

# City of Cathedral City General Plan Update

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## ENVIRONMENTAL IMPACT REPORT

### 2.0. ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURES

#### 2.1 Introduction

This section of the Cathedral City General Plan EIR provides an overview of the regional environmental setting in which the City is located, with particular emphasis on the environmental constraints and resources most likely to be affected by implementation of the Proposed Project and provides detailed analysis of the effects the Proposed Project will have on the environment. As prescribed by CEQA, the analysis is conducted on a categorical basis. Each discussion includes a description of the thresholds of significance considered in the analysis, the regulatory framework, description of the impacts the Proposed Project would have on the environment and identifies the anticipated level of impact. If the impacts are expected to be potentially significant, mitigation measures are provided. Finally, the level of impact after the imposition of these mitigation measures is determined (residual impact), and cumulative impacts are addressed.

##### 2.1.1 Summary of Environmental Impact Analysis

This following resource topics are assessed for potential impacts associated with the Proposed Project:

- Aesthetics in Section 2.2
- Agriculture and Forestry Resources in Section 2.3
- Air Quality and Greenhouse Gases in Section 2.4
- Biological Resources in Section 2.5
- Cultural and Tribal Cultural Resources in Section 2.6
- Energy and Mineral Resources in Section 2.7
- Geology and Soils in Section 2.8
- Hazards, Wildfires & Hazardous Materials in Section 2.9
- Hydrology and Water Quality in Section 2.10
- Land Use and Planning in Section 2.11
- Noise in Section 2.12
- Parks and Recreation in Section 2.13
- Population, Housing and Socio-Economic Resources in Section 2.14
- Public Utilities and Service Systems in Section 2.15
- Transportation in Section 2.16

**Threshold of Significance:** This subsection cites the applicable CEQA thresholds that are applicable to the resource topic and the project.

**Regulatory Framework:** This subsection provides a brief discussion of federal, State, and local regulations and policies that are applicable to the resource topic and the project.

**Environmental Setting:** This subsection provides an overview of the regional environmental setting in which the Proposed Project is located, with particular emphasis on the environmental constraints and resources most likely to be affected by implementation of the Project.

**Existing Conditions:** This subsection presents a description of the existing physical environmental conditions at and in the immediate vicinity of the Project planning area with respect to each resource area, and at an appropriate level of detail to understand the impact analysis.

**Project Impacts and Mitigation Measures:** This subsection evaluates the potential for the General Plan update and ATP (Proposed Project) to affect the physical environment. Significance criteria for evaluation of environmental impacts are defined in the beginning of the impact analysis section, including an explanation of how the significance criteria are used in the evaluation of impacts for the Project. This subsection includes a discussion of the approach to the analysis, including identification of the significance criteria applicable to the Project. Potential impacts are identified and characterized. Where feasible, mitigation measures are identified to avoid or reduce identified significant impacts to a less-than-significant level.

The Impacts and Mitigation Measures subsection in each resource discussion includes an impact statement followed by the evaluation of the impact for the relevant facility components, and a conclusion regarding the impact for the Project as a whole. Many of the General Plan's policies and programs serve to avoid or minimize impacts associated with the Project's implementation and are described generally and referenced in this discussion. When applicable, mitigation measures are also presented.

No Impact: This determination is made if a resource is absent or if a resource exists within the project area or area of potential effect, but there is no potential that the project could affect the resource.

Less than Significant: This determination applies if there is a potential for some limited impact on a resource, but the impact is not significant under the significance criterion.

Less than Significant with Mitigation: This determination applies if it is certain that the project would result in an adverse effect that meets the significance criteria, but mitigation is available to reduce the impact to a less than significant level.

Significant and Unavoidable: This determination applies if the project would result in a significant adverse effect in accordance with the significance criterion and there is some mitigation available to lessen the impact, but the residual effect after implementation of the mitigation would remain significant.

**Mitigation Monitoring and Reporting Programs (MMRP):** Where applicable, MMRPs have been developed to ensure that avoidance, minimization and mitigation measures are implemented, and assigns responsibility schedules.

**Significance after Mitigation:** This subsection identifies the level of significance of impacts after avoidance, minimization, and mitigation measures are implemented.



**Cumulative Impacts:** Cumulative impacts are discussed in each environmental resource section following the description of project-specific impacts and mitigation measures. CEQA requires that an EIR contain an assessment of the cumulative impacts of a project when the project's incremental effect may be cumulatively considerable. As defined in State CEQA Guidelines §15065(a)(3), "cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The nature of the General Plan update Project lends itself to a cumulative impact analysis based on the regional plan approach. Guidance for cumulative impact analysis is provided in State CEQA Guidelines §15130, which states that:

- An EIR shall discuss cumulative impacts of a project when the Project's incremental effect is "cumulatively considerable" (i.e., the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current, and probable future projects, including those outside the control of the agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the Project evaluated in the EIR.
- A Project's contribution is less than cumulatively considerable, and thus not significant, if the Project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the Project alone.

The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

## 2.2 Aesthetics

### 2.2.1 Introduction

This section evaluates potential impacts of developing the proposed 2040 General Plan Update on aesthetic, visual, and scenic resources, including potential loss of views, direct impacts to scenic resources, and effects of increased lighting on motorists and residents in the Planning Area. General Plan Policies and standard City requirements are evaluated as to their effect of mitigating or avoiding any potentially significant effects.

### 2.2.2 Thresholds of Significance

Based on Appendix G of the 2018 State CEQA Guidelines, impacts related to aesthetics would be significant if the Proposed Project would:

- 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 nonurbanized 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.

### 2.2.3 Regulatory Framework

#### Federal

The National Environmental Policy Act of 1969 states that it is the responsibility of the federal government to “ensure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings ... and to attain the widest range of beneficial uses in the environment with degradation, risk to health or safety, or other undesirable and unintended consequences.”<sup>1</sup> The Federal Highway Administration (FHWA) in its implementation of the National Environmental Policy Act (NEPA)<sup>2</sup> dictates that final decisions regarding projects are to be implemented according to the best overall public interest, taking into consideration the adverse environmental impacts, including the destruction or disruption of aesthetic values that would occur as result of a Proposed Project. As noted below, there are no federally designated "scenic highways", scenic byways or other aesthetic or cultural resources that would be impacted by the Proposed Project. Nonetheless, US Interstate-10 passes through a region of important scenic value, including the Coachella Valley and the City. Under NEPA, the Federal Highway Administration (and its agents such as Caltrans) is tasked with protecting scenic resources along this and other federal highways.

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<sup>1</sup> National Environmental Policy Act of 1969 (Section 101 42 USC Section 4331 [b] [2])

<sup>2</sup> Ibid. (USC Section 109 [h])

## State

### California Scenic Highway Program

In 1963, the State of California established the Scenic Highway Program to develop a system of State roadways whose adjacent corridors contained scenic resources worthy of protection and enhancement. SR 111, between State Highway 74 in Palm Desert and its connection with US Interstate-10 near Whitewater, is eligible to be included in the State Scenic Highway System,<sup>3</sup> but it is not officially designated as a scenic highway. Sections 260 through 263 of the State Streets and Highways Code establish the Scenic Highways Program and require local government agencies to take the following actions to protect the scenic appearance of a scenic corridor:

- Regulate land use and density of development,
- Provide detailed land and site planning,
- Prohibit off-site outdoor advertising and control on-site outdoor advertising,
- Pay careful attention to and control earthmoving and landscaping, and
- Scrutinize the design and appearance of structures and equipment.

## County Scenic Corridors

The Western Coachella Valley Action Plan (WCVAP), a sub-plan of the Riverside County General Plan, designates several roadways in the Coachella Valley as “scenic corridors”. In the Cathedral City area these include US Interstate-10, Varner Road, Palm Drive, and Dillon Road. The County has adopted policies meant to protect these scenic corridors where they occur on unincorporated County lands. Relevant policies are primarily associated with signage, and other development adjacent to or near these and other scenic corridors, and include the following:

WCVAP 19.1 Protect the scenic highways in the Western Coachella Valley from change that would diminish the aesthetic value of adjacent properties in accordance with policies in the Scenic Corridors sections of the Land Use, Multipurpose Open Space, and Circulation Elements.

## Regional/Local

The 2040 General Plan Update will facilitate new development throughout the Planning Area through the adoption of its Land Use Map, and policies promoting development. The following 2040 General Plan Policies are designed to guide the aesthetic quality of the Planning Area.

### Community Design Element

**Policy 1.1:** The City recognizes the importance of quality planning and design and shall develop and update standards and guidelines that address all areas of community design.

**Policy 1.2:** The City shall apply the design standards and associated Municipal Code to the processing of all development proposals within the City’s designated Downtown district as set forth in the Downtown Design Guidelines.

**Policy 2.1:** Neighborhoods shall establish a well-defined edge or boundary, consisting of landscaping, green belts, open space, and/or entry monumentation, in appropriate locations to help create a unique community image and sense of place.

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<sup>3</sup> "Article 2.5 of Chapter 2 of Division 1 of the California Streets & Highways Code". California Office of Legislative Counsel. Retrieved February 6, 2019.

**Policy 2.2:** Community design, architecture, and landscaping standards and guidelines shall be compatible with and enhance the City’s desert setting and natural scenic resources.

**Policy 2.3:** The City shall pro-actively work to preserve and restore the community’s night sky by updating and revising the Lighting Ordinance based on the guidelines set forth by the International Dark Sky Association.

**Policy 3.2:** Native desert landscape materials and site-sensitive architectural designs shall be incorporated into all public and private building projects to complement and enhance the functional and aesthetic relationships between the natural and built environments.

**Policy 3.3:** The City shall actively pursue joint land use agreements with the Agua Caliente Band of Cahuilla Indians and individual landowners to retire billboards located within the City limits.

**Policy 3.4:** The City shall maintain and enforce a general Sign Ordinance and the Auto Center Sign Ordinance, which define permitted sign locations, sizes, maintenance, and other related requirements.

**Policy 3.5:** Overhead utility lines shall be undergrounded to the greatest extent practical through the establishment of an undergrounding program and guidelines.

**Policy 5.4:** The City shall support and conduct a high level of Code Enforcement to encourage neighborhood beautification and to maintain property values and quality of life.

#### Open Space and Conservation Element

**Policy 4:** Expand and enhance an integrated network of open space to support recreation, natural resources, historic and tribal resources, habitat, water management, aesthetics, and other beneficial uses.

**Policy 11:** Native landscaping materials and oasis-like design features shall be incorporated into parks, public rights-of-way, golf courses, and other open space lands, as appropriate, to enhance, retain and preserve the natural desert environment and enhance human and wildlife habitats.

#### **2.2.4 Regional Environmental Setting**

The Coachella Valley is a low desert basin surrounded by dramatic mountainous terrain created by the active geology that is characteristic of Southern California. The overall gradient of the valley is from northwest to southeast, gently sloping from the San Gorgonio Pass, at approximately 2,600 feet above mean sea level to the Salton Sea, which has a current surface elevation of approximately 228 feet below mean sea level.

The valley and the Salton Sea are located within the Salton Trough, a fault-controlled valley formed by the San Andreas Fault Zone. The Salton Trough is located within the Colorado Desert Geomorphic Province, which is bounded to the southwest by the Peninsular Ranges province that include the San Jacinto Mountains, to the north by the eastern Transverse Ranges province of the San Bernardino and Little San Bernardino Mountains, and to the northeast by the southeastern portion of the Mojave Desert province. The surrounding provinces contain some of the highest mountain peaks in the state and the region.

Surrounding mountains include the San Jacinto Mountains, the foothills and slopes of which ascend from the valley floor. At its peak, Mount San Jacinto rises to an elevation of 10,834 feet above mean sea level. To the southwest and south are the Santa Rosa Mountains, with Toro Peak at an elevation of 8,715 feet above mean sea level. Visual resources to the east include the colorful Mecca Hills, the Cottonwood Mountains and the Chocolate Mountains to the southeast. To the north and northeast of the valley are the Little San Bernardino Mountains, which are visible from the City. In addition to cultivated fields on the valley floor, alluvial fans, wind and lake deposits have accumulated over time and are prominent features within the valley floor. Emanating from the mouths of mountain canyons are numerous alluvial fans, such as the Mecca Hills located east of the planning area.

### 2.2.5 Existing Conditions

Cathedral City is named for the dramatic and scenic mountainous areas that form the southern portion of the City. The scenic vistas of the City also include the upper slopes of the Santa Rosa Mountains to the southwest and south and the steeply rising terrain of the San Jacinto Mountains and Mt. San Jacinto to the west, which are prominently featured in advertising and promotional materials. Other important scenic mountain vistas that are prominent include Mt. San Gorgonio and the San Bernardino Mountains to the northwest and the Indio Hills and Little San Bernardino Mountains to the north and northeast.

While panoramic mountain vistas are the most prominent of the City's scenic resources, there are many other aspects of the desert environment that provide a mix of more intimate scenery in the community. These include the Whitewater River and the East and West Cathedral Canyon Washes and surrounding terrain. Large expanses of desert sand fields remain undisturbed both north and south of the Interstate-10 corridor and on the slopes of Edom Hill and Flat-top Mountain to the north. The Indio Hills, including Edom Hill, also provide expansive and dramatic terrain that can be appreciated from all parts of the City.

A wide variety of visual resources in the City are also associated with the built environment and include the beautifully designed City Downtown area and the East Palm Canyon Drive corridor, the numerous public parks and golf course communities, and the both intimate and grand scenic vistas that can be appreciated from many of the City's major roadways (also see Image Corridors map in the General Plan Circulation and Mobility Element). Landscape treatment along the City's many roadways has been a priority since the City's incorporation and are an area of ongoing focus for City planners.

### 2.2.6 Project Impacts

The proposed General Plan update has the potential to have a profound effect on the City's aesthetic resources, including the tremendous desert and mountain views and the visual quality of the community and the built environment. The following evaluates the potential effects implementing the Proposed Project may have on these important resources.

Would the Project:

**a) *Have a substantial adverse effect on a scenic vista.***

Natural scenic vistas in the planning area include the Santa Rosa, San Jacinto, and Little San Bernardino Mountains. Some of the more notable scenic vistas in the City include the Cathedral Cove located in the foothills and the expansive backdrop of the Santa Rosa Mountains just south of the City limits. To the north and east, scenic vistas include Edom Hill, Indio Hills and the rising terrain of the San Jacinto, San Bernardino and Little San Bernardino Mountains.

The 2040 General Plan Update will facilitate new development in areas that are currently vacant, and encourage redevelopment in existing urbanized areas within the City. The redevelopment or development of new manmade structures, including buildings, streets, signage, walls, and landscaping, has the potential to disrupt views of the scenic vistas and natural landscapes.

The 2040 General Plan Update provides policies and programs to protect existing views and maintain existing scenic vistas. These include policies relating to the preservation of existing neighborhoods, and the implementation of development standards to reduce impacts from new or redeveloped projects on adjacent lands (Community Design Element policies 1.1, 1.2, and 2.2). Further, the City will continue to implement its Zoning standards, which limit building height, and control mass and scale. The General Plan Update also contains policies geared to high quality design in harmony with the natural environment, as well as the preservation of natural resources (Community Design Element policies 2.1, 2.2, and 3.2; Open Space and Conservation Element policies 4 and 11).

The policies and programs contained in the Community Design and Open Space/Conservation Elements will limit the potential impacts on scenic vistas resulting from implementation of the General Plan Update. As a result, impacts on scenic vistas caused by implementation of the General Plan Update, will be less than significant.

***b) Substantially damage scenic resources, including, but not limited to, trees, rock outcropping, and historic buildings within a state scenic highway?***

Scenic resources include trees, rock outcroppings, and historic buildings that are visible from a state scenic highway. Currently, there are no state scenic highways that run through Cathedral City. Therefore, impacts to scenic resources along a state scenic highway will be less than significant.

Other notable scenic resources within the City include varied streetscapes and parks and open space. Protection of these resources is important to preserving the City's scenic corridors. The City protects and enhances these scenic corridors by securing and thoughtfully landscaping parkway easements along major roadways, resulting in greater building setbacks and enhanced parkway appearance. General Plan policies that ensure these protections and enhancements include Community Design Element Policies 1.1, 1.2, 2.1, and 2.2.

The 2040 General Plan Update maintains policies and programs currently in effect that enhance parkways and assure viewshed protection. Parkway easements along image corridors help assure that the traveling public (and adjoining property owners) share in a quality landscaped parkway experience that enhances the image of these scenic corridors. Therefore, implementation of the General Plan Update will have a less than significant impact on scenic resources within the City.

***c) In nonurbanized 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?***

Visual character includes the existing look, feel, and quality of urbanized and natural areas. Large portions of the City are already developed with a full mix of land uses. Several areas in the already urbanized portions of the City are vacant and available primarily for in-fill development. North of the Union Pacific Railroad/Interstate-10 corridor, lands are essentially vacant, with the exception of two water reservoirs, wind turbines on the west slope of Edom Hill and electrical transmission towers. Lands in northeastern portion of the City at the intersection of I-10 and Bob Hope Drive are just beginning to develop. Overall, industrial and commercial development has been intensified as part of the 2040 General Plan in an effort to increase land use efficiencies and to achieve a greater return on the City's investment in infrastructure and services.

Policies and programs in the 2040 General Plan Update, specifically the Community Design Element, are consistent with and will enhance the existing character of development in the City. Streets will continue to be developed with curb, gutter, and landscaping to improve visual character along public rights-of-way. In addition, the City's Architectural Review Committee is responsible for reviewing architectural and landscaping design for all new commercial, industrial and multi-family residential projects, major commercial remodels and administrative design review applications on a project specific, case-by-case basis. In addition to demonstrating conformance with the Community Design Element and other design-related elements of the General Plan, all development projects will be required to adhere to the design standards and guidelines set forth in the City's Municipal Code. The proposed General Plan update will not conflict with applicable zoning and other regulations governing scenic quality. Visual character impacts in both urbanized and rural areas within the City as a result of the implementation of the proposed General Plan are, therefore, expected to be less than significant.

**d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.**

Light and glare impacts are associated with increased urbanization. Within the City limits, the majority of lands are developed, and daytime and nighttime skies are already affected to a limited extent by light and glare. The adoption of the 2040 General Plan Update will facilitate similar development patterns in the City to those that exist today.

Dark skies will diminish with more traffic, buildings, street lights and indoor illumination. The City Outdoor Lighting Ordinance (Chapter 9.89 of the Municipal Code) provides regulations for reducing light and glare caused by new development. The General Plan Update maintains policies and programs to preserve low lighting levels (Community Design Element Policy 2.3) and the Outdoor Lighting Ordinance, and requires all future development to develop according to these regulations.

In summary, the proposed General Plan update introduces additional policies and programs to protect against excessive lighting, and maintains policies and programs currently in effect that limit lighting. The City's Municipal Code prohibits light spillage onto neighboring properties. Therefore, implementation of the General Plan Update will have a less than significant impact on light and glare impacts within the City.

### **2.2.7 Mitigation Measures**

The 2040 General Plan Update will facilitate continued urbanization in areas that are undeveloped, but also provides goals, policies and programs to reduce aesthetic impacts associated with new development. The General Plan policies, specifically in the Community Design Element, the City's Municipal Code, and the project-specific design review process will control the aesthetics, mass, scale and bulk of new projects and redeveloped sites. Therefore, the proposed General Plan serves to avoid, minimize and mitigate the potential adverse effects of continuing urbanization of the City's visual and other aesthetic resources. Impacts to aesthetic resources are expected to be less than significant, and no mitigation measures are required. Nonetheless, the following measures derived from the proposed Community Design Element will further assure that impacts related to aesthetics are less than significant.

- AES-1** The City shall initiate a review of the 2002 Downtown Design Guidelines and shall update this document in a manner that builds from and extends the aesthetic, functionality and values reflected in the Community Design Element and the other General Plan elements.
- AES-2** The City-Wide Design Guidelines and Zoning Ordinance shall be periodically reviewed and, as appropriate, revised and updated to reflect the changing urban pattern and needs of the community.
- AES-3** The City shall require the incorporation of parks and open space into new development projects, and shall ensure that new parks and open space are developed in the early phases of development projects.
- AES-4** To preserve and restore the community's night sky, the City shall review and, as appropriate, update the Lighting Ordinance to require outdoor lighting to be shielded, limit in height, number, and intensity of fixtures to the minimum needed to provide sufficient security and identification on residential, commercial, and other development.
- AES-5** To ensure that development proposals are initiated consistent with the City's community design principles and values, the City shall maintain comprehensive development application packages that provide detailed information on and direct applicants to City design guideline documents, ordinances and other requirements, standards and guidelines.

- AES-6** Promote development plans that are based on the principles and values set forth in the Community Design and other General Plan Elements that define and support positive and unique qualities of existing and planned neighborhoods.
- AES-7** New residential development proposals shall be reviewed by City staff to assure compliance with applicable design standards and guidelines, and promote design features, such as entry statements, recreational facilities, neighborhood parks and schools, and landscaping along public rights-of-way.
- AES-8** Require the submittal of detailed landscape, architectural, and special signage designs for project entries and other design features in or adjacent to the public realm to assure compliance with community design standards and guidelines, and compatibility with the natural and built environments.
- AES-9** The City shall develop and adopt a program of Code compliance standards for existing and future neighborhoods, and enforce the program through regular Code Compliance inspections.
- AES-10** The Land Use Map and Zoning Ordinance shall regulate development at the boundaries of the planning area to assure the preservation of a well-defined, functional, or visual edge.
- AES-11** The development and design review process shall assess the adequacy of proposed design features and landscaping materials.

#### **2.2.8 Significance After Mitigation**

Policies and programs set forth in the General Plan and adherence to the City’s Municipal Code assure that impacts associated with implementation of the proposed General Plan that are related to aesthetic quality and resources will be less than significant.

#### **2.2.9 Cumulative Impacts**

Cumulative impacts are those resulting from past, present, and reasonably foreseeable future actions. The policies and programs set forth in the proposed General Plan update provide design regulation and guidance for future growth within the City, and augment the additional regulation under the City Municipal Code. While the potential exists for aesthetic resources to be degraded by future development, the General Plan update recognizes the importance of and vested interest in preserving and enhancing the community’s aesthetic resources. Therefore, any such impacts resulting from the implementation of the new General Plan will not make a considerable cumulative addition to regional impacts to these resources.

## 2.3 Agricultural and Forestry Resources

### 2.3.1 Introduction and Background

The project planning area has soils and topography that are not especially well suited for agricultural production. The Riverside County Important Farmland Map of 2016 has designated areas within the Planning Area as being “Urban and Built-up Land” and “Other Land”<sup>1</sup>. While the eastern fringes of the City in the vicinity of Da Vall Drive once hosted date palm and citrus cultivation in the first half of the 20<sup>th</sup> century, this has been the limit of agricultural activities in the City. Currently, there are no agricultural activities located in the City, although cannabis is being grown in the City but within enclosed buildings. This section assesses impacts on agricultural and forestry resources resulting from the proposed General Plan update.

### 2.3.2 Thresholds of Significance

Article 5, Section 15064 of the CEQA Guidelines provides guidance for determining the significance of the environmental effects caused by a project. Appendix G of the CEQA Guidelines provides a list of environmental factors that potentially may be affected by completion of a project. The Cathedral City General Plan update project would have a significant effect on Agricultural and/or Forestry Resources if it is determined that it would:

- a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract.
- c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- d) Result in the loss of forest land or conversion of forest land to non-forest use?
- e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

### 2.3.3 Regulatory Framework

#### Federal

##### Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) requires an evaluation of the relative value of farmland that could be affected by decisions sponsored in whole or part by the federal government. The FPPA is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, federal programs are administered to be compatible with State, local units of government, and private programs and policies to protect farmland (U.S. Department of Agriculture, 2015). For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements includes forestland, pastureland, cropland, or other land. As discussed below, the Proposed Project does not have the potential to impact farmlands.

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<sup>1</sup> California Department of Conservation, Division of Land Resource Protection, 2012.

## State

### California Land Conservation Act

As noted above, the California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is the State's primary program aimed at conserving private land for agricultural and open space use. It is a voluntary, locally administered program that offers reduced property taxes on lands whose owners place enforceable restrictions on land use through contracts between the individual landowners and local governments. There are no lands in the study area that are enrolled in the Williamson Act program. Therefore, land use restrictions imposed by the Williamson Act are not applicable to the Proposed Project.

### State Farmland Designations<sup>2</sup>

Prime Farmland: Prime Farmland is defined as land with quality soil and moisture supply that allows for production of high yield crops when managed by modern farming methods. These lands are best suited for producing food crops, feed, forage, fiber, and oilseed crops. The best use of the land is for cropland, pastureland, rangeland, and forestland, however urban uses are not recommended.

Farmland of Local Importance: Farmlands of Local Importance have the soil quality and characteristics of Prime Farmland or Statewide Important Farmlands, but lack available irrigation water. These lands may produce crops important to Riverside County, but are not listed as Unique Farmland Crops.

Unique Farmlands: This type of farmland has reduced soil quality or characteristics from Prime Farmland or Statewide Important Farmlands, but can still be used for high value food and fiber crops. These lands are capable of producing crops such as citrus, olives, and avocados.

Statewide Important Farmlands: These lands are similar to Prime Farmlands; however, they do not exhibit as good soil as Prime Farmland. Statewide Important Farmland still has a good combination of physical and biological characteristics for producing similar crops as Prime Farmlands, and is available for cropland, pastureland, rangeland, or forestland.

## Regional and Local

### Riverside County General Plan/Western Coachella Valley Area Plan

The Proposed Project is located within the Riverside County *Western Coachella Valley Area Plan* (WCVAP), which is a sub-area of the Riverside County General Plan and Vision Statement (Riverside County 2015). The Vision Statement details the physical, environmental, and economic characteristics that the County aspires to achieve by the year 2035. Using the Vision Statement as the primary foundation, the General Plan establishes policies to guide development and conservation within the entire unincorporated County territory, while the Area Plan details standards and policy direction specifically for Eastern Coachella Valley.

The WCVAP Land Use Plan depicts the geographic distribution of land uses within the plan area. These land uses derive from the five General Plan Foundation Component land uses: Open Space, Agriculture, Rural, Rural Community and Community Development. The Plan does not recognize agricultural within the Plan's boundary.

### Riverside County Land Use Ordinance

The Riverside County Land Use Ordinance (Ordinance 348.4802) provides for land use planning and zoning regulations and related functions of Riverside County. The Land Use Ordinance establishes zoning districts, standards, and regulations to guide development within the County. According to Ordinance Article XIV, Section 14.2, water works facilities, both public and private, intended primarily for the production and distribution of water for irrigation purposes are permitted within this district, as are public utility facilities.

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<sup>2</sup> Riverside County Important Farmland 2008", prepared by California Department of Conservation, Division of Land Resource Protection, prepared September 2009

### City of Cathedral City

Neither the current nor the proposed General Plan include policies that address conventional agriculture. As discussed below, prevailing soils and the lack of access to irrigation water have greatly limited the viability of soils-based agricultural activity in the City. Early date and citrus cultivation occurred near the City's eastern edge and relied upon the pumping of groundwater, which is no longer supported by groundwater managers in this portion of the valley.

#### **2.3.4 Environmental Setting**

No agricultural lands occur along or in proximity to the City. Agriculture was the first large-scale land use to occur in the Coachella Valley dating back to the early 20<sup>th</sup> century. Early crops favored by farmers included dates, citrus and even cotton, and valley growers have since expanded to make the Coachella Valley a major producer of table grapes and truck crops<sup>3</sup>. While agriculture constituted the largest conversion of wild lands in the valley, over time land values have increased with continuing development pressure.

From 1948 to 1999, the number of irrigated acres increased from about 23,000 to 72,800 acres.<sup>4</sup> The growth in agriculture was, at least in part, facilitated by the completion of the Coachella Branch of the All-American Canal by the U.S. Bureau of Reclamation in 1949. The canal delivered imported Colorado River water to the eastern Coachella Valley for irrigation purposes, and this supplemental water source made additional agricultural activity possible and relieved pressure on the lower valley aquifer. In 1999, agriculture in the Coachella Valley used 333,300 acre-feet of water for crop irrigation and other agricultural purposes.

More than 2/3rds of Coachella Valley farmland is irrigated in part with Colorado River water delivered via the Coachella Canal. CVWD delivered 280,000 acre-feet to 66,431 acres in 2014, with a gross production value of \$730,487 with irrigable lands in the Coachella Valley totaling 76,354 acres.<sup>5</sup> Agriculture remains the third largest employment sector in the region and represents a mainstay of the broader Riverside County economy, ranking in the top ten among California counties in total value of agricultural production.

Riverside County's leading agricultural products are fruit and nut crops, livestock products, and vegetable products<sup>6</sup>. Major Coachella Valley products include dates, grapes, citrus, and a variety of other fruits and vegetables. Agricultural lands are designated by the State's Department of Conservation as "prime farmland," "statewide important farmland," "unique farmland," and "local important farmland," based on their soil characteristics, climatic conditions, water supplies, and suitability for production.

In the City and vicinity, lands are no longer in commercial agriculture. Historic date gardens have been converted to residential subdivisions, and in some places these trees have been maintained as ornamental landscape specimens. There are no forestry resources in proximity to the project area, the nearest such resources being in the San Jacinto Mountains.

#### **2.3.5 Existing Conditions**

Agriculture has been a major source of economic activity in the Coachella Valley since the turn of the 20<sup>th</sup> century. The eastern portions of the Coachella Valley provide excellent soils, flat topography, abundant sunshine, and

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<sup>3</sup> "Truck crops" refers to the horticultural practice of growing one or more vegetable crops on a large scale for shipment to distant markets.

<sup>4</sup> "Coachella Valley Water Management Plan," Coachella Valley Water District, November 2002.

<sup>5</sup> Coachella Valley Water District 2014 Crop Report.

<sup>6</sup> Summary of County Agricultural Commissioners' Reports, Gross Values by Commodity Groups, California 1995-2000, as compiled and tabulated by the Southern California Association of Governments (SCAG). Does not include all crops/products produced.

available water resources, making it a contributor to the State's agricultural production. The date palm was introduced to the Coachella Valley, and has historically been a staple crop for the region. Other crops, such as grapes, citrus, vegetables, turf production and ornamentals have also been farmed in the region. Land available for agricultural production continues to be threatened by increased urbanization<sup>7</sup>

As noted, there are no longer any soils-based agricultural areas in the City or vicinity. The new, legal cannabis industry has attracted growers to the City and other communities, but all of their activities occur within enclosed buildings where the cultivation of these crops is carefully controlled.

#### Williamson Act Lands

Lands under the Williamson Act, or California Land Conservation Act, are agricultural lands that allow special tax assessment. These lands are taxed on the basis of agricultural production rather than market value. The goal of the Williamson Act is to protect agricultural land from being sold for development. There are no lands under Williamson Act contracts that would be impacted by the implementation of the proposed General Plan.

### 2.3.6 Project Impacts

- a) *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.***

There are no prime or unique farmlands, or farmlands of statewide importance in the City. Nor will the implementation of the proposed General Plan impact farmlands of any type.

- b) *Conflict with existing zoning for agricultural use, or a Williamson Act Contract.***

There are no lands that are zoned for agricultural use in the City nor are there any lands that are under a Williamson Act contract. Therefore, the implementation of the proposed general Plan will not impact such lands.

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

There are no forest lands within the City nor are their lands zoned for forestry or would be re-zoned for such use as a consequence of the implementation of the proposed General Plan.

- d) *Result in the loss of forest land or conversion of forest land to non-forest use?***

The implementation of the proposed General Plan will not result in the loss of forestry land or the conversion of such lands to non-forestry uses.

- 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?***

The implementation of the proposed General Plan may affect future land uses in the City. However, it will not result in the conversion of any designated farmlands to non-agricultural uses, nor will it affect forestry lands.

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<sup>7</sup> California Farmland Conversion Report 2015, prepared by the California Natural Resources Agency/Department of Conservation. September 2015.

### **2.3.7 Mitigation Measures**

The Proposed Project will not directly or indirectly require conversion of farmland to non-agricultural uses, and no new indirect pressures are created by the Project that might encourage agricultural landowners to sell or develop agricultural lands. Therefore, no mitigation is required.

### **2.3.8 Significance After Mitigation**

There will be no residual impacts to agricultural or forestry resources as a consequence of implementing the proposed General Plan.

### **2.3.9 Cumulative Impacts**

There are no forest resources in the project study area. Therefore, the Proposed Project does not contribute to any cumulative projects related to forest resources. No agricultural land conversion would occur, and the Proposed Project would not contribute to any cumulatively considerable impacts related to agricultural resources.

## 2.4 Air Quality and Greenhouse Gases

### 2.4.1 Introduction

The following section describes the existing air quality greenhouse gas conditions in the Coachella Valley, and analyzes the potential impacts associated with buildout of the Cathedral City General Plan. A variety of local and regional data and information, ranging from research and analysis conducted for the project site, to regional-scale planning and environmental documents, have been used in researching and analyzing the project and its potential effects on air quality, GHG emissions and climate change. An Air Quality and Greenhouse Gas Report was prepared for the project and is provided in Appendix B of this EIR.

### 2.4.2 Thresholds of Significance

The following significant thresholds or criteria are not strictly those recommended in §15064.7 of the CEQA Guidelines; rather, they are derived from Appendix G of the Guidelines, and are used to determine if and to what extent a project may have a potentially significant impact on air quality and greenhouse gases.

The project would have a significant effect to air quality if the Proposed Project would:

- 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.

The project would have a significant effect on greenhouse gases if the Proposed Project were to:

- 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.

### 2.4.3 Regulatory Framework

#### AIR QUALITY

##### Federal and State

Federal and state agencies have adopted air quality standards for a variety of pollutants. The Federal Clean Air Act (FCAA) requires the U.S. Environmental Protection Agency (U.S. EPA) to identify National Ambient Air Quality Standards (NAAQS), or “national standards” to protect public health and welfare. The California Clean Air Act (CCAA) became effective on January 1, 1989 and mandated health-based air quality standards at the state level. The California Air Resources Board (CARB) is responsible for enforcing state standards, which are generally more stringent than federal standards. One of the ways standards are applied is through State Implementation Plans (SIP), which are prepared to assist regional air quality management districts in meeting the federal and state ambient air quality standards in accordance with the deadlines specified in the Federal Clean Air Act (CAA) and emission reduction targets of the CCAA.

### Criteria Pollutants

Federal and state air quality standards established for specific pollutants, which are called “criteria pollutants,” are designed to protect the general population and especially that segment of the population that is most susceptible to respiratory distress or infection, including the elderly, children, asthmatics, or those weak from disease or illness. The following air pollutants are collectively known as criteria air pollutants and are defined as those pollutants for which established air quality standards have been adopted by federal and state governments:

*Ozone (O<sub>3</sub>)* is a pungent, colorless, toxic gas, and a component of photochemical smog. It is formed when byproducts of combustion react in the presence of ultraviolet sunlight. This process takes place in the atmosphere where oxides of nitrogen combine with reactive organic gases, such as hydrocarbons. Exposure to ozone can result in diminished breathing capacity, increased sensitivity to infections, and inflammation of the lung tissue. Children and people with pre-existing lung disease are most susceptible to the effects of ozone.

*Carbon Monoxide (CO)* is a colorless, odorless, toxic gas and a byproduct from the partial combustion of fossil fuels, most notably from automobiles and other motor vehicles. Carbon monoxide passes through the lungs directly into the blood stream and reduces the amount of oxygen reaching the vital organs, such as the heart, brain and tissues. In high concentrations, carbon monoxide can contribute to the development of heart disease, anemia, and impaired psychological behavior. Individuals that have heart and blood diseases, smokers, babies in utero, and people with chronic hypoxemia are most susceptible to the effects of CO. The SSAB is in non-attainment for the federal 8-hour O<sub>3</sub> standard.

*Nitrogen Oxide (NO<sub>x</sub>)* includes Nitric oxide (NO) and Nitrogen dioxide (NO<sub>2</sub>), which are the primary oxides of nitrogen, and combined are known as nitrogen oxides. These oxides are produced at high temperatures during combustion as byproducts of motor vehicles, power plants, and off-road equipment. NO<sub>x</sub> contributes to the formation of ozone serving as the primary receptor of ultraviolet light and initiating the photochemical reaction. Short-term exposure to nitrogen dioxide can result in airway constriction, diminished lung capacity, and is highly toxic by inhalation. Populations living near roadways are more likely to experience effects of nitrogen oxides due to elevated exposure to motor vehicle exhaust. The SSAB is in attainment for NO<sub>2</sub>.

*Sulfur Dioxide (SO<sub>2</sub>)* results from the combustion of high-sulfur content fuels, such as coal and petroleum. Sources include motor vehicle fuel combustion, chemical manufacturing plants, and sulfur recovery plants. Sulfur dioxide is a colorless, pungent, extremely irritating gas that can cause airway constriction and severe breathing difficulties in asthmatics. High levels of exposure can cause fluid accumulation in the lungs, damage to lung tissue, and sloughing off of cells lining the respiratory tract. The SSAB is in attainment for SO<sub>2</sub>.

*Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)* consist of fine suspended particles of ten microns or smaller in diameter, and are the byproducts of road dust, sand, diesel soot, windstorms, and the abrasion of tires and brakes. The elderly, children and adults with pre-existing respiratory or cardiovascular disease are most susceptible to the effects of PM. Elevated PM<sub>10</sub> and PM<sub>2.5</sub> levels are also associated with an increase in mortality rates, respiratory infections, occurrences and severity of asthma attacks and hospital admissions. The SSAB is a non- attainment area for PM<sub>10</sub> and is classified as attainment/unclassifiable for PM<sub>2.5</sub>.

*Volatile Organic Compounds (VOC)* are also known as Reactive Organic Gas (ROG). This class of pollutants has no state or federal ambient air quality standards and is not classified as criteria pollutants; however, they are regulated because they are responsible for contributing to the formation of ozone. They also contribute to higher PM<sub>10</sub> levels because they transform into organic aerosols when released into the atmosphere. VOCs pose a health threat when people are exposed to high concentrations. Benzene, for example, is a hydrogen component of VOC emissions known to be a carcinogen.

*Lead (Pb)* occurs in the atmosphere as particulate matter resulting from the manufacturing of batteries, paint, ink, and ammunition. Exposure to lead can result in anemia, kidney disease, gastrointestinal dysfunction, and neuromuscular and neurological disorders. Babies in utero, infants, and children are especially susceptible to health risks associated with exposure to lead by impacting the central nervous system and cause learning disorders. The SSAB is in attainment for lead.

The air quality of a particular locale is considered to be in attainment if the measured ambient air pollutant levels for O<sub>3</sub>, CO, SO<sub>2</sub> (1-hour and 24-hour), NO<sub>2</sub>, and PM<sub>10</sub> and PM<sub>2.5</sub> are not exceeded and all other standards are not equaled or exceeded at any time in any consecutive three-year period. Attainment also assumes the national standards (other than O<sub>3</sub>, PM<sub>10</sub>, and those based on annual averages or arithmetic mean) are not exceeded more than once per year. The O<sub>3</sub> standard is in attainment when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

The following table shows the state and national ambient air quality standards for criteria pollutants.

**Table 2.4-1  
 State and National Ambient Air Quality Standards**

Pollutant	State Standards		National Standards	
	Averaging Time	Concentration	Averaging Time	Concentration
Ozone (O <sub>3</sub> )	1-hour	0.09 ppm	1-hour	None
	8-hour	0.07 ppm	8-hour	0.070 ppm
Carbon Monoxide (CO)	1-hour	20.0 ppm	1-hour	35.0 ppm
	8-hour	9.0 ppm	8-hour	9.0 ppm
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour	0.18 ppm	1-hour	0.10 ppm
	AAM	0.030 ppm	AAM	0.053 ppm
Sulfur Dioxide (SO <sub>2</sub> )	1-hour	0.25 ppm	1-hour	0.075 ppm
	24-hour	0.04 ppm	24-hour	0.14 ppm
	AAM	None	AAM	0.03 ppm
Particulate Matter (PM <sub>10</sub> )	24-hour	50 µg/m <sup>3</sup>	24-hour	150 µg/m <sup>3</sup>
	AAM	20 µg/m <sup>3</sup>	AAM	None
Particulate Matter (PM <sub>2.5</sub> )	AAM	12 µg/m <sup>3</sup>	AAM	12 µg/m <sup>3</sup>
	24-hour	None	24-hour	35 µg/m <sup>3</sup>
Lead	30 day Avg.	1.5 µg/m <sup>3</sup>	3 month Avg.	0.15 µg/m <sup>3</sup>
Visibility Reducing Particles	None	None	None	None
Sulfates	24-hour	25µg/m <sup>3</sup>	None	None
Hydrogen Sulfide	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Source: California Air Resources Board, 1/3/19.

Notes: ppm = parts per million; ppb= parts per billion; µg/ m<sup>3</sup> = micrograms per cubic meter of air; AAM = Annual Arithmetic Mean.

**Toxic Air Contaminants (TAC)**

The US EPA regulates TACs through technology-based requirements that are implemented by state and local agencies. California regulates TACs through the air toxics program and the Air Toxics “Hot Spots” Information and Assessment Act.<sup>1</sup> The CARB works alongside the Office of Environmental Health Hazard Assessment (OEHHA) to identify TACs, and adopt Air Toxic Control Measures (ATCMs) to reduce the identified TACs. Where there are federal standards, CARB must, at minimum, adopt the standards established by the US EPA.

<sup>1</sup> AB 2588.

## Regional and Local

Regional and local agencies have also assumed some responsibility for assuring that state and federal air quality standards are achieved. For the Coachella Valley, the South Coast Air Quality Management District (SCAQMD) is responsible for establishing air quality measurement criteria and relevant management policies for the Salton Sea Air Basin (SSAB).

The 2003 PM<sub>10</sub> Coachella Valley State Implementation Plan (CVSIP) was jointly developed by the SCAQMD, Coachella Valley Association of Governments (CVAG) and its member cities and was approved by the USEPA. The 2003 PM<sub>10</sub> CVSIP updated the 1990 plan, which was drafted as a requirement of the federal Clean Air Act to demonstrate expeditious attainment of PM<sub>10</sub> standards.<sup>2</sup> On April 18, 2003, USEPA approved the updated CVSIP.

The SSAB, including the Coachella Valley, is subject to the provisions of the SCAQMD Rule Book,<sup>3</sup> which sets forth policies and other measures designed to meet federal and state ambient air quality standards. These rules, along with SCAQMD’s 2016 Air Quality Management Plan are intended to satisfy the planning requirements of both the federal and state Clean Air Acts. The SCAQMD also monitors daily pollutant levels and meteorological conditions throughout the District. (See Appendix B: Air Quality and Greenhouse Gas Report for annual monitoring data).

The SCAQMD has established thresholds for certain criteria pollutants. Based on the District’s emission thresholds for criteria pollutants, any project would be considered to have significant impacts to air quality if the daily emissions exceed the values shown in the table below during construction or operation:

**Table 2.4-2  
 Emissions Thresholds for SCAQMD**

<b>Criteria Pollutant</b>	<b>Daily Threshold (pounds)</b>
Carbon Monoxide (CO)	550
Oxides of Nitrogen (NOx)	100
Volatile Organic Compounds (VOC)	75
Oxides of Sulfur (SOx)	150
Particulate Matter (PM10)	150
Particulate Matter (PM2.5)	55

Source: SCAQMD daily thresholds for construction and operation within the Coachella Valley, April 2019.

### Cathedral City General Plan

The following relevant policies of the General Plan specifically address air quality:

#### Air Quality and Climate Stability Element

**Goal 1:** Preservation and enhancement of local and regional air quality to assure the long-term protection of the community’s health and welfare.

**Policy 1 :** The City shall be proactive in regulating local pollutant emitters and shall cooperate with Coachella Valley Association of Governments and the South Coast Air Quality Management District to assure compliance with air quality standards.

<sup>2</sup> 2003 Coachella Valley PM<sub>10</sub> State Implementation Plan, August 1, 2003.

<sup>3</sup> South Coast Air Quality Management District Rules and Regulations, Adopted February 4, 1977.

**Policy 2 :** The City shall fully implement dust control ordinances, and coordinate and cooperate with local, regional, and federal efforts to monitor, manage, and reduce the levels of major pollutants affecting the City and region, with particular emphasis on PM<sub>10</sub> emissions.

**Policy 3:** City land use planning efforts shall assure that sensitive receptors are separated from polluting point sources, to the greatest extent practicable.

**Policy 4:** Development proposals brought before the City shall be reviewed for their potential to adversely impact local and regional air quality, and shall be required to mitigate any significant impacts.

**Policy 5:** The City shall encourage and promote the use of clean alternative energy sources for transportation, heating and cooling, lighting and other power needs.

**Policy 6:** The City shall encourage and support the development of facilities and projects that facilitate and enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle and LSEV paths and lanes, and community-wide multi-use trails.

**Policy 7:** The City shall promote the expanded availability of mass transit services, coordinating with Sunline Transit Authority to link residential, commercial and resort businesses, and employment centers with the City's residential neighborhoods and nearby communities.

**Policy 8:** The City shall continue to implement effective street sweeping and post-windstorm cleanup programs to reduce the cumulative impacts of blowsand and nuisance dust resulting from construction activities, natural processes, and other sources.

**Policy 9:** The City shall promote public educational programs that describe the causes of air pollution, encourage the use of alternative energy sources, and recommend methods for reducing the impacts of blowsand.

#### Environmental Justice Element

**Goal 6:** Integrated air quality, land use, and transportation planning, policy and infrastructure that reduces emission of criteria pollutants and greenhouse gases from mobile and stationary sources.

**Policy 6.1:** Improve or maintain air quality for the promotion of population and environmental health.

## **GREENHOUSE GAS**

### **Federal and State**

#### U.S. Environmental Protection Agency

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address global climate change. The USEPA implements several voluntary programs that help to reduce GHG emissions that focus on energy efficiency, renewable energy, methane and other non-CO<sub>2</sub>e gases, agricultural practices, and implementation of technologies to achieve GHG reductions. These voluntary programs include: the State Climate and Energy Partner Network, which encourages the exchange of information between federal and state agencies regarding climate and energy; the Climate Leaders program for companies; the Energy Star® labeling system for energy-efficient products; and the Green Power Partnership for organizations interested in buying green power.

In 2009, the USEPA issued a Final Rule for mandatory monitoring and reporting of GHG emissions by fossil fuel suppliers, industrial gas suppliers, direct GHG emitters and manufacturers of heavy-duty and off-road vehicles and vehicle engines that emit 25,000 metric tons or more of carbon dioxide equivalent per year. Implementation of 40 CFR Part 98 is referred to as the Greenhouse Gas Reporting Program (GHGRP).

Especially relevant, the USEPA adopted a Final Endangerment Finding for the six defined GHGs. This Endangerment Finding is required for the USEPA to regulate GHG emissions under Section 202(a)(1) of the Clean Air Act (CAA). In, 2010, the USEPA issued a Final Rule (GHG Tailoring Rule) that establishes a common-sense approach to addressing greenhouse gas emissions from stationary sources under CAA permitting programs, including the Prevention of Significant Deterioration (PSD) and title V Operating Permit Programs. The Tailoring Rule set initial emission thresholds - known as Steps 1 and 2 of the Tailoring Rule - for PSD and Title V permitting based on carbon dioxide equivalent (CO<sub>2e</sub>) emissions.

In these phases, new construction projects that exceed a CO<sub>2e</sub> threshold of 100,000 tons per year and modifications of existing facilities that increase CO<sub>2e</sub> emissions by at least 75,000 tons per year are subject to permitting requirements. Additionally, operating facilities that emit at least 100,000 tons per year are subject to Title V permitting requirements for GHGs. New and existing industrial facilities that meet or exceed that threshold require a permit under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs. Step 3 of the GHG Tailoring Rule, issued on June 29, 2012, continued to focus GHG permitting on the largest emitters by retaining the permitting thresholds that were established in Steps 1 and 2. Step 3 revised the plantwide applicability limitations (PAL) regulations to allow a source that emits or has the potential to emit at least 100,000 tons per year of CO<sub>2e</sub>, but that has minor source emissions of all other regulated NSR pollutants, to apply for a GHG PAL while still maintaining its minor source status<sup>4</sup>.

#### Assembly Bill 1493 – The Pavley Bill

California was the first state to establish regulations that require the reduction of emissions of GHGs from motor vehicles. On September 24, 2004, the California legislature adopted the Pavley Bill that requires all motor vehicles of 2009 vintage or later to reduce their greenhouse gas emissions by about 30% by the year 2016.

#### Assembly Bill 32 - California Global Warming Solutions Act of 2006

On June 1, 2005 Governor Arnold Schwarzenegger issued executive order S-3-05, which calls for reduction in GHG emission to 1990 levels by 2020 and for an 80 percent reduction below 1990 levels by 2050. Also known as the California Global Warming Solutions Act of 2006 (AB 32) was adopted by the state legislature in 2006. It sets forth a program to achieve 1990 emission levels by 2020 and requires CARB to proclaim 1990 GHG emissions and develop a Scoping Plan, which sets forth GHG reduction methods. CARB has reported that 1990 GHG emissions totaled 427 million metric tons (MMT) for the state of California; CARB adopted a GHG scoping plan on December 11, 2008. The Scoping Plan includes a cap and trade program, green building strategies, recycling and waste reduction, and Voluntary Early Actions and Reductions. In November 2017, CARB released the 2017 Climate Change Scoping Plan that not only discusses the 2030 targets, but how to substantially advance toward the State's 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

#### Senate Bill 375

California SB 375 was signed by the Governor in September 2008 and is intended to at least in part implement greenhouse gas reduction targets set forth in AB 32 by setting regional “caps” on the GHGs emitted by the transportation sector. The bill encourages regional land use planning to reduce vehicle miles traveled and requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy as part of their Regional Transportation Plans. The applicable MPO for the Coachella Valley is the Southern California Association of

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<sup>4</sup> “Clean Air Act Permitting for Greenhouse Gases,” United States Environmental Protection Agency. Website. [www.epa.gov](http://www.epa.gov). Accessed June 2019.

Governments (“SCAG”), which adopted its most recent Regional Transportation Plan and sustainable communities strategy in April of 2016. The current reduction targets from SCAG’s RTP and SCS are 9% reduction by 2020 and a 16% reduction by 2035, as compared to 2005 emissions levels.

#### Senate Bill 32

More recently, Executive Order B-30-15, was issued by Governor Brown on April 29, 2015 establishing a new California goal to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 ensuring the state will continue its efforts to reduce carbon pollution. Most recently, this 40% target was codified through Senate Bill 32 (2016), which adds section 38566 to the Health and Safety Code and requires that CARB ensure statewide GHG emissions meet the 40% reduction target no later than Dec. 31, 2030.

#### Green Building Code

In January 2010, the State of California adopted the California Green Building Standards Code (CALGreen) per CCR Title 24, Part 11, which establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of minimum guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels. The City has adopted the Green Building Standards Code

### **Regional and Local**

#### Riverside County Climate Action Plan

In December 2015, the County of Riverside approved a Climate Action Plan (CAP)<sup>5</sup>. The CAP, which was revised in July 2018, establishes goals and policies that incorporate environmental responsibility into its daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste reduction, economic development and open space and natural habitats to further their commitment towards reducing GHG emissions.

In order to reach the reduction target, the County of Riverside would need to implement various state policies and the additional local reduction measures described in the County’s CAP. These measures encourage energy efficiency and renewable energy in buildings, transit-oriented planning, water conservation, and increased waste diversion. Riverside County does not have project- or region-specific thresholds for GHG emissions at this time. (See Section 2.4.5 for current County reduction targets).

#### Cathedral City Climate Action Plan, Energy Action Plan, and GHG Inventory

The City of Cathedral City completed its first Climate Action Plan in May 2013 in an effort to address climate change at the local level by reducing greenhouse gas emissions within its own operations and within the overall community. The Climate Action Plan provides a framework for the development and implementation of policies and programs that will reduce the City’s emissions and is tracked via the City’s Greenhouse Gas Inventory. In addition to the Climate Action Plan, the City prepared an Energy Action Plan (2013) to identify opportunities for cost savings through energy efficiency and actions necessary to meet the City’s future energy needs, consistent with the energy policies set forth by the State of California. (See Section 2.4.5 for current City reduction targets).

#### Green for Life

The City participated in the Green for Life Initiative of the Coachella Valley Association of Governments (CVAG). It is a regional approach to achieving energy reductions, and includes: 1) a Green Building Program, 2) Climate Action Plan, 3) Energy Action Plan, 4) a benchmarking policy, energy management software installation and training, and a commissioning and retro-commissioning policy. An important component of the Green For Life Program is benchmarking and utility management, which includes a facilities inventory and thorough review of existing energy benchmarking policies.

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<sup>5</sup> “County of Riverside Climate Action Plan,” Riverside County Planning Department. July 17, 2018

## **Cathedral City General Plan**

The following relevant policies of the General Plan specifically address greenhouse gases and climate change:

### Air Quality and Climate Stability Element

**Policy 10:** The City shall continue to implement and update policies, regulations, and action plans that promote climate stability and greenhouse gas emission reductions, including but not limited to the Climate Action Plan, Energy Action Plan, Greenhouse Gas Inventory and Green for Life program.

### Healthy and Sustainable Community Element

**Goal 2:** A safe and resilient city that maximizes sustainability and minimizes community health and safety risks.

#### **Policy 2.2**

The City shall promote a sustainable future through reductions in greenhouse gas emissions, alternatives to gas-powered vehicles, implementation of green building standards, reduced waste, and conservation of energy and water.

### Community Design Element

**Goal 3:** A community where principles of sustainability and environmental stewardship are an inherent and fully integrated part of the design and development of the entire city.

**Policy 3.1:** The City shall apply the principles of sustainability in all aspects of community design, development and regulation on both a public and private sector level.

**Goal 5:** A community-wide multi-modal transportation system that addresses the City's desire to facilitate all modes of travel and reduce dependency on the use of motor vehicles, while helping to meet the City's other community design goals.

**Policy 5.1:** As many services and activity areas as possible, including commercial, professional and health services, should be located with convenient multi-modal access, including within easy walking or biking distance of transit stops.

### Open Space and Conservation Element

**Goal 1:** The appropriate use of energy and mineral resources to assure that both limited and renewable resources are sustainable in the long-term.

**Policy 1:** Encourage conservation in the planning and construction of urban uses and in the regional transportation system.

**Policy 2:** The General Plan and other City documents, such as the 5 Year Capital Improvement Program, shall assure an efficient circulation system and land use pattern in the City which minimizes travel.

**Policy 3:** Support long-term strategies, consistent with state and federal legislation and regulations, that assure affordable, reliable and environmentally sustainable production and delivery of electrical power to the community.

**Policy 4:** Continue to proactively support and participate in local and regional efforts to develop and operate alternative systems that take advantage of local wind, solar and other renewable resources.

**Policy 5:** To further reduce nonrenewable energy use in transportation, the City shall facilitate provision of information on bike and NEV routes, bus routes and the transit network, ridesharing and ride-booking services to residents and businesses.

**Policy 6:** The City shall continue to explore and update policies that increase energy efficiency and the use of alternative sources for the economic, environmental and social benefit of the City.

#### 2.4.4 Regional Environmental Setting

### AIR QUALITY

Air pollution is any chemical, physical or biological process that modifies the chemistry and other characteristics of the atmosphere. The primary contributor to air pollution is the production of byproducts from the combustion of fossil fuels containing a number of air polluting substances. These emissions are responsible for the poor air quality that is evident in industrial centers and elsewhere worldwide.

Topographic or geomorphic conditions in the Coachella Valley have had a profound effect on and are an integral part of climate and the diverse environments encompassed in the Coachella Valley. The mountains create a “rain shadow”, effectively isolating the valley from the prevailing cooler and wetter marine conditions along the coast, and creating a dry, subtropical desert environment. The area is subject to daily temperature extremes ranging from approximately 30°F to 80°F in winter and summer daytime temperatures that range between 75°F and 120°F. In the surrounding mountains, temperatures are generally cooler than those on the valley floor, with an approximate 5°F decrease per 1,000 feet of elevation increase. In general, the Valley floor is characterized by low humidity and rainfall, and a high percentage of days of sunshine.

Winter brings the majority of rainfall, although occasional intense storms occur in late summer or early fall that can make substantial contributions to annual rainfall. These are sometimes intense storms that result in rainfall on surrounding mountain slopes rather than on the Valley floor. Mean annual rainfall averages between 2 to 4 inches on the upper desert floor and about fifteen (15) inches in the nearby mountains.

When the desert floor heats up and the Valley air mass rises, the resulting thermal low pressure draws in cooler, denser marine air from the west that is funneled through the narrow San Geronio Pass. This effect produces strong and sustained winds, which constitute a major influence on the Valley’s climate. As they pass through the valley, these winds often lift and transport large quantities of sand and dust, impacting visibility and air quality.

Air inversions can become a layer of stagnant air is trapped near the ground that is loaded with pollutants from motor vehicles and other sources. Inversions occasionally occur in the Coachella Valley due to local geological and climatic conditions. Inversions create conditions of haziness caused by suspended water vapor, dust, and a variety of chemical aerosols. Due to local climatic conditions, inversion layers generally form 6,000 to 8,000 feet above the desert floor.

The Coachella Valley, including the project planning area, is located within the Salton Sea Air Basin (SSAB), which is monitored and regulated by the South Coast Air Quality Management District (SCAQMD). Monitoring stations within the SSAB are located in Indio and Palm Springs and have provided a record of air quality conditions for the region since 1985 and 1987, respectively. Historically, air quality in the SSAB has not exceeded state or federal standards for carbon monoxide (CO<sub>2</sub>), nitrogen dioxides (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), reactive organic gases (ROG) or lead (Pb).

Pollutants of primary concern in the Coachella Valley are ozone (O<sub>3</sub>) and particulate matter (PM<sub>10</sub>). The SSAB is in non-attainment for ozone (O<sub>3</sub>) and PM<sub>10</sub>. For national area designations, the Coachella Valley is in non-attainment (Severe-15) for the federal 8-hour ozone standard, and serious non-attainment for the federal 24-hour PM<sub>10</sub> standard.

State standards for the Coachella Valley similarly designate a non-attainment status for ozone and PM<sub>10</sub>. These pollutants pose the most significant threat to public health and may result in diminished breathing capacity, increased sensitivity to lung infections, inflammation of the lung tissue, and other respiratory distress.

#### PM<sub>10</sub> Emissions

Historically, PM<sub>10</sub> levels in the Coachella Valley are elevated due to fugitive dust emissions from grading and construction activities, agricultural practices, and strong wind. The finer materials, including sand and silt, can be picked up and transported by the wind and are referred to as “blowsand”. PM<sub>10</sub> particles associated with blowsand are of two types: (1) natural PM<sub>10</sub> produced by direct particle erosion and fragmentation, and (2) secondary PM<sub>10</sub> whereby sand deposited on roadways is further pulverized by motor vehicles and then re-suspended in the air by those vehicles. The project is located in a PM<sub>10</sub> non-attainment area for the state and federal PM<sub>10</sub> standard.

The Coachella Valley had become eligible for redesignation as attainment due to the annual average PM<sub>10</sub> concentrations meeting the revoked federal standard. On February 25, 2010 the California Air Resources Board approved the Coachella Valley PM<sub>10</sub> Redesignation Request and Maintenance Plan from serious non-attainment to attainment for the PM<sub>10</sub> National Ambient Air Quality Standard under CAA Section 107. The PM<sub>10</sub> data from the Coachella Valley monitors shows attainment of the PM<sub>10</sub> 24-hour NAAQS after the removal of the flagged high-wind exceptional events, for which SCAQMD supporting documentation will be submitted and subsequent U.S. EPA approval will be required.

However, U.S. EPA has requested that SCAQMD conduct additional ambient monitoring in the southeastern portion of the Coachella Valley before the redesignation can be considered. This new station has been in operation since 2013 in the community of Mecca, and redesignation will be revisited upon analysis of the required 3 full years of data. As of January 2019, the Environmental Protection Agency has not re-designated the PM<sub>10</sub> classification for the Coachella Valley<sup>6</sup>. The Coachella Valley continues to exceed the state standard and is in a serious non-attainment area for PM<sub>10</sub>.

SCAQMD employs measures to reduce particulate matter in the District, sets forth new measures that could further reduce particulate matter, and lists those new measures that need further evaluation prior to implementation. In addition, applicable state code and AQMD Rules, including Rule 403 (Fugitive Dust), enforce fugitive dust compliance for all activities within the SSAB.

#### Ozone Emissions

Under the Federal Clean Air Act, the Coachella Valley portion of the SSAB is classified as a “severe-15” O<sub>3</sub> non-attainment area for the 8-hour state standard, which means that the region must come into compliance with Federal ozone standards by December 31, 2027. With future emission controls, the Coachella Valley will achieve the 2008 8-hour federal O<sub>3</sub> standard by 2024.

SCAQMD studies indicate that most O<sub>3</sub> is transported to the Salton Sea Air Basin from the upwind South Coast Air Basin (SCAB). It is difficult to quantify the amount of ozone contributed from SCAB; however, reduced O<sub>3</sub> concentration in the SSAB depends, in part, upon reduced ozone emissions in the South Coast Air Basin.

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<sup>6</sup> “EPA Green Book Designated Non-attainment Areas for All Criteria Pollutants,” Accessed January 2019.

## GREENHOUSE GAS

Air pollution is a chemical, physical or biological process that modifies the chemistry and other characteristics of the atmosphere. The primary contributor to air pollution is the burning of fossil fuels used in transportation, power and heat generation, and industrial processes. The byproducts from the combustion of fossil fuels can contain a number of air polluting substances. These emissions are responsible for the poor air quality that is evident in industrial centers worldwide.

Some air polluting agents are also greenhouse gases (GHG), such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases (hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride), which are released into the atmosphere through natural processes and human activities. These gases are termed greenhouse gases due to their shared characteristic of trapping heat, and are believed to be responsible for the global average increase in surface temperatures of 0.7-1.5 °F that were observed during the 20<sup>th</sup> century. The quantity of greenhouse gases in the atmosphere has increased significantly over a relatively short period

California is the second largest greenhouse gas contributor in the U.S. and the sixteenth largest in the world. In 2004, California produced 492 million metric tons of CO<sub>2</sub> equivalent (MMTCO<sub>2</sub>e), which was approximately 7% of all U.S. emissions. However, in 2016, California's total emissions were 429.4 MMTCO<sub>2</sub>e, representing an overall decrease of 12.7% since peak levels in 2004. This puts total emissions just below the 2020 target of 431 million metric tons.

During the 2000 to 2016 period, per capita GHG emissions in California continued to drop from a peak in 2001 of 14.0 tons per person to 10.8 tons per person in 2016, a 22.8% decrease.<sup>7</sup> This decrease may be due to increases in the effectiveness of energy conservation in buildings (Title 24 requirements) and the increased use of renewable energy, including solar generation, hydropower, and wind energy.

The transportation sector remains the largest source of GHG emissions in the state, accounting for 39% of California's emissions in 2016. Regulations and improved fuel efficiency of the state's vehicle fleet will drive down emissions over time, but population growth, lower fuel prices, improved economic conditions and higher employment rates are potential factors that may increase fuel use.<sup>8</sup>

### 2.4.5 Existing Conditions

## AIR QUALITY

Cathedral City is located within the Salton Sea Air Basin (SSAB) and is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD). In the project area, air quality is regulated by the SCAQMD, as well as federal and State policy. Air quality in the Salton Sea Air Basin has been impacted by emissions associated with increased development, population growth, and vehicle emissions. Although air pollution is emitted locally from various sources, some of the degradation of air quality within the Salton Sea Air Basin can be attributed to sources tributary to, but located outside of the basin.

### Criteria Air Pollutants

Currently, air quality in the SSAB exceeds State and federal standards for fugitive dust (PM<sub>10</sub>) and ozone (O<sub>3</sub>), and is in attainment/unclassified for PM<sub>2.5</sub>. Ambient air quality in the SSAB, including the project area, does not exceed state and federal standards for carbon monoxide, nitrogen dioxides, sulfur dioxide, lead, sulfates, hydrogen sulfide, or Vinyl Chloride. The following table shows the basin's federal and State attainment status for criteria pollutants.

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<sup>7</sup> "California Greenhouse Gas Emission Inventory: 2000-2016," California Environmental Protection Agency Air Resources Board, 2018.

<sup>8</sup> Ibid.

**Table 2.4-3  
 Salton Sea Air Basin Designation Status**

Criteria Pollutants	Federal Designation	State Designation
Ozone – 8-hour standard	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
PM <sub>10</sub>	Nonattainment	Nonattainment
PM <sub>2.5</sub>	Attainment	Attainment

Source: CARB Air Quality Planning Branch, 2019

## GREENHOUSE GAS

### Riverside County

Riverside County has set a goal in accordance with AB 32 to reduce emissions back to 1990 levels by the year 2020. This target was calculated as a 15% decrease from 2008 levels, as recommended in the AB 32 Scoping Plan. The estimated community-wide emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the County’s 2015 General Plan Update, are 12,129,497 MT CO<sub>2</sub>e. In order to reach the reduction target, Riverside County must offset this growth in emissions and reduce community-wide emissions to 5,960,998 MT CO<sub>2</sub>e by the year 2020.

### Cathedral City

In 2010, Cathedral City was over its 1990 baseline emissions value by 53,439 tonnes (236,863 tonnes). With growth predicted to exceed 19% between 2010 and 2020, “business as usual” conditions could reach 239,333 tonnes by 2020. To achieve the AB 32 target by 2020, Cathedral City would have to cut GHG emissions by 23.4%, or 55,909 tonnes for a total of 183,424 tonnes.

The following is a summary of major findings in the 2013 Greenhouse Gas Inventory:

- Communitywide emissions in 2010, using guidelines approved by the California Air Resources Board, total 236,863 tonnes CO<sub>2</sub>e.
- This level is 29.1% above 1990 target levels referenced in AB 32—183,424 tonnes CO<sub>2</sub>e.
- The municipal contribution to the community’s emissions footprint is 1.3%, or 3,104 tonnes CO<sub>2</sub>e.
- Electricity—predominantly used for air conditioning—is responsible for 39.9% of the community’s emissions.
- At 4.6 tonnes per capita, Cathedral City has low emissions relative to its neighboring cities.
- Cathedral City’s transportation emissions are high relative to neighboring cities due to a larger segment of Highway 111.
- The per capita regional transportation emissions value of 2.8 tonnes CO<sub>2</sub>, when added to City emissions, puts Cathedral City’s total emissions per capita at 7.4 tonnes CO<sub>2</sub>e.

### 2.4.6 Project Impacts

The following air quality and greenhouse gas analysis assumes that buildout of the General Plan would occur in 2040. This analysis is based on projected land uses included in the Project Description, as well as traffic trips provided by Urban Crossroads (2018). Operational emissions were calculated by using California Emissions Estimator Model (CalEEMod) version 2016.3.2. CalEEMod is a computer program that can be used to estimate anticipated emissions associated with land development projects in California. The model calculates criteria pollutant emissions, including CO, PM<sub>10</sub>, PM<sub>2.5</sub> and the ozone precursors ROG and NO<sub>x</sub>. CalEEMod output tables are provided in Appendix B of this EIR.

The following assumptions were entered into the CalEEMod software:

- Buildout year: 2040
- Land use types and square footages were derived from the Proposed and Existing Land Use Tables (1-2 and 2-1)
- On-road traffic emission projections are based on the trip generation comparison results in the Transportation Analysis (Appendix E). Per the Transportation Analysis, the currently adopted land use table (2009 General Plan) will generate approximately 1,059,000 daily trips and 7,346,153 daily vehicle miles traveled (VMT), and the proposed 2040 land use table will generate approximately 1,052,000 daily trips and 7,257,944 daily VMTs.

## AIR QUALITY

Would the Project:

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

Cathedral City is located within the SSAB, which is governed by the SCAQMD. SCAQMD is responsible for monitoring criteria air pollutant concentrations and establishing management policies for the SSAB. All development within the SSAB, including the Proposed Project, is subject to the 2016 SCAQMD Air Quality Management Plan and 2003 PM<sub>10</sub> Coachella Valley State Implementation Plan. These comprehensive plans establish control strategies and guidance on regional emission reductions for air pollutants.

A project is considered to be in conformity with adopted air quality plans if the project adheres to the requirements of the South Coast Air Quality Management Rule Book<sup>9</sup> and Air Quality Management Plan<sup>10</sup>. Divergence from adopted attainment or maintenance plans would result in non-conformance, and occurs when a proposed project conflicts with or would result in a delay of implementation for any attainment or maintenance plan. A project is conforming if it complies with all applicable District rules and regulations, adopted and forthcoming control measures, and is consistent with the growth forecasts in the applicable plan(s) (or is directly included in the applicable plan). Conformity with growth forecasts can be established by demonstrating that the project is consistent with the land use plan that was used to generate the growth forecast. A non-conforming project would be one that increases the gross number of dwelling units, increases the number of trips, and/or increases the overall vehicle miles traveled in an affected area relative to the applicable land use plan.

The SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments, and cooperates actively with all State and federal government agencies. SCAG adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) to comply with metropolitan planning organization (MPO) requirements under the Sustainable Communities and Climate Protection Act. The Growth Management chapter of the RTP/SCS forms the basis of land use and transportation controls of the AQMP. Projects that are consistent with the projections of population forecasts are considered consistent with the AQMP. The Southern California Association of Governments (SCAG) forecasts that the City's population will be 68,100 in 2040.<sup>11</sup>

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<sup>9</sup> South Coast Air Quality Management District Rules and Regulations, Adopted February 4, 1977.

<sup>10</sup> "Final 2016 Air Quality Management Plan," prepared by South Coast Air Quality Management District, March 2017.

<sup>11</sup> 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), Appendix: Demographics & Growth Forecast, Table 11, Southern California Association of Governments, December 2015.

There are currently 54,466 residents in Cathedral City. Buildout of the General Plan Update is projected to result in an additional 105,532 residents. This estimate is based on an additional 33,396 dwelling units that could be built in the planning area over the life of the General Plan, and the City's average of 3.16 persons per household. It assumes full occupancy of seasonal, recreational, and occasional occupancy dwelling units in addition to permanent residency units. Based on these assumptions, there would be a total of 159,998 residents at General Plan buildout.

The proposed 2040 General Plan buildout population will exceed SCAGs population projections for the 2016 AQMP and 2016-2040 RTP/SCS by 91,898 persons. The size and composition of the population has a direct effect on the amount of air quality emissions, being that an increase in population results in a correlated increase in the level of air quality emissions. However, State legislation, such as SB 375 and AB 32, as well as regional and local programs and policies have shown that with proper land use planning, adherence to building codes, especially Title 24, and opportunities for alternative modes of transport, this trend can be reversed. Nonetheless, the projected increase in the population size within the planning area as set forth in the General Plan Update, when compared to the SCAG population projections for the City, has the potential to conflict with or obstruct implementation of future Air Quality Management Plans.

The 2040 General Plan includes policies and programs that would reduce this impact, such as those set forth in the Air Quality and Climate Stability Element, which includes a number of policies that have been developed to reduce construction and operational air pollutant emissions associated with the 2040 General Plan. Such Policies include *AQCS Policies 1, 2, 4, 5, 6, 8, and EJ Policy 6.1*. In addition, adherence to the City's Climate Action Plan and Green for Life program are expected to substantially reduce emissions of air quality pollutants and reduce the per capita emission contribution. Section 2.4.7 Mitigation Measures, below, provides the list of City programs designed to avoid and or reduce air quality impacts to less than significant levels. These programs were designed to ensure the City's compliance with air quality management plans, regardless of changes in population projections. Therefore, impacts will be less than significant with mitigation measures *AQ-1* through *AQ-22*.

***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.***

Pollutants of primary concern in the Coachella Valley are ozone (O<sub>3</sub>) and particulate matter (PM<sub>10</sub>). The SSAB is in non-attainment for ozone (O<sub>3</sub>) and PM<sub>10</sub>. For national area designations, the Coachella Valley is in non-attainment (Severe-15) for the federal 8-hour ozone standard, and serious non-attainment for the federal 24-hour PM<sub>10</sub> standard.

Construction Emission Impacts

Construction activities that would occur over the next 20 years in accordance with the 2040 General Plan Update would cause temporary, short-term emissions of various air pollutions. The use of construction equipment would inevitably result in the emission of ROG and NO<sub>x</sub>, which are ozone precursors, as well as particulate matter. Project information regarding specific development projects would be needed in order to quantify and analyze the level of impact associated with construction activity. Buildout of the General Plan will result in a mix of small- and large-scale projects that will be required to adhere to the City's procedures and regulations as they relate to CEQA analysis and mitigation. It is possible that some large-scale projects could substantially increase criteria pollutants through the year 2040. Actual significance would be determined on a project-by-project basis as future development applications are submitted.

In addition, the Air Quality and Climate Sustainability Element would serve to control construction emissions, including coordination with the SCAQMD during the review of new development projects (*AQCS Policy 1*, mitigation measure *AQ-5*), implementing dust control measures (mitigation measures *AQ-7, AQ-8*; SCAQMD Rule 403.1), and requiring mitigation measures to reduce significant impacts (mitigation measure *AQ-6*). All new development within the Planning Area shall also adhere to SCAQMD rules and regulations for all construction related activities. The policies and programs set forth in the 2040 General Plan will ensure that potential construction emissions from new development will be mitigated to the greatest extent feasible in accordance with SCAMD requirements. Impacts are less than significant.

**Operational Emission Impacts**

Daily activities at operations will result in the emission of air quality pollutants from the use of electricity and natural gas, and will be emitted from area sources and moving sources. The use of electricity within the Planning Area results in offsite emissions from the production of electricity. Although emissions associated with electricity do not occur within the physically boundary of the Planning Area, they are considered as part of the operational impacts from buildout of the General Plan Update. Emissions from natural gas occur from the combustion of natural gas within the Planning Area for operational activities such as heating and cooling, and cooking. Area source emissions include the use of consumer products, the application of architectural coatings, hearth fuel combustion, and fuel used for landscaping purposes. Moving sources include emissions from vehicles at buildout of the General Plan Update.

The SCAQMD does not currently recommend quantified analyses of construction and/or operational emissions from multiple development projects nor provides methodologies or thresholds of significance to be used to assess the significance of cumulative emissions generated by multiple cumulative projects, including buildout of a General Plan. However, it is recommended that a project’s potential contribution to cumulative impacts should be assessed utilizing the same significance criteria as those for project-specific impacts. Furthermore, SCAQMD states that if an individual development project generates less than significant construction or operational emissions, then the development project would not generate a cumulatively considerable increase in emissions for those pollutants for which the Basin is in nonattainment. Individual projects proposed within the General Plan Planning Area will be reviewed on a case-by-case basis for their potential to result in a cumulatively considerable contribution to non-attainment criteria pollutants under CEQA.

As shown in the table below, operational air quality emissions for the 2040 General Plan have the potential to result in a cumulatively considerable net increase of CO, NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and ROG. The majority of criteria pollutant emissions are due to mobile sources. The 2040 General Plan policies that promote the reduction of mobile emissions through transportation planning include *CD Policy 5.1, OSC Policy 2, and OSC Policy 5.*

**Table 2.4-4  
 Operational Emissions Summary  
 Existing vs. Proposed Land Use  
 (lbs./day)**

	CO	NO <sub>x</sub>	ROG	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Existing LU Table</b>						
Area	4,637.86	509.91	2,744.19	3.16	61.82	61.82
Energy	209.39	399.20	46.04	2.51	31.81	31.81
Mobile	17,046.83	13,529.10	1,455.39	81.58	6,278.86	1,700.50
<b>TOTAL:</b>	<b>21,894.08</b>	<b>14,438.21</b>	<b>4,245.62</b>	<b>87.25</b>	<b>6,372.49</b>	<b>1,794.13</b>
<b>SCAQMD Threshold*</b>	<b>550.00</b>	<b>100.00</b>	<b>75.00</b>	<b>150.00</b>	<b>150.00</b>	<b>55.00</b>
<b>Exceeds Threshold</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>Yes</b>
<b>Proposed LU Table</b>						
Area	4,686.34	515.21	2,816.59	3.19	62.46	62.46
Energy	222.46	414.35	47.71	2.60	32.96	32.96
Mobile	16,904.81	13,432.64	1,444.33	80.89	6,223.26	1,685.44
<b>TOTAL:</b>	<b>21,813.61</b>	<b>14,362.20</b>	<b>4,308.63</b>	<b>86.68</b>	<b>6,318.68</b>	<b>1,780.86</b>
<b>SCAQMD Threshold*</b>	<b>550.00</b>	<b>100.00</b>	<b>75.00</b>	<b>150.00</b>	<b>150.00</b>	<b>55.00</b>
<b>Exceeds Threshold</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>Yes</b>

Source: CalEEMod Version 2016.3.2. See Appendix A for detailed tables. Value shown represents the average emissions of summer and winter outputs.

\* Source: “SCAQMD Air Quality Significance Thresholds” prepared by SCAQMD.

### Cumulative Contribution: Non-Attainment Criteria Pollutants

A significant impact could occur if the project would make a considerable cumulative contribution to federal or State non-attainment pollutants. The Coachella Valley portion of the SSAB is classified as a “non-attainment” area for PM<sub>10</sub> and ozone. Cumulative air quality analysis is evaluated on a regional scale (rather than a neighborhood scale or city scale, for example) given the dispersing nature of pollutant emissions and aggregate impacts from surrounding jurisdictions and air management districts. Any development project or activity resulting in emissions of PM<sub>10</sub>, ozone, or ozone precursors will contribute, to some degree, to regional non-attainment designations of ozone and PM<sub>10</sub>. As shown above, projections of these pollutants exceed established daily thresholds and therefore have the potential to result in a cumulative impacts to ozone and PM<sub>10</sub>. However, subsequent CEQA documentation prepared for individual projects would have project-specific data and would be required to address, and to the extent feasible, mitigate any significant air quality impacts to a less than significant level. Therefore, with implementation of the 2040 General Plan programs and mitigation measures set forth in Section 2.4.7, below, impacts to non-attainment criteria pollutants are expected to be reduced to less than significant levels on a case-by-case basis. (See mitigation measures AQ-6).

#### ***c) Expose sensitive receptors to substantial pollutant concentrations.***

The 2040 General Plan land use plan has been designed to provide a buffer between sources of air quality emissions and sensitive receptors (*AQCS Policy 3*). CARB adopted the Air Quality and Land Use Handbook (CARB, 2005) to provide guidance to planning agencies and air districts for considering potential impacts to sensitive land uses proposed in proximity to toxic air contaminants (TAC) emission sources. The goal of the guidance document is to protect sensitive receptors, such as children, seniors, and acutely ill and chronically ill persons, from exposure to TACs emissions by encouraging adequate separation between new sensitive land uses (residential, educational, healthcare) proposed adjacent to TAC sources in order to minimize land use incompatibility.

To further ensure that sensitive receptors are protected from potential health risks, the following additional program is recommended for the 2040 General Plan:

**AQCS Program 3.C: Health Risk Evaluation.** Prior to project approval, the City or project applicant shall evaluate health risks when proposed developments would result in new sensitive receptors near existing sources of substantial toxic air contaminants (TACs) or the development of sources of substantial toxic air contaminants near existing sensitive receptors. Evaluation would be based on consideration of the California Air Resource’s Board Air Quality and Land Use Handbook: A Community Health Perspective distance recommendation between sources and receptors. If the project would not meet the distance recommendations between sources and receptors, the City shall require the applicant to ensure that TAC impacts would be below the carcinogenic threshold (i.e., probability of contracting cancer for the Maximally Exposed Individual would be less than 10 in one million) and below the non-carcinogenic threshold (i.e., result in a Hazard Index less than 1 for the Maximally Exposed Individual). In addition, several measures to reduce potential risk from commercial or industrial land uses that would be considered include:

- Proposed commercial or industrial land uses that have the potential to emit toxic air contaminants (such as loading docks for diesel delivery trucks) would be located as far away as possible from existing and proposed sensitive receptors.
- Signs would be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises in order to reduce idling emissions.
- Proposed commercial and industrial land uses that have the potential to host diesel trucks would incorporate idle reduction strategies that reduce the main propulsion engine idling time through alternative technologies such as, IdleAire, electrification of truck parking, and alternative energy sources for transport refrigeration units to allow diesel engines to be completely turned off.

Subsequent CEQA documentation prepared for individual projects would have project-specific data and would be required to address, and to the extent feasible, mitigate any significant air quality impacts to a less than significant level. Also, the addition of the Health Risk Evaluation program would guide health risk considerations and reduce potential toxic air contaminant exposure at existing and new sensitive receptors, thereby reducing this impact to less than significant levels because TAC significance thresholds would not be exceeded. Thus, the proposed 2040 General Plan Update is not expected to expose sensitive receptors to substantial pollutant concentrations and air quality impacts to sensitive receptors are expected to be less than significant.

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

The 2040 General Plan Update includes land uses that have the potential to generate objectionable odors, particularly cannabis related businesses. The City's Municipal Code (CCMC) section 9.108.080 A.1 requires that all cannabis cultivation businesses be equipped with an odor absorbing ventilation and exhaust system so that odors from the business cannot be detected outside the building. In addition, individual projects which may be proposed within the Planning Area will be reviewed based on their potential to generate odors under CEQA. Therefore, it is considered unlikely that implementation of the General Plan Update would result in objectionable odors affecting a substantial number of people. The 2040 General Plan Update is expected to have less than significant impacts in regard to odors or other emissions.

## **GREENHOUSE GAS**

Would the Project:

***a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.***

### Construction

Individual development projects proposed under the 2040 General Plan will be evaluated on a case-by-case basis per CEQA requirements and using project specific information to estimate GHG emissions and determine the level of impact. Emissions of GHG's during construction activities have the potential to either directly or indirectly result in a temporary impact on the local and regional air quality conditions. GHG emissions from construction will end once construction activities are complete. Therefore, the generation and emission of GHG's from construction are not expected to have a long term or lasting impact on the environment and impacts to air quality from construction are expected to be less than significant.

### Operation

There are five emission source categories that contribute either directly or indirectly to operational GHG emissions, including energy/electricity usage, water usage, solid waste disposal, area emissions (pavement and architectural coating off-gassing), and mobile sources. Operational GHG emissions under the existing General Plan land use plan were compared to GHG emissions under the proposed land use plan for buildout in 2040. For this analysis purposes, GHG emissions were estimated using the CalEEMod software, which bases GHG projections on land use factors for energy use, water use, solid waste generation, and wastewater generation. It should be noted that GHG emission projections in the City's CAP and GHG Inventory were based on actual usage and not default land use factors<sup>12</sup>.

Therefore, actual GHG emission projections may vary.

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<sup>12</sup> Disclaimer: The International Council for Local Governmental Initiatives (ICLEI) Clean Air and Climate Protection (CACAP) software and California Air Resources Board-approved Local Government Operations Protocol (LGOP) were used for the City's Greenhouse Gas Inventory and Climate Action Plan. The GHG emission projections for the City's Climate Action Plan and Greenhouse Gas Inventory are based on direct emissions from major source categories within the City limits, which were derived from utility bills and real consumption data. Results shown in Table 2.4-5 may differ from future CAP and GHG Inventory updates.

To achieve the AB 32 target by 2020, Cathedral City would have to cut GHG emissions by 23.4%, or 55,909 tonnes for a total of 183,424 tonnes (1990 levels). To achieve the SB 32 target of 40% below 1990 emissions, the City would need to reduce emissions to a total of 110,054 tonnes. Currently, there are no adopted 2040 reduction targets, however CARB is working towards a 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels, which would require the City to reduce GHG emissions to a total of 36,685 tonnes annually.

The following GHG estimates are provided to compare 2040 conditions under the existing and proposed land use plans. Based on these results, the proposed 2040 General Plan would not only increase the City’s existing GHG emissions, but emissions would also fail to achieve the State’s GHG reduction targets for 2020, 2030, and 2050, as well as GHG reduction targets set forth in the City’s CAP.

**Table 2.4-5  
 2040 Operational GHG Emission Comparison  
 (Metric Tons/Year)**

	Existing GP LU	Proposed GP LU	Proposed 2040 Difference
Area Emissions	1,820.48	1,839.46	+ 18.98
Energy Emissions	298,088.72	309,553.68	+ 11,464.96
Mobile Emissions	1,275,498.08	1,261,202.65	- 14,295.43
Waste Emissions	36,993.72	38,848.62	+1,854.90
Water Emissions	54,009.62	58,424.33	+4,414.71
<b>Total</b>	<b>1,666,410.62</b>	<b>1,669,868.74</b>	<b>+3,458.12</b>
<b>Per Capita*</b>	<b>24.47</b>	<b>10.43</b>	<b>- 14.04</b>

Source: CalEEMod Version 2016.3.2. See Appendix B of this DEIR for detailed tables. Values shown represent the total unmitigated GHG emission projections for 2040 under existing GP conditions vs proposed GP conditions.  
 \* Based on population estimates provided in Section 2.14 Population and Housing. Assumes 2040 population would be 68,100 under existing conditions and 159,998 under proposed land use conditions.

Conclusion

Operational activities would result in the generation and emission of greenhouse gases, which could have significant impacts to air quality locally and regionally. Implementation of the Climate Action Plan is intended to reduce impacts associated with the emission of greenhouse gases within City limits to levels that are less than significant. In addition, *AQCS Policy 10* ensures that the City’s CAP and GHG Inventory are regularly updated to include current trends in technology, climate regulations, and to track the City’s efforts to reduce overall greenhouse gas emissions. *AQCS Policies 5 through 7* promote the use of alternative energy sources and modes of transportation that can further reduce the City’s GHG emissions.

As previously stated, individual projects developed under the 2040 General Plan will be assessed on a case-by-case basis for potential impacts related to GHG emissions. Implementation of mitigation measures *AQ-9* through *AQ-42* will help to reduce GHG emissions to the greatest extent feasible. However, based on the GHG projections above, it is possible that the 2040 General Plan update would generate GHG emissions that could have a significant and unavoidable impact on the environment.

- b) ***Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.***

As previously discussed, the 2040 General Plan update would not only increase the City's GHG emissions when compared to the existing land use plan, but buildout emission projections will fail to achieve State GHG reduction targets for 2020, 2030, and 2050. It is possible that future GHG emission projects could be reduced with technology advancements, best management practices, and adherence SCAQMD rules and regulations. 2040 General Plan policies that promote GHG reductions through transportation and land use planning, efficient use of energy resources, and adherence to current trends in policies, regulations, and action plans include *AQCS Policy 10*, *HSC Policy 2.2*, *CD Policy 3.1, 5.1*, and *OSC Policies 1 through 6*.

Individual development projects proposed under the 2040 General Plan will be assessed on a case-by-case basis for potential impacts related to GHG emissions. Projects will be required to demonstrate adherence to applicable plans, policies, and regulations adopted for the purposed of reducing GHG emissions. Implementation of mitigation measures *AQ-9* through *AQ-42* will help to reduce GHG emissions to the greatest extent feasible. However, based on the GHG projections above, it is possible that the 2040 General Plan update would generate GHG emissions that are inconsistent with State reduction targets. Impacts will be significant and unavoidable.

### 2.4.7 Mitigation Measures

The Air Quality and Climate Stability Element sets forth a wide range of policies and programs that serve to avoid, minimize and mirtigate impacts to air quality and the emission of GHGs as a consequence of implementing the proposed General Plan. Impacts to air quality associated with the adoption and implementation of the proposed General Plan are potentially significant if left unmitigated. The avoidance, minimization and mitigation of potential impacts to air quality are addressed through a variety of General Plan programs, which are set forth below. Sub-headers indicate from which elements these are derived. Mitigation measures set forth below are provided to reduce General Plan air quality and greenhouse gas impacts to less than significant levels. As noted above and in Section 2.4.8, GHG emissions associated with implementation of the proposed General Plan may not be adequately reduced even with the application of all practicable measures:

#### Air Quality and Climate Change Element

##### AQ-1 PM<sub>10</sub> Monitoring

On an on-going basis, the City shall continue to cooperate and participate in efforts to monitor and control PM<sub>10</sub> emissions from construction and other sources, and all other air pollutants of regional concern. The City shall coordinate with CVAG and the SCAQMD to provide all reporting data for SCAQMD annual report.

##### AQ-2 Air Quality Data Records

The City shall maintain records of historic and current regional and local air quality trends and make them available to the public. Access to data may be made available via an Internet link, printed material, or other means.

##### AQ-3 Sensitive Receptors

The General Plan Land Use Map and Element shall be developed and maintained to identify and locate air pollution point sources, such as manufacturing operations and highways, at an appropriate distance from sensitive receptors, including hospitals, schools, hotels/motels, and residential neighborhoods.

##### AQ-4 Sensitive Receptor Buffer Zones

Buffer zones between sensitive receptors and potential air pollutant emitters shall be incorporated into new and proposed residential developments and other developments, to the greatest extent feasible.

##### AQ-5 CEQA Air Quality Analysis

The City shall conduct an Initial Study and, where appropriate, require a detailed air quality analysis for all proposals that have the potential to adversely affect local or regional air quality.

- AQ-6 CEQA Analysis and Mitigation  
Projects that may generate significant levels of air pollution shall be required to conduct detailed impact analyses and incorporate mitigation measures into their designs using the most advanced technological methods practicable. All proposed mitigation measures shall be reviewed and approved by the City prior to the issuance of grading or demolition permits.
- AQ-7 Fugitive Dust Control Plans  
The City shall continue to enforce a Fugitive Dust Emissions Ordinance to reduce and control local PM<sub>10</sub> emissions. All dust control mitigation plans prepared by contractors, developers, and other responsible parties shall be reviewed and approved by the City prior to the issuance of grading or demolition permits.
- AQ-8 Code Enforcement: Fugitive Dust and Blowsand  
Provide consistent and effective code enforcement of construction and grading activities and off-road vehicle use to assure that the impacts of blowing sand and fugitive dust emissions are avoided or minimized.
- AQ-9 Alternative Fuels: City Fleet  
Where cost-effective, vehicles that use alternative fuel sources, such as compressed natural gas and electricity, shall be purchased and maintained for use in the City's vehicle fleet.
- AQ-10 Energy Efficient Design  
Site plans shall incorporate energy-efficient design elements, including appropriate site orientation, possibility for incorporation of active and/or passive solar design, and the use of shade and windbreak trees, to reduce fuel consumption for heating and cooling.
- AQ-11 Solar Systems  
The City shall support and promote the use of roof-top solar electric systems in new and existing development, and shall review the City Zoning Ordinance to ensure that City regulations do not create an undue burden on those who wish to install solar electric systems.
- AQ-12 Alternative Energy: Community Wide  
To encourage the use of alternative energy sources, installation of electric vehicle charging stations shall be encouraged in all new development and in major retrofits.
- AQ-13 Alternative Modes of Transportation Planning  
The General Plan Circulation and Mobility Element shall encourage the incorporation of appropriate alternatives to motor vehicles in the transportation network, and shall be periodically reviewed and updated to assure the future expanded use of such alternatives.
- AQ-14 Non-Motorized Transportation Planning  
The City shall pursue land use patterns and mechanisms, including Mixed-Use development and a balance of employment and housing opportunities that encourage pedestrian and other non-motorized transportation and minimize vehicle miles traveled.
- AQ-15 Active Transportation/NEV Plan  
The City Active Transportation/NEV Plan shall be funded and implemented to the maximum extent practicable in order to make safe and convenient alternative modes of travel the norm in the City
- AQ-16 LSEV Planning  
LSEV Revise ordinance to allow to the greatest extent practicable
- AQ-17 Regional Mass Transportation Planning  
Coordinate with CVAG, SCAG, Sunline Transit Agency and other public and private service providers to improve, expand, and optimize cost-effective regional mass transportation services.

AQ-18 Ridesharing Programs

Promote and support the development of ridesharing, carpooling, flexible work scheduling, telecommuting, and Park and Ride programs among public and private employers to decrease existing and future traffic levels in the Coachella Valley.

AQ-19 TDM Planning

The City shall consider adopting a Transportation Demand Management (TDM) Ordinance that applies to new or change-of-use non-residential developments employing 100 or more persons, and which requires the project proponent to demonstrate how the development will reduce the number of project-generated vehicle trips.

AQ-20 Air Quality Management Manual

Prepare and distribute to developers, contractors, consultants and others an air quality management manual that describes effective and appropriate methods of controlling and reducing development-related air pollutants, particularly PM<sub>10</sub> emissions.

AQ-21 CAP, GHG Inventory, EAP, GFL Updates

Update the City's Climate Action Plan, Greenhouse Gas Inventory, Energy Action Plan and Green for Life program materials to include current trends in technology, climate regulations, and to track the City's efforts to reduce overall greenhouse gas emissions.

AQ-22 CEQA Analysis: CAP Measures

Projects that require CEQA analysis shall be required to conduct detailed impact analyses and incorporate mitigation measures into their designs using the City's current Climate Action Plan prescribed reduction measures for achieving greenhouse gas emission reduction targets. All proposed mitigation measures shall be reviewed and approved by the City prior to the issuance of grading or demolition permits.

Environmental Justice Element

AQ-23 Land Use Planning: Reduce Vehicular Trips

To the greatest extent practicable, require that development be located and designed to reduce vehicular trips (and associated air pollution) by utilizing compact development patterns while maintaining community character.

AQ-24 Sensitive Use Pollution Minimization

The city shall require new development with sensitive uses located adjacent to pollution sources be designed with consideration of site and building orientation, location of trees, and incorporation of ventilation and filtration to lessen and minimize any potential health risks.

Healthy and Sustainable Community Element

AQ-25 Energy and Resource Conservation

Continue to work collaboratively with local utility providers and regulatory agencies to assure the City is implementing the most appropriate and effective energy and resource conservation strategies.

AQ-26 Energy and Water Efficiency Incentives

Provide permitting-related and other incentives for energy- and water-efficient building projects, e.g. by giving green projects priority in plan review, processing, and field inspection services.

AQ-27 Low Income Energy Efficiency Projects

Partner with community services agencies to fund energy-efficiency projects, including heating/ventilation/air conditioning (HVAC), lighting, water heating equipment, insulation, and weatherization projects, for low income residents.

AQ-28 Energy Efficient Affordable Housing

Target local funding, including utility programs and Community Development Block Grant resources, to assist affordable housing developers in incorporating energy efficient designs and features.

AQ-29 Green Building Information

Develop and make available to developers, designers, and other interested parties informational materials about green building strategies and programs, including LEED and LEED-ND rating systems and certification programs.

Community Design Element

AQ-30 Sustainability Plan

The City design review process, whether for public or private development projects, shall include a thorough assessment of how and to what extent projects are sustainable, and a sustainability check list derived from the City Sustainability Plan, this element and other regulatory and policy documents, shall be developed and used to assess all project's sustainability.

AQ-31 Active Transportation/Complete Streets

The City shall implement its *Active Transportation Plan* and *Complete Streets* principles in a manner that encourages pedestrian and bicycle use and shall be spatially defined by buildings, trees and lighting, and discourages high speed traffic

Open Space and Conservation Element

AQ-32 Energy Efficient and Energy Conserving Design

The City shall provide developers with available data on energy efficient and conserving building design and technologies. This information, such as the City's *Green for Life* handbooks and may also include information from utilities, trade organizations, state agencies and other system resources that can enhance overall energy conservation.

AQ-33 Energy Education

Encourage Southern California Edison and other providers to facilitate the transfer of data, information and technologies to enhance public education on energy conservation.

AQ-34 SunLine Energy Management and Conservation

The City shall participate in the energy management and conservation efforts of SunLine Transit and encourage the expanded use of compressed natural gas, hydrogen fuel cell and other alternative-fuel buses with bike racks and other system improvements that enhance overall energy efficiency and conservation.

AQ-35 Minimize Travel via Land Use Planning

Amendments to the land use map and Land Use Element shall consider the provision of convenient neighborhood shopping, medical and other professional services appropriately located to minimize travel and facilitate the use of alternative means of transportation.

AQ-36 Commercial and Industrial Energy Management Systems

As a part of *Green for Life, Energy Action Plan* and other City programs, continue to evaluate the use of co-generation and other energy management systems for new larger industrial and commercial businesses in the City as they arise.

**AQ-37 Community and Regional Multi-Modal Path**

Facilitate the development of a community-wide and regional multi-modal path system to provide residents and visitors with alternatives to motor vehicle transportation.

**AQ-38 Ridesharing Information**

The City shall make available information on ridesharing, ride-booking and SunLine Transit services available to residents and businesses, throughout the City.

**AQ-39 Internal Efficiency Upgrades**

Establish a revolving loan fund for internal efficiency upgrades. Rules for use of the fund and its reimbursement will be established.

**AQ-40 Workspace Energy and Cost Efficiencies**

Implement the City's Commissioning/Retro-Commissioning practice and procedures to identify and plan for maintenance and enhancement of energy and cost efficiencies, as well as ensuring optimal comfort and human satisfaction in City workspaces.

**AQ-41 State and Federal Incentives for Energy Efficiency**

The City will leverage state and federal incentives for energy efficiency to augment incentives provided by Southern California Edison, Southern California Gas, and others. Consider energy efficiency in capital improvement budget discussions.

**AQ-42 Municipal Solar and Alternative Energy**

The City shall seek grants and partnerships to increase the development of solar PV systems, and the continued market growth in Electric Vehicle and Compressed Natural Gas vehicles, and associated charging/refueling stations at City facilities and elsewhere throughout the community.

**Circulation and Mobility Element**

AQ-43 The City shall apply to all development plans the adopted roadway classifications, and implement the Active Transportation Plan to maximize walking, bicycling, and use of LSEVs, and assure safe and efficient connections to City-wide and regional multi-modal facilities.

AQ-44 When initiating review of development proposals, the City shall consult and coordinate with SunLine and solicit comments and suggestions on bus stops and other public transit facilities and design concepts, including enhanced handicapped access, should be integrated into project designs.

**2.4.8 Significance After Mitigation**

**AIR QUALITY – Less than Significant**

The mitigation measures provided above have been programmed into the proposed 2040 General Plan Update to ensure impacts to air quality will be reduced to the greatest extent possible. Due to the nature of air quality impacts, all future development within the City will be analyzed on a case-by-case basis and mitigated accordingly. Impacts after mitigation are expected to be less than significant.

**GREENHOUSE GAS – Significant and Unavoidable**

The mitigation measures provided above have been programmed into the proposed 2040 General Plan Update to ensure impacts of greenhouse emissions will be reduced to the greatest extent possible. Due to the nature of greenhouse gases, all future development within the City will be analyzed on a case-by-case basis and mitigated accordingly. However, based on the GHG projections, it is possible that the 2040 General Plan Update would generate GHG emissions that could have a significant and unavoidable impact on the environment.

## **2.4.9 Cumulative Impacts**

### **AIR QUALITY**

Cumulative potential impacts to air quality were assessed under Section 2.4.6.b, above.

### **GREENHOUSE GAS**

Cumulative impacts were analyzed on a regional scale due to the dispersing nature of these pollutant emissions and aggregate impacts from surrounding jurisdictions and air basins. Through analysis of the regional and statewide plans for GHG reductions was used. The geographic scope for the analysis of potential cumulative greenhouse gas impacts is the overall Salton Sea Air Basin region.

Based on the analysis above, the 2040 General Plan has the potential to make a cumulatively considerable contribution to GHG levels due to the increased emission levels. Although the 2040 General Plan policies and programs represent the best practicable strategies to reduce emissions associated with buildout, and are consistent with State regulations and guidelines, no additional mitigation is currently available to reduce this impact to a less than significant level. Cumulative impacts could be significant and unavoidable.

## 2.5 Biological Resources

### 2.5.1 Introduction

This section provides an overview of existing biological resource conditions within the General Plan area and surrounding region and an analysis of potential biological resource impacts that would result from implementation of the proposed General Plan Update and ATP Project. The regulatory environment and thresholds of significance are described. The project's potential biological impacts are discussed, and mitigation measures are set forth where needed. The discussion concludes with a discussion of potential residual and cumulative impacts.

### 2.5.2 Thresholds of Significance

The following significant thresholds or criteria are not strictly those recommended in §15064.7 of CEQA; rather, they are derived from Appendix G of CEQA, which is used to determine if and to what extent a project may have a potentially significant impact on biological resources. The proposed General Plan would have a significant effect on biological resources if it is determined that the project will:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. 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.

### 2.5.3 Regulatory Framework

#### Federal

##### Endangered Species Act (ESA)

The federal Endangered Species Act (ESA) was enacted in 1973. Its purpose is to protect and preserve listed species and their ecosystems, with the goal of recovering species to a point where they no longer need protection under the ESA. The United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service are the designated federal agencies accountable for administering the ESA.

ESA defines species as “endangered” or “threatened” and provides regulatory protection at the federal level. An endangered species is an animal or plant species that is in danger of extinction within the foreseeable future throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Section 9 of the ESA prohibits the “take” of listed (i.e., endangered or threatened) species. The ESA definition of take is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct.” Recognizing that take cannot always be avoided, Section 10(a) includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Specifically, Section 10(a)(1)(A) permits (authorized take permits) are issued for scientific purposes. Section 10(a)(1)(B) permits (incidental take permits) are issued for the incidental take of listed species that does not jeopardize the species. Section 10(a) of the ESA also establishes standards for the content of habitat conservation plans, such as the Coachella Valley Multiple Species Conservation Plan (CVMSHCP).

When a species is proposed for listing as endangered or threatened under the federal ESA, the USFWS must consider whether there are geographic areas that are essential to its conservation that require special management considerations or protections. Such areas are designated as “critical habitat.” Federal agencies are prohibited from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its critical habitat. As defined by the ESA, “individuals, organizations, states, local governments, and other non-federal entities are affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit, license, or other authorization, or involve federal funding.”

#### Migratory Bird Treaty Act (MBTA)

Treaties signed by the U.S., Great Britain, Mexico, Japan, and the countries of the former Soviet Union make it unlawful to pursue, capture, kill, or possess, or attempt to engage in any such conduct to any migratory bird, nest, egg, or parts thereof. As with the ESA, the MBTA allows the Secretary of the Interior to grant permits for the incidental take of protected migratory bird species.

#### Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA), administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of dredged and fill material into “Waters of the United States.” The USACE has created a series of nationwide permits that authorize certain activities within waters of the U.S. provided that the proposed activity does not exceed the impact threshold for nationwide permits; takes steps to avoid impacts to wetlands where practicable; minimizes potential impacts to wetlands; and provides compensation for any remaining, unavoidable impacts through activities to restore or create wetlands. For projects that exceed the threshold for nationwide permits, individual permits under Section 404 can be issued.

### **State**

#### California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) is similar to the federal ESA; however, it is administered by the California Department of Fish and Wildlife (CDFW). It establishes procedures for the protection or preservation of native species threatened with extinction or experiencing a significant decline which could lead to a threatened or endangered designation. Under CESA, “endangered” species are defined as native species or subspecies in serious danger of becoming extinct throughout all or a significant portion of their range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease. “Threatened” species are native species or subspecies that, although not presently threatened with extinction, are likely to become endangered species in the foreseeable future in the absence of the special protection and management efforts of the CESA.

The CDFW is authorized to enter into “memoranda of understanding” with individuals, public agencies, and other institutions to import, export, take, or possess state-listed species for scientific, educational, or management purposes. CESA prohibits the take of state-listed species except as otherwise provided in state law. Unlike the federal ESA, CESA applies take prohibitions to species currently petitioned for state-listing status (candidate species). State lead agencies are required to consult with CDFW to ensure that actions are not likely to jeopardize the continued existence of any state-listed species or result in the destruction or degradation of occupied habitat.

#### The Native Plant Protection Act (NPPA)

The NPPA includes measures to preserve, protect, and enhance rare and endangered native plant species. Definitions for “rare and endangered” are different from those contained in CESA. However, the list of species afforded protection in accordance with the NPPA includes those listed as rare and endangered under CESA. NPPA provides limitations on take as follows: “no person will import into this state, or take, possess, or sell within this state” any rare or endangered native plants, except in accordance with the provisions outlined in the act. If a landowner is notified by CDFW, pursuant to section 1903.5, that a rare or endangered plant is growing on their property, the landowner shall notify CDFW at least 10 days prior to the changing of land uses to allow CDFW to salvage the plants.

#### Natural Community Conservation Planning (NCCP) Program

The NCCP, managed by the CDFW, is intended to conserve multiple species and their associated habitats, while also providing for compatible use of private lands. Through local planning, the NCCP planning process is designed to provide protection for wildlife and natural habitats before the environment becomes so fragmented or degraded by development that species listing is required under CESA.

Instead of conserving small, often isolated “islands” of habitat for just one listed species, agencies, local jurisdictions, and/or other interested parties have an opportunity through the NCCP to work cooperatively to develop plans that consider broad areas of land for conservation that would provide habitat for many species. Partners enroll in the programs and, by mutual consent, areas considered to have high conservation priorities or values are set aside and protected from development. Partners may also agree to study, monitor, and develop management plans for these high value “reserve” areas. The NCCP provides an avenue for fostering economic growth by allowing approved development in areas with lower conservation values. An NCCP is included as a part of the CVMSHCP.

#### Sections 1600-1603 of the State Fish and Game Code

The California Fish and Game Code Sections 1600 through 1603 regulate all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife resources. Under state code, CDFW jurisdiction is assessed in the field based on one, or a combination, of the following criteria (CDFW 2005b):

- At minimum, intermittent and seasonal flow through a bed or channel with banks and that also supports fish or other aquatic life.
- A watercourse having a surface or subsurface flow regime that supports or that has supported riparian vegetation.
- Hydrogeomorphically distinct top-of-embankment to top-of-embankment limits.
- Outer ground cover and canopy extents of, typically, riparian associated vegetation species that would be sustained by surface and/or subsurface waters of the watercourse.

The CDFW requires that public and private interests apply for a “Streambed Alteration Agreement” for any project that may impact a streambed or wetland. The CDFW has maintained a “no net loss” policy regarding impacts to streams and waterways and requires replacement of lost habitats on at least a 1:1 ratio.

#### Section 2081 of the State Fish and Game Code

Under Section 2081 of the California Fish and Game Code, the CDFW authorizes individuals or public agencies to import, export, take, or possess state endangered, threatened, or candidate species in California through permits or memoranda of understanding. These acts, which are otherwise prohibited, may be authorized through permits or “memoranda of understanding” if (1) the take is incidental to otherwise lawful activities, (2) impacts of the take are minimized and fully mitigated, (3) the permit is consistent with regulations adopted in accordance with any recovery plan for the species in question, and (4) the applicant ensures suitable funding to implement the measures required by the CDFW. The CDFW must make this determination based on the best scientific information reasonably available and must include consideration of the species’ capability to survive and reproduce.

Section 3505.5 of the State Fish and Game Code

Section 3505.5 makes it unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds-of-prey, i.e.: owls, hawks, eagles, etc.) or to take, possess, or destroy the nest or eggs of any bird-of-prey. Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA.

**Regional and Local**

Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP)<sup>1</sup>

The Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan (CVMSHCP/NCCP) is a comprehensive regional plan encompassing a planning area of approximately 1.1 million acres and conserving approximately 240,000 acres of open space. The Plan addresses the conservation needs of a variety of plant and animal species and plant communities that occur in the Coachella Valley region.

The Plan was finalized in October 2008 and establishes a system of preserves outside of urbanized areas to protect lands with high conservation value. It streamlines development permit processing by providing the Plan's "Permittees" with long-term (75-year) incidental take permits under state and federal endangered species acts. Cathedral City is a signatory to and participates in the implementation of the CVMSHCP. As a Permittee under the CVMSHCP, the City must comply with all applicable terms and conditions of the CVMSHCP and Implementing Agreement (See Section 13.0 of the CVMSHCP Implementing Agreement).

Agua Caliente Tribal Habitat Conservation Plan<sup>2</sup>

The Agua Caliente Indian Reservation consists of approximately 31,500 acres generally in a checkerboard pattern in unincorporated Riverside County and the cities of Cathedral City, Palm Springs, and Rancho Mirage. The Tribe and municipalities cooperate on local and regional matters of mutual concern, including land use planning and the protection of open space and natural resources.

The Agua Caliente Tribal Habitat Conservation Plan (Tribal HCP) (2010) was established to protect and manage natural resources and habitat within the Tribe's jurisdictional territory, and to establish consistency and streamline permitting requirements with respect to protected species. The Tribal HCP covers approximately 36,055 acres, including Reservation lands and several off-reservation properties. Covered species include 19 sensitive wildlife species and 3 sensitive plant species that occur or have the potential to occur within the HCP planning area. Its primary conservation mechanisms include creation of a Habitat Preserve; adoption of avoidance, minimization, and mitigation measures to enhance the habitats and survivability of Covered species; and payment of a mitigation fee that funds Tribal acquisition and management of replacement habitat. The HCP establishes the Mountains and Canyons Conservation Area and the Valley Floor Conservation Area. It has not yet been approved by the USFWS.

General Plan Biological Resources Sub-Element

The proposed General Plan Biological Resources Element includes the following policies that pertain to biological resource management:

- Policy 1** The City shall continue to participate in the preservation of habitat for endangered, threatened, and sensitive species.
- Policy 2** As part of the development review process, projects shall be evaluated for the project's impacts on existing habitat and wildlife, and for the land's value as viable open space.

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<sup>1</sup> Final Recirculated Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan, September 2007.

<sup>2</sup> Agua Caliente Band of Cahuilla Indians Tribal Habitat Conservation Plan, August 2010.

- Policy 3** Encourage and cooperate with other agencies in establishing multiple use corridors that take advantage of drainage channels and utility easements as wildlife movement corridors, public access, and links between open space and the built environment.
- Policy 4** Assure that sensitive habitat and wildlife areas, as well as state and federal lands, are appropriately buffered from the built environment.
- Policy 5** Promote the protection of biodiversity and proactively encourage an appreciation for the natural environment and biological resources.

#### General Plan Open Space and Conservation Element

The following Open Space and Conservation Element also proposes policies that are relevant, either directly or indirectly, to biological resources occurring in and in proximity of the City. They include:

- Policy 8:** The City shall participate in the preservation of significant areas of natural desert, watercourse, and hillside habitat, including migration corridors and wildlife preserves, in order to maintain and enhance the preservation of sensitive biological resources.
- Policy 11:** Native landscaping materials and oasis-like design features shall be incorporated into parks, public rights-of-way, golf courses, and other open space lands, as appropriate, to enhance, retain and preserve the natural desert environment and enhance human and wildlife habitats.
- Policy 13:** Support and cooperate with the hillside and habitat conservation management programs of the Santa Rosa Mountains Conservancy.

### **2.5.4 Regional Environmental Setting**

The Coachella Valley is in the Colorado subunit of the Sonoran Desert. The rocky slopes and mountain ranges bordering the valley isolate it from marine moisture to the west and contribute to the region's excessively hot and dry climate, creating a unique geomorphic and geographic setting that has shaped the evolution of a variety of plant and wildlife species. The resulting conditions provide an ecological environment that supports diverse and sometimes highly specialized species and natural communities.

The valley is bordered by the rocky, steep slopes of the San Bernardino and Little San Bernardino Mountains to the northwest and north; the San Jacinto Mountains to the west and southwest; and the Santa Rosa Mountains to the south. The mountains rise significantly over the low-lying valley floor. Channels and watercourses drain the mountains, creating deep channels that become shallower and less defined as they enter the valley floor. Over time, coarse rock has eroded and been transported downslope, forming alluvial plains of smoother, sandy deposits at the base of the mountains. Fan palm oases occur within canyons where natural water supplies flow through these woodland, and along geologic fault lines where high ground water levels support dense vegetation.

The valley floor extends from the San Geronio Pass on the west to the Salton Sea on the east, and slopes gently to the southeast. It is characterized by sparse vegetation and windblown (aeolian) sand deposits that, historically, have functioned as an active sand transport corridor but have been restricted due to urban development.

### **2.5.5 Existing Conditions**

Much of the General Plan planning area south of I-10 is already developed with urban land uses that, over time, have resulted in the permanent loss of native habitats and plant and animal species, and disturbance of the natural aeolian (wind) or hydrological (water) processes needed to sustain them. Scattered vacant parcels are interspersed with development in this portion of the City, and several larger expanses of undeveloped land are immediately south

of I-10. Nearly all land north of I-10 is undeveloped, with the exception of a windfarm on the west slopes of Edom Hill, a few roads, above-ground water reservoirs, electric power lines, and limited new development in the vicinity of the Bob Hope Drive/US I-10 interchange.

## **Ecosystem Management**

Sensitive and/or unique ecosystems in Cathedral City are managed according to the following plans.

### CVMSHCP/NCCP

The City of Cathedral City is within the boundaries of the CVMSHCP/NCCP, and the City is a Permittee to the Plan. As such, non-tribal land within the City is subject to the provisions of the Plan (tribal land is subject to the Agua Caliente Tribal HCP, below). With few exceptions, new development projects are required to pay a Local Development Mitigation Fee to mitigate impacts to covered species and their habitat. Residential projects pay a per unit fee based on density, and commercial and industrial projects currently pay \$5,730 per acre.<sup>3</sup>

The CVMSHCP establishes 21 Conservation Areas. Land within or adjacent to Conservation Areas is subject to special management activities to achieve conservation objectives and avoid or minimize the direct and indirect effects of urban development. Conservation Areas in Cathedral City include the Willow Hole Conservation Area and Edom Hill Conservation Area north of I-10, which contain suitable habitat for the following sensitive species: LeConte's Thrasher, Palm Springs Pocket Mouse, Coachella Giant Sand Treader Cricket, Coachella Valley Round-tailed Ground Squirrel, Coachella Valley Milkvetch, and Coachella Valley Fringe-toed Lizard.<sup>4</sup> The Whitewater Floodplain Conservation Area in the vicinity of I-10 and San Joaquin Drive (extended) contains suitable habitat for the same species.<sup>5</sup> The Santa Rosa and San Jacinto Mountains Conservation Area, in the mountains adjacent to the Cathedral City Cove, contains suitable habitat for the Peninsular bighorn sheep.<sup>6</sup> The boundaries of these Conservation Areas are shown on Exhibits 2.5-2 and 2.5-3.

### Agua Caliente Tribal HCP

Within Cathedral City, the Agua Caliente Reservation generally covers alternating Sections of land in a checkerboard pattern. All Reservation land in the City is within the Valley Floor Planning Area (VFPA) and subject to payment of a mitigation fee; the current fee is \$2,371 per disturbed acre.<sup>7</sup>

### Willow Hole-Edom Hill Preserve

The Willow Hole Preserve consists of approximately 2,469 acres north of I-10 at the west end of the Indio Hills. Much of the Willow Hole-Edom Hill Preserve lies within the Cathedral City boundaries. It is designated as an Area of Critical Environmental Concern (ACEC) and is part of the larger Coachella Valley Preserve System jointly managed by the Bureau of Land Management (BLM), USFWS, CDFW, California Department of Parks and Recreation, and Center for Natural Lands Management. It consists of mesquite hummocks and a fan palm oasis and provides important blowsand habitat for various sand-dependent species, including the federally listed Coachella Valley fringe-toed lizard, Coachella Valley milkvetch, Palm Springs ground squirrel, and Palm Springs pocket mouse.

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<sup>3</sup> Estimated Development Fees (accessed January 2019), City of Cathedral City.

<sup>4</sup> CVMSHCP Figures 4-13b and 4-15b.

<sup>5</sup> CVMSHCP Figure 4-11b.

<sup>6</sup> CVMSHCP Figure 4-26b.

<sup>7</sup> Schedule of Standard Tribal Planning Fees (accessed January 2019), Agua Caliente Band of Cahuilla Indians.

### Santa Rosa and San Jacinto Mountains National Monument

The Santa Rosa and San Jacinto Mountains National Monument was created in 2000. It encompasses approximately 272,000 acres within the Santa Rosa and San Jacinto Mountains along the southern portion of the Coachella Valley, and is adjacent to, but outside of, the southern boundary of Cathedral City. Lands are administered by the BLM, U.S. Forest Service (USFS), CDFW, California Department of Parks and Recreation, Agua Caliente Band of Cahuilla Indians, and Coachella Valley Mountains Conservancy, in cooperation with the county, adjacent cities, and property owners. Federal lands are managed according to the Santa Rosa and San Jacinto Mountains National Monument Management Plan.

### **Habitat Types and Natural Communities**

The following general habitat types are found in Cathedral City.<sup>8</sup> Within these habitats are natural communities, defined as groups of plants and animals and their physical environment. Natural communities in the General Plan area, as determined by the CVMSHCP, are mapped on Exhibit 2.5-1.

#### Valley Floor

Valley floor habitat covers much of Cathedral City and the central Coachella Valley. It is characterized by low-lying, relatively flat terrain with sparse vegetation and sand deposits that originated from the erosion of adjacent hills and have been transported by strong winds. It can contain “active” sand dunes in which the continuous process of sand accumulation, depletion, and shifting occurs, uninterrupted by windbreaks or other impediments. Vegetation is largely limited to primrose (*Oenothera*), desert dicoria (*Dicoria canescens*), and sand verbena (*Abronia villosa*). In Cathedral City, active sand transport systems are found in the Willow Hole-Edom Hill Preserve. Historically, they also occurred near the Whitewater River floodplain; however, urban development has restricted sand movement in this area, resulting in a loss of habitat. The valley floor can also contain “stabilized” and “partially stabilized” sand fields that lack the structure of sand dunes and contain more vegetation than active sand dunes, including creosote bush (*Larrea tridentate*), sand verbena, and burrobush (*Oenothera deltoides*). They are considered a Community of Highest Inventory Priority (CHIP) by the State. In Cathedral City, valley floor habitat has been largely fragmented, disturbed, and replaced by development.

#### Sandy Washes

Desert wash habitat includes watercourses and channels that drain the mountains surrounding the Coachella Valley. They typically contain viable, adequate sandy wash habitat that can support abundant bird populations and serve as travel corridors for wildlife. They often contain the Desert Dry Wash Woodland plant community, which is dominated by palo verde (*Cercidium floridum*) and smoke tree (*Psoralea spinosus*). In Cathedral City, this habitat type occurs near the Whitewater River Wash, Morongo Wash, and Long Canyon Wash. Desert Dry Wash Woodland can also be found in East and West Cathedral Canyon Washes and at the Willow Hole-Edom Hill Preserve.

#### Alluvial Plain

Alluvial plain (or fan) habitat consists of coarse rock and sand that erodes from mountains and is transported and deposited as flood water descend from the mountains. Over time, the substrate is altered from rocky to sand deposits. Alluvial plains are typically dominated by the Sonoran mixed woody and succulent scrub plant community which is characterized by creosote bush, indigobush (*Dalea schottii*), catclaw acacia (*Acacia greggii*), smoketree, and palo verde. This plant community occurs in the lower slopes of the Santa Rosa Mountains and along the southern edge of the Coachella Valley. In Cathedral City, alluvial plain habitat occurs south of East Palm Canyon Drive and at the foothills of the Santa Rosa Mountains.

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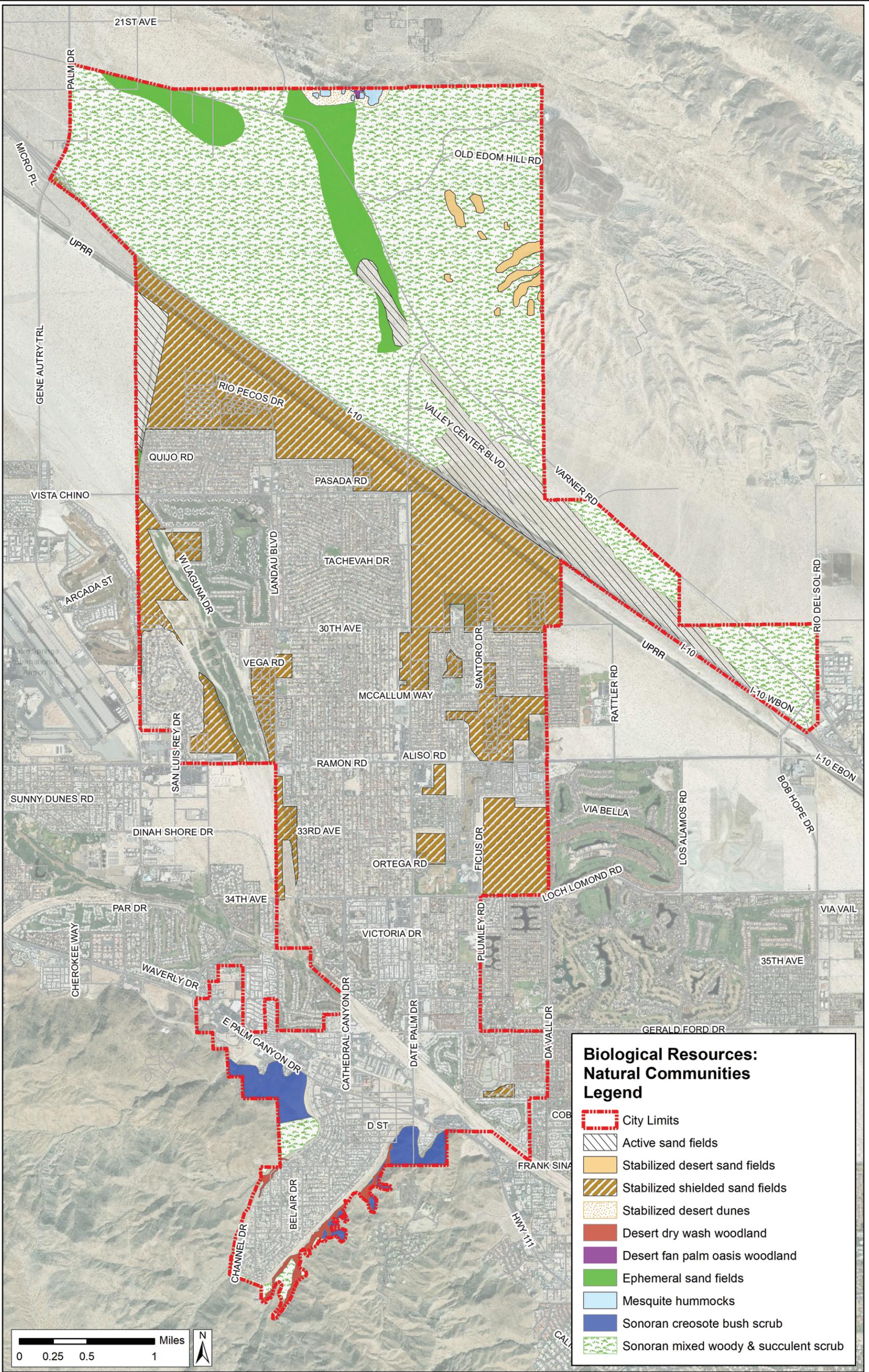
<sup>8</sup> “Biological Assessment for the Cathedral City General Plan Update,” Terra Nova Planning and Research, Inc., 2001.

### Desert Fan Palm Oasis Woodland

Desert Fan Palm Oases occur along geologic fault lines where ground water rises near the surface and supports dense vegetation. Desert Fan Palm Oasis Woodland is a sensitive plant community that is designated as a Community of the Highest Inventory Priority (CHIP) by the State. It is dominated by the California fan palm (*Washingtonia filifera*), the largest palm in North America, as well as desert baccharis (*Baccharis sergiiodes*) and arrowweed (*Pleuchea sericea*). This habitat provides cover, food, and water sources for migrating and wintering birds, the southern yellow bat, desert slender salamander, giant palm-boring beetle, and Peninsular bighorn sheep. In Cathedral City, a Desert Fan Palm Oasis is found in the Willow Hole-Edom Hill Preserve and within canyons of the Santa Rosa and San Jacinto Mountains.

### Rocky Slopes

Rocky slopes habitat is characterized by steep slopes and weathered and fractured bedrock that may be displaced into loose debris of sand, pebbles, and stone. It supports numerous perennials and annual plant species, the density and size of which increases with elevation and associated increases in rainfall. Species include creosote bush, brittlebush (*Encelia farinosa*), agave (*Agave deserti*), Ocotillo (*Fouquieria splendens*), pidmy cedar (*Peucephyllum schottii*), and crossosoma (*Crossosoma bigelovii*). Rocky slopes habitat connects with vast areas of mountainous wildlands and supports wide-ranging animals, including Peninsular bighorn sheep, mountain lion, bobcat, prairie falcon, and golden eagle. In Cathedral City, this habitat type extends from the edge of the alluvial plain at the southern end of the planning area into the Santa Rosa Mountains.



## Special Status Species

The General Plan planning area includes a number of species designated as “endangered” or “threatened” by the federal and state governments (see Section 2.5.3 for definitions). “Sensitive” species are those that are naturally rare and have been locally depleted and put at risk by human activities. Endangered, threatened, and sensitive species occurring or potentially occurring in the General Plan planning area are identified in the following table. Exhibits 2.5-2 and 2.5-3 show the boundaries of modeled habitat for many of these species in the General Plan area, as determined by the CVMSHCP.

**Table 2.5-1**  
**Sensitive Communities and Species**  
**Occurring or Potentially Occurring in the Cathedral City Study Area**

Species Name (Fed/State)	Scientific Name	Conservation Status
<b>PLANT COMMUNITIES</b>		
Desert Dry Wash Woodland	N/A	ND/CHIP
Sand Dunes and Fields	N/A	ND/CHIP
Desert Fan Palm Oasis Woodland	N/A	ND/CHIP
<b>PLANTS</b>		
California ditaxis	<i>(Ditaxis serrata)</i>	FSC/ND
Coachella Valley milkvetch	<i>(Astragalus lentiginosus var. coachellae)</i>	FE/ND
Flat-seeded spurge	<i>(Chamaesyce platysperma)</i>	FSC/ND
Payson’s jewelflower	<i>(Caulanthus simulans)</i>	FSC/ND
<b>INVERTEBRATES</b>		
Coachella giant sand-treader cricket	<i>(Macrobaenetes valgum)</i>	FSC/ND
Coachella Valley Jerusalem cricket	<i>(Stenopelmatus calhuilaensis)</i>	FSC/ND
Coachella Valley grasshopper	<i>(Spaniacris deserticola)</i>	FSC/ND
Casey’s June Beetle	<i>(Dinacoma caseyi)</i>	END/ND
<b>AMPHIBIANS AND REPTILES</b>		
Desert tortoise	<i>(Gopherus agassizi)</i>	FT/ST
Desert slender salamander	<i>(Batrachoseps aridus)</i>	FE/SE
Flat-tailed horned lizard	<i>(Phrynosoma mcallii)</i>	FTP/CSC
Coachella Valley fringe-toed lizard	<i>(Uma inornata)</i>	FE/SE
Common chuckwalla	<i>(Sauromalus obesus)</i>	FSC/ND
<b>BIRDS</b>		
Ferruginous hawk	<i>(Buteo regalis)</i>	FSC/CSC
Golden eagle	<i>(Aquilachrysaetos)</i>	ND/CSC
Merlin	<i>(Falco columbarius)</i>	ND/CSC
Prairie falcon	<i>(Falco mexicanus)</i>	ND/CSC
Peregrine falcon	<i>(Falco peregrinus)</i>	FE/SE
Burrowing owl	<i>(Athene cunicularia)</i>	FSC/CSC
Crissal thrasher	<i>(Toxostoma crissale)</i>	ND/CSC
LeConte’s thrasher	<i>(Toxostoma lecontei)</i>	FSC/CSC
Southwestern yellow flycatcher	<i>(Empidonax trailii extimus)</i>	FPE/SE
Least Bell’s vireo	<i>(Vireo bellii pusillus)</i>	FE/SE
Yellow warbler	<i>(Dendroica petechia brewsteri)</i>	ND/CSC

Yellow-breasted chat	<i>(Icteria virens)</i>	ND/CSC
Summer tanager	<i>(Piranga rubra)</i>	ND/CSC
Osprey	<i>(Pandion haliaetus)</i>	ND/CSC
Northern harrier	<i>(Circus cyaneus)</i>	ND/CSC
Sharp-shinned hawk	<i>(Accipiter striatus)</i>	ND/CSC
Cooper's hawk	<i>(Accipiter cooperii)</i>	ND/CSC
Long-eared owl	<i>(Asio otus)</i>	ND/CSC
Southwestern willow flycatcher	<i>(Empidonax traillii extimus)</i>	FPE/SE
Vermilion flycatcher	<i>(Pyrocephalus rubinus)</i>	ND/CSC
Bendire's thrasher	<i>(Toxostoma bendirei)</i>	ND/CSC
Loggerhead shrike	<i>(Lanius ludovicianus)</i>	ND/CSC

**MAMMALS**

California leaf-nosed bat	<i>(Macrotis californicus)</i>	FSC/CSC
Spotted Bat	<i>(Euderma maculatum)</i>	FSC/CSC
California mastiff bat	<i>(Eumops perotis californicus)</i>	FSC/CSC
Yuma myotis	<i>(Myotis yumanensis)</i>	FSC/CSC
Western small-footed myotis	<i>(Myotis ciliolabrum)</i>	FSC/ND
Pale big-eared bat	<i>(Plecotus townsendii pallescens)</i>	FSC/CSC
Pallid bat	<i>(Antrozous pallidus)</i>	ND/CSC
Pocketed free-tail bat	<i>(Tadarida femorosacca)</i>	ND/CSC
Palm Springs ground squirrel	<i>(Spermophilus tereticaudus)</i>	FSC/CSC
Palm Springs little pocket mouse	<i>(Perognathus longimembris ssp. bangsi)</i>	FSC/CSC
Southern grasshopper mouse	<i>(Onychomys torridus ssp. ramona)</i>	FSC/ND
American badger	<i>(Taxidea taxus)</i>	ND/CSC
Peninsular bighorn sheep	<i>(Ovis canadensis cremnobates)</i>	FE/ST

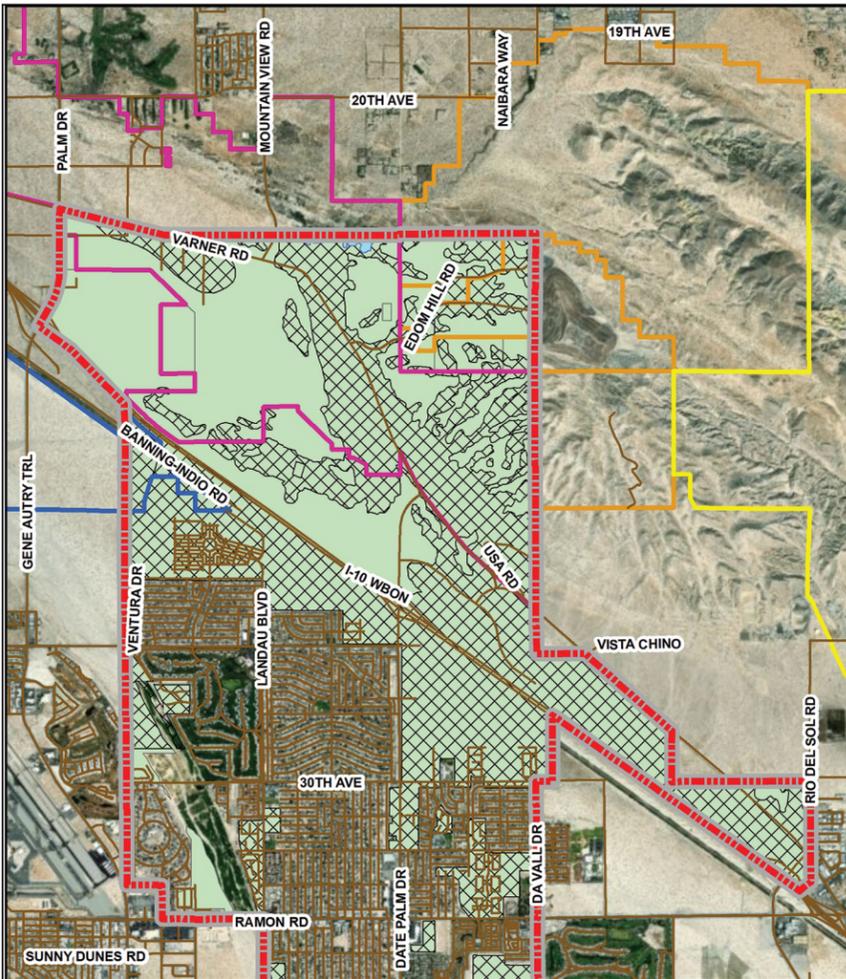
Source: Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan, 2007; Biological Resources Assessment for the Cathedral City General Plan Update, prepared by Terra Nova Planning and Research, Inc. 2001; "Determination of Endangered Status for Casey's June Beetle and Designation of Critical Habitat," Federal Register Vol. 76, No. 184, September 22, 2011.

**Federal Status Designations: (Federal Endangered Species Act, US Fish and Wildlife Service):**

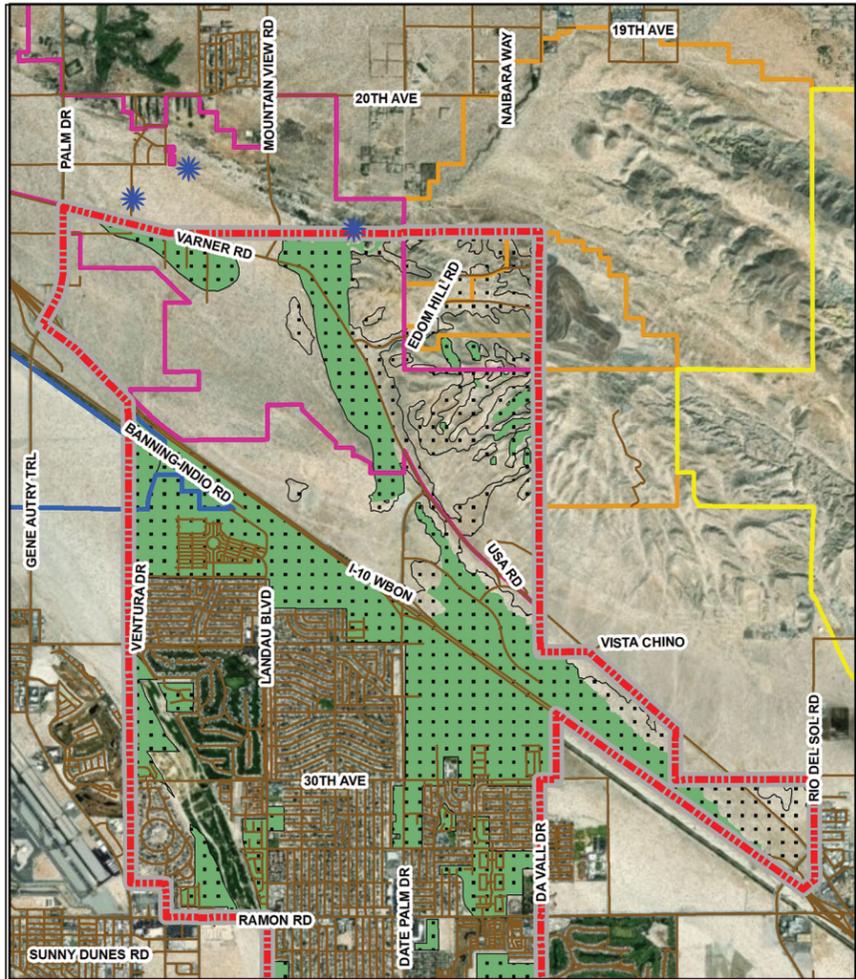
- FE: Federally listed as "Endangered"
- FT: Federally listed as "Threatened"
- FPE: Federally proposed as "Endangered"
- FSC: Federal Species of Concern
- FC: Candidate for Federal Listing
- ND: Not designated

**State Status Designations: (California Endangered Species Act, California Department of Fish and Wildlife):**

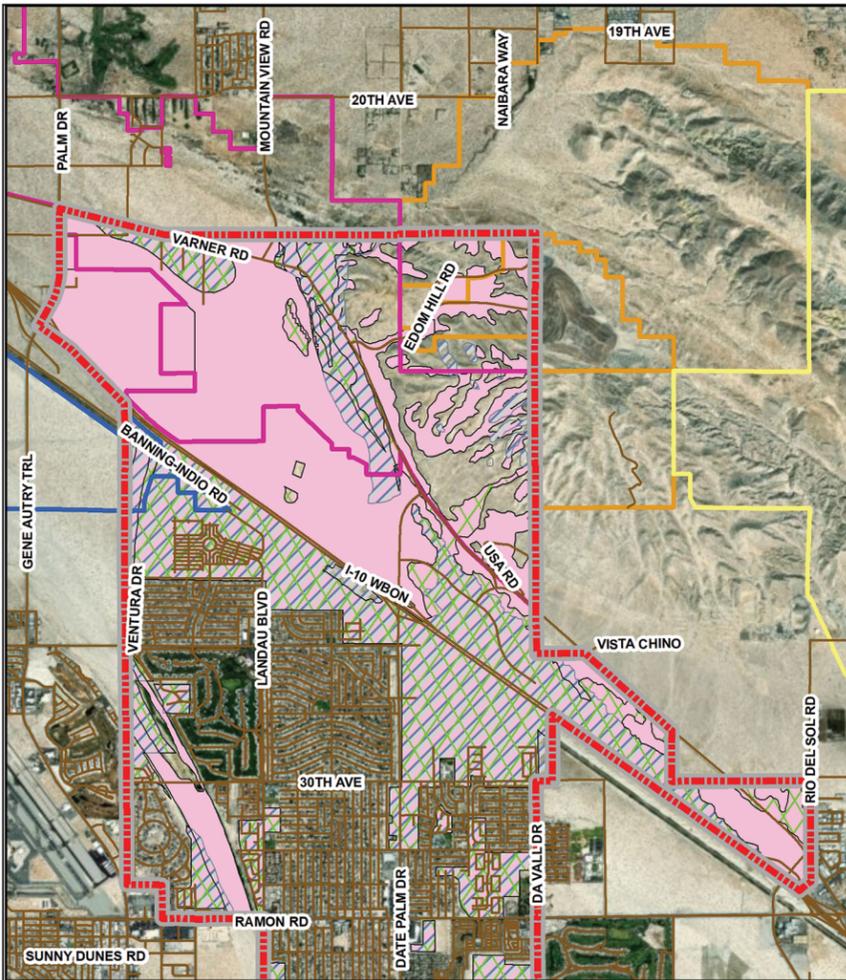
- SE: State listed as "Endangered"
- ST: State listed as "Threatened"
- CSC: California Species of Special Concern
- ND: Species not designated



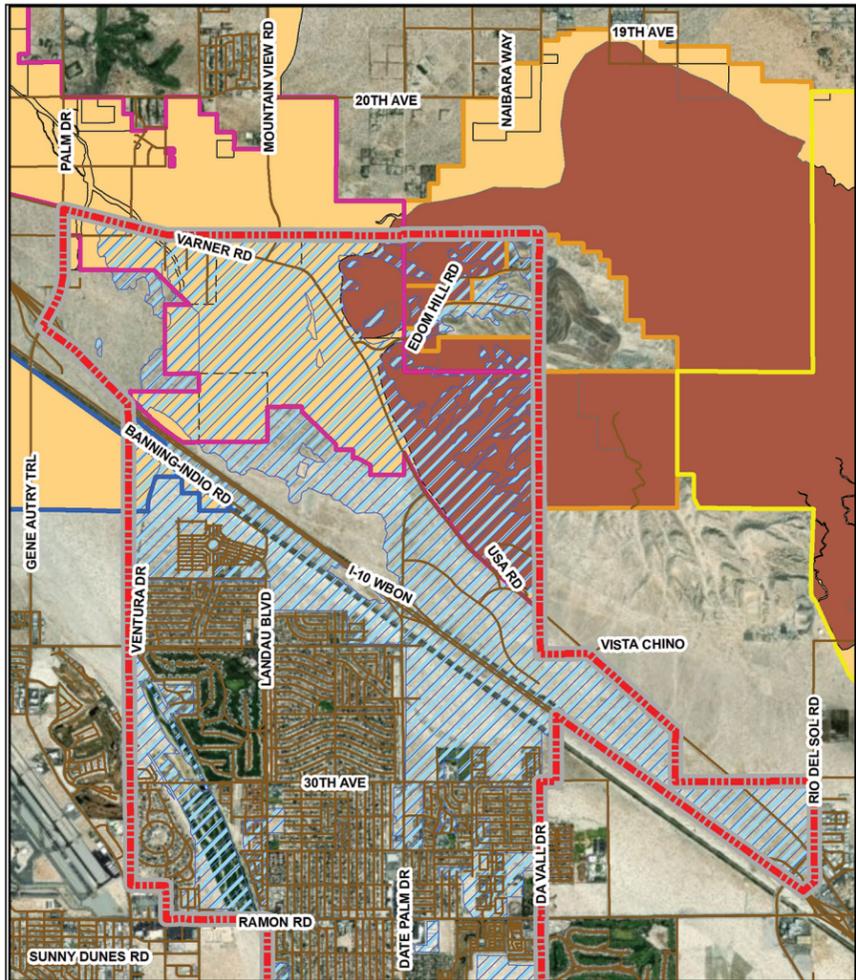
- Least Bell's Vireo, Summer Tanager, Yellow-breasted Chat, Yellow Warbler, & Crissal Thrasher
- Coachella Valley Milkvetch
- Le Conte's Thrasher



- Coachella Valley Jerusalem Cricket
- Coachella Giant Sand Treader Cricket
- Burrowing Owl Locations



- Flat-tailed Horned Lizard
- Fringe-toed Lizard
- Palm Springs Pocket Mouse

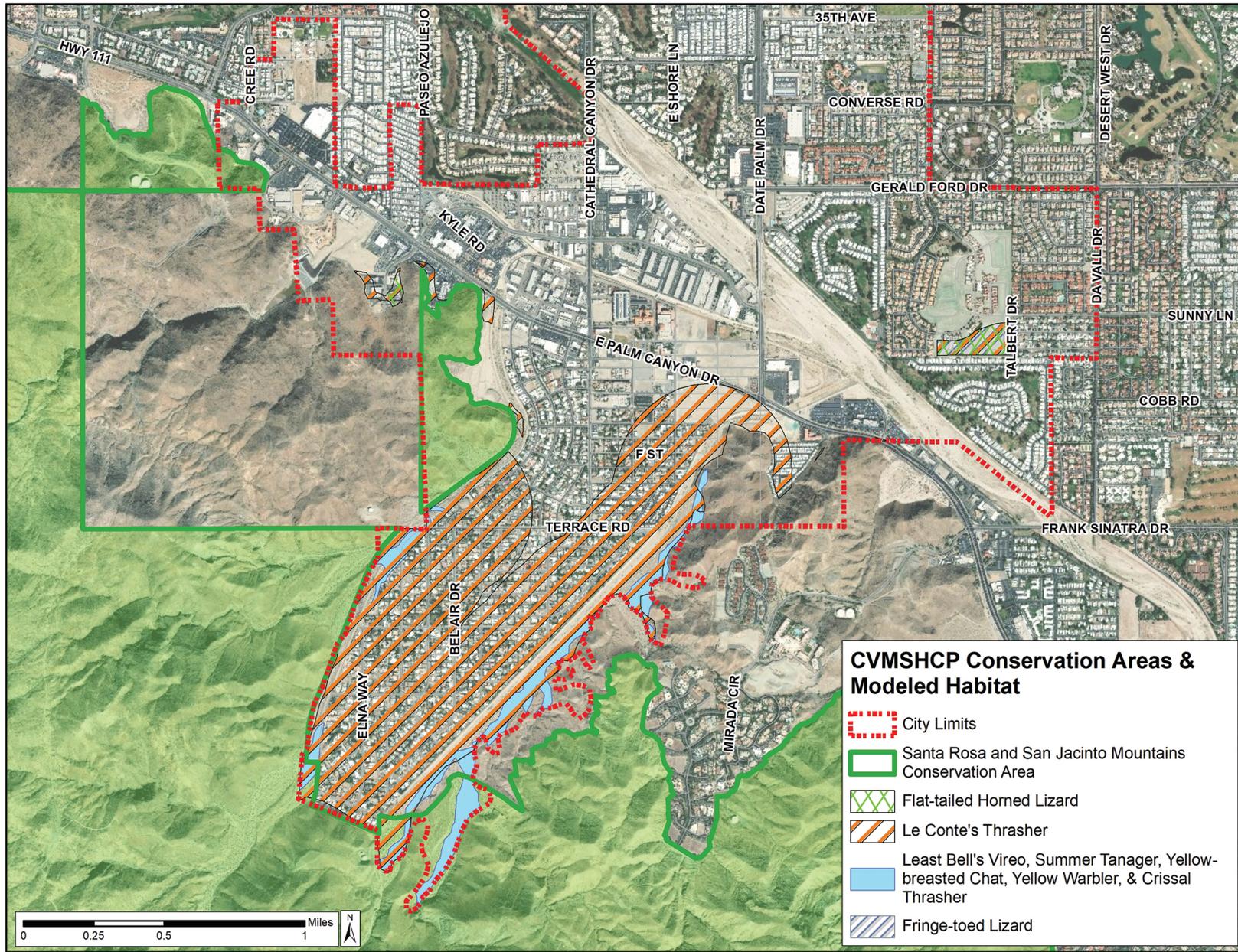


- Palm Springs Ground Squirrel
- Sand Source
- Sand Transport

**CVMSHCP Conservation Areas & Modeled Habitat Legend**

City Limits	Whitewater Floodplain CA
Edom Hill CA	Willow Hole CA
Thousand Palms CA	





**CVMSHCP Conservation Areas & Modeled Habitat**

-  City Limits
-  Santa Rosa and San Jacinto Mountains Conservation Area
-  Flat-tailed Horned Lizard
-  Le Conte's Thrasher
-  Least Bell's Vireo, Summer Tanager, Yellow-breasted Chat, Yellow Warbler, & Crissal Thrasher
-  Fringe-toed Lizard

## 2.5.6 Project Impacts

Will the proposed Project:

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

As shown in Table 2.5-1, the General Plan planning area contains or potentially contains (due to the presence of favorable habitat conditions) numerous sensitive species, including some designated as endangered or threatened by the USFWS and CDFW. Some have been identified for conservation or protection in the CVMSHCP and Agua Caliente Tribal HCP, and some are subject to land management policies and plans of the BLM and other regulatory agencies.

Most land south of I-10 is developed and not known to support substantial populations of sensitive species. Where development has occurred, native soils, vegetation, habitat, and animals have been removed, displaced and/or highly fragmented. Natural aeolian (wind) and hydrologic (fluvial) processes that these habitats rely on have been interrupted. Development, including I-10, UPRR lines and tamarisk windrows, have reduced or entirely cut off habitat connections and migration corridors, and limited the potential to sustain substantial populations over the long-term. The value of remaining habitat has been further diminished by the edge effects of development, such as trash dumping, off-highway vehicle use, and the presence of domestic pets. Nonetheless, some land south of I-10 may still harbor individuals or limited populations of sensitive species and sand field habitat.

Land north of I-10 remains largely undeveloped. As noted above, major portions of this area remain in conservation as designated by the US BLM ACEC and in CVMSHCP Conservation Areas. These conserved or to-be-conserved areas have been identified as containing special-status species and/or unique habitat conditions that support them and are managed through local or regional plans, policies, or regulations.

The proposed General Plan Update would facilitate future urban development that could disturb or permanently remove sensitive species and/or their habitats. Lands within designated conservation areas would continue to be protected under the Proposed Project. Impacts would be reduced or mitigated to less than significant levels through a variety of mechanisms. First, the Biological Resources Sub-Element of the General Plan Update includes several policies and programs that would preclude or reduce impacts to sensitive species. Policy 1 requires the City to continue to participate in the preservation of habitat for endangered, threatened, and sensitive species. Program 1.A requires the City to work with the Coachella Valley Conservation Commission (CVCC) to maintain updated maps of sensitive plant and animal species and habitats. Program 1.B requires the City to continue to implement and abide by the CVMSHCP, and Program 1.E requires the City to help assure development on tribal land conforms to the provisions of the Tribal HCP. Per Program 1.C, the City will continue to require biological resource surveys for new development, where required, in compliance with applicable state and federal requirements. Program 1.F identifies specific requirements for protecting Casey's June Beetle from potential adverse impacts. Program 1.D requires consideