	37.6	8.1	14.3
Green Ext Time (p_c), s	0.2	9.5	0.2	2.2	0.0	17.6	0.0	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	42.5
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

4: Eldorado Drive & Highway 111

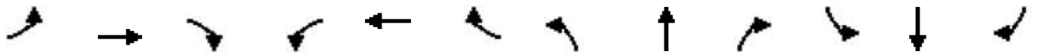


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	54	2471	61	1978	50	211	130	86
v/c Ratio	0.44	0.78	0.81	0.64	0.49	0.60	0.87	0.18
Control Delay (s/veh)	58.4	33.5	126.7	19.7	79.8	46.6	108.0	35.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	58.4	33.5	126.7	19.7	79.8	46.6	108.0	35.7
Queue Length 50th (ft)	49	797	57	414	45	63	119	23
Queue Length 95th (ft)	m71	883	#154	534	90	105	#240	49
Internal Link Dist (ft)		3862		2597		391		2736
Turn Bay Length (ft)	365		300		135		110	
Base Capacity (vph)	126	3168	75	3087	113	714	151	789
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	0.43	0.78	0.81	0.64	0.44	0.30	0.86	0.11

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	2443	28	61	1862	116	50	59	152	130	53	33
Future Volume (veh/h)	54	2443	28	61	1862	116	50	59	152	130	53	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	2443	28	61	1862	116	50	59	152	130	53	33
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	2656	30	218	2949	183	64	207	185	153	362	207
Arrive On Green	0.04	0.51	0.51	0.12	0.60	0.60	0.04	0.12	0.12	0.09	0.17	0.17
Sat Flow, veh/h	1781	5204	60	1781	4914	305	1781	1777	1585	1781	2177	1246
Grp Volume(v), veh/h	54	1596	875	61	1288	690	50	59	152	130	42	44
Grp Sat Flow(s),veh/h/ln	1781	1702	1860	1781	1702	1815	1781	1777	1585	1781	1777	1646
Q Serve(g_s), s	4.2	60.5	60.9	4.4	34.1	34.3	3.9	4.2	13.1	10.1	2.9	3.2
Cycle Q Clear(g_c), s	4.2	60.5	60.9	4.4	34.1	34.3	3.9	4.2	13.1	10.1	2.9	3.2
Prop In Lane	1.00		0.03	1.00		0.17	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	69	1737	949	218	2043	1089	64	207	185	153	295	273
V/C Ratio(X)	0.78	0.92	0.92	0.28	0.63	0.63	0.78	0.28	0.82	0.85	0.14	0.16
Avail Cap(c_a), veh/h	89	1743	952	218	2043	1089	115	369	329	153	407	377
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	1.00	1.00	0.43	0.43	0.43	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	66.7	31.6	31.7	55.8	18.0	18.0	66.9	56.5	60.4	63.1	49.9	50.0
Incr Delay (d2), s/veh	27.4	9.4	15.5	0.3	0.6	1.2	17.7	0.9	10.7	34.0	0.3	0.4
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	2.4	26.6	30.8	2.0	13.3	14.4	2.1	2.0	5.8	6.0	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	94.1	41.0	47.2	56.1	18.6	19.3	84.6	57.4	71.2	97.1	50.2	50.4
LnGrp LOS	F	D	D	E	B	B	F	E	E	F	D	D
Approach Vol, veh/h		2525			2039			261			216	
Approach Delay, s/veh		44.3			20.0			70.6			78.5	
Approach LOS		D			B			E			E	

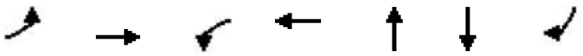
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	77.3	17.0	22.6	10.5	89.9	10.1	29.5
Change Period (Y+Rc), s	* 5.9	* 5.9	5.0	* 6.3	5.0	* 5.9	5.0	* 6.3
Max Green Setting (Gmax), s	* 5	* 72	12.0	* 29	7.0	* 70	9.0	* 32
Max Q Clear Time (g_c+I1), s	6.4	62.9	12.1	15.1	6.2	36.3	5.9	5.2
Green Ext Time (p_c), s	0.0	8.6	0.0	1.2	0.0	26.9	0.0	0.6

Intersection Summary	
HCM 7th Control Delay, s/veh	37.3
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

5: Indian Wells Lane & Highway 111



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	148	2563	19	1906	58	309	332
v/c Ratio	0.57	0.87	0.23	0.90	0.08	0.90	0.50
Control Delay (s/veh)	51.9	23.8	58.8	35.6	20.3	69.3	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.9	23.8	58.8	35.6	20.3	69.3	6.7
Queue Length 50th (ft)	94	466	13	432	8	198	0
Queue Length 95th (ft)	164	680	39	#566	26	#405	72
Internal Link Dist (ft)		2597		3704	122	283	
Turn Bay Length (ft)	725		300				
Base Capacity (vph)	452	3046	83	2128	702	350	667
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.84	0.23	0.90	0.08	0.88	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	2530	33	19	1777	129	25	7	26	296	13	332
Future Volume (veh/h)	148	2530	33	19	1777	129	25	7	26	296	13	332
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.99		0.98	0.98		0.98
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	2530	33	19	1777	129	25	7	26	296	13	94
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	2929	38	36	2291	166	99	82	305	386	14	409
Arrive On Green	0.10	0.56	0.56	0.02	0.47	0.47	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	5194	68	1781	4850	351	129	310	1152	1221	54	1547
Grp Volume(v), veh/h	148	1656	907	19	1246	660	25	0	33	309	0	94
Grp Sat Flow(s),veh/h/ln	1781	1702	1857	1781	1702	1797	129	0	1462	1274	0	1547
Q Serve(g_s), s	9.1	46.1	46.4	1.2	34.0	34.2	2.2	0.0	1.9	24.6	0.0	5.3
Cycle Q Clear(g_c), s	9.1	46.1	46.4	1.2	34.0	34.2	28.7	0.0	1.9	26.5	0.0	5.3
Prop In Lane	1.00		0.04	1.00		0.20	1.00		0.79	0.96		1.00
Lane Grp Cap(c), veh/h	186	1920	1048	36	1608	849	99	0	387	400	0	409
V/C Ratio(X)	0.80	0.86	0.87	0.53	0.77	0.78	0.25	0.00	0.09	0.77	0.00	0.23
Avail Cap(c_a), veh/h	433	1941	1059	80	1608	849	99	0	387	400	0	409
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	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.8	20.6	20.7	54.1	24.5	24.5	53.9	0.0	30.9	40.8	0.0	32.1
Incr Delay (d2), s/veh	11.9	4.4	8.0	11.9	2.4	4.6	1.3	0.0	0.1	9.3	0.0	0.4
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	4.5	17.2	20.0	0.6	13.1	14.4	0.7	0.0	0.7	9.2	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.6	25.1	28.7	66.0	26.9	29.2	55.2	0.0	31.0	50.2	0.0	32.5
LnGrp LOS	E	C	C	E	C	C	E		C	D		C
Approach Vol, veh/h		2711			1925			58			403	
Approach Delay, s/veh		28.2			28.1			41.4			46.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	68.7		35.6	17.4	58.5		35.6				
Change Period (Y+Rc), s	5.0	* 5.8		6.1	* 5.8	* 5.8		6.1				
Max Green Setting (Gmax), s	5.0	* 64		29.5	* 27	* 42		29.5				
Max Q Clear Time (g_c+I1), s	3.2	48.4		30.7	11.1	36.2		28.5				
Green Ext Time (p_c), s	0.0	14.5		0.0	0.6	4.3		0.3				

Intersection Summary			
HCM 7th Control Delay, s/veh		29.7	
HCM 7th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

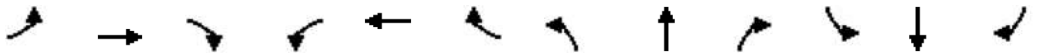
6: Miles Avenue & Highway 111



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	320	2523	69	1577	69	57	103	16	30	197
v/c Ratio	0.77	0.81	0.62	0.75	0.38	0.23	0.31	0.09	0.12	0.52
Control Delay (s/veh)	45.6	16.2	65.2	23.7	40.8	36.0	5.2	34.0	34.2	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.6	16.2	65.2	23.7	40.8	36.0	5.2	34.0	34.2	10.6
Queue Length 50th (ft)	160	354	37	246	35	28	0	8	15	0
Queue Length 95th (ft)	#306	489	#104	330	75	63	23	26	39	58
Internal Link Dist (ft)		3704		801		318			2030	
Turn Bay Length (ft)	770		280					135		
Base Capacity (vph)	425	3105	112	2214	492	667	658	480	667	693
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	0.75	0.81	0.62	0.71	0.14	0.09	0.16	0.03	0.04	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	2461	62	69	1551	26	69	57	103	16	30	197
Future Volume (veh/h)	320	2461	62	69	1551	26	69	57	103	16	30	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	320	2461	62	69	1551	26	69	57	0	16	30	51
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	3114	78	89	2354	39	226	225	190	211	225	190
Arrive On Green	0.20	0.61	0.61	0.05	0.46	0.46	0.12	0.12	0.00	0.12	0.12	0.12
Sat Flow, veh/h	1781	5121	128	1781	5172	87	1317	1870	1585	1346	1870	1585
Grp Volume(v), veh/h	320	1632	891	69	1021	556	69	57	0	16	30	51
Grp Sat Flow(s),veh/h/ln	1781	1702	1845	1781	1702	1855	1317	1870	1585	1346	1870	1585
Q Serve(g_s), s	14.5	29.9	30.3	3.2	19.3	19.3	4.1	2.3	0.0	0.9	1.2	2.4
Cycle Q Clear(g_c), s	14.5	29.9	30.3	3.2	19.3	19.3	5.3	2.3	0.0	3.2	1.2	2.4
Prop In Lane	1.00		0.07	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	2070	1122	89	1549	844	226	225	190	211	225	190
V/C Ratio(X)	0.89	0.79	0.79	0.78	0.66	0.66	0.31	0.25	0.00	0.08	0.13	0.27
Avail Cap(c_a), veh/h	432	2109	1143	114	1549	844	545	678	574	537	678	574
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.1	12.2	12.3	38.9	17.6	17.6	34.9	33.1	0.0	34.5	32.6	33.1
Incr Delay (d2), s/veh	17.2	2.3	4.4	22.4	1.3	2.4	0.8	0.6	0.0	0.3	0.5	1.4
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	7.4	8.9	10.4	1.8	6.7	7.5	1.3	1.1	0.0	0.3	0.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.3	14.5	16.7	61.3	18.9	20.0	35.7	33.7	0.0	34.8	33.1	34.5
LnGrp LOS	D	B	B	E	B	B	D	C		C	C	C
Approach Vol, veh/h		2843			1646			126			97	
Approach Delay, s/veh		19.1			21.0			34.8			34.1	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	56.5		16.9	22.1	43.8		16.9				
Change Period (Y+Rc), s	5.3	6.1		7.0	5.3	6.1		7.0				
Max Green Setting (Gmax), s	5.3	51.3		30.0	20.1	36.5		30.0				
Max Q Clear Time (g_c+I1), s	5.2	32.3		7.3	16.5	21.3		5.2				
Green Ext Time (p_c), s	0.0	18.0		0.4	0.3	11.7		0.6				

Intersection Summary			
HCM 7th Control Delay, s/veh		20.5	
HCM 7th LOS		C	

Notes
User approved pedestrian interval to be less than phase max green.

7: Washington Street & Miles Avenue



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	55	393	120	132	146	109	1144	135	251	1724	32
v/c Ratio	0.36	0.65	0.45	0.32	0.31	0.61	0.64	0.21	0.76	0.78	0.04
Control Delay (s/veh)	65.2	45.9	59.7	42.8	7.5	67.3	34.1	3.6	60.8	30.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.2	45.9	59.7	42.8	7.5	67.3	34.1	3.6	60.8	30.9	0.1
Queue Length 50th (ft)	22	135	46	89	0	82	263	0	187	402	0
Queue Length 95th (ft)	46	195	84	154	49	152	361	31	287	505	0
Internal Link Dist (ft)		4468		923			1015			760	
Turn Bay Length (ft)	225		190		140	195		320	130		205
Base Capacity (vph)	152	1087	292	660	648	213	1934	689	448	2562	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.36	0.41	0.20	0.23	0.51	0.59	0.20	0.56	0.67	0.04

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	275	118	120	132	146	109	1144	135	251	1724	32
Future Volume (veh/h)	55	275	118	120	132	146	109	1144	135	251	1724	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width 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
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	275	118	120	132	146	109	1144	0	251	1724	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	406	169	181	341	284	137	1987		287	2419	
Arrive On Green	0.04	0.17	0.17	0.05	0.18	0.18	0.08	0.39	0.00	0.16	0.47	0.00
Sat Flow, veh/h	3456	2422	1008	3456	1870	1562	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	55	199	194	120	132	146	109	1144	0	251	1724	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1653	1728	1870	1562	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	1.7	11.2	11.8	3.6	6.6	9.0	6.4	18.8	0.0	14.7	28.6	0.0
Cycle Q Clear(g_c), s	1.7	11.2	11.8	3.6	6.6	9.0	6.4	18.8	0.0	14.7	28.6	0.0
Prop In Lane	1.00		0.61	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	130	298	277	181	341	284	137	1987		287	2419	
V/C Ratio(X)	0.42	0.67	0.70	0.66	0.39	0.51	0.80	0.58		0.87	0.71	
Avail Cap(c_a), veh/h	162	590	549	311	702	586	227	2007		478	2726	
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.2	41.6	41.8	49.6	38.4	39.3	48.4	25.6	0.0	43.7	22.3	0.0
Incr Delay (d2), s/veh	2.2	4.8	5.8	4.1	1.2	2.4	10.1	0.6	0.0	9.5	1.0	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	0.7	5.1	5.0	1.6	3.0	3.5	3.1	7.1	0.0	6.9	10.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.3	46.4	47.7	53.7	39.5	41.7	58.5	26.2	0.0	53.2	23.3	0.0
LnGrp LOS	D	D	D	D	D	D	E	C		D	C	
Approach Vol, veh/h		448			398			1253			1975	
Approach Delay, s/veh		47.7			44.6			29.0			27.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	48.0	11.0	25.1	13.6	57.0	9.4	26.6
Change Period (Y+Rc), s	5.4	6.5	5.4	7.2	5.4	6.5	5.4	7.2
Max Green Setting (Gmax), s	28.6	41.9	9.6	35.4	13.6	56.9	5.0	40.0
Max Q Clear Time (g_c+I1), s	16.7	20.8	5.6	13.8	8.4	30.6	3.7	11.0
Green Ext Time (p_c), s	0.5	11.7	0.1	3.6	0.1	19.9	0.0	2.0

Intersection Summary	
HCM 7th Control Delay, s/veh	31.7
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.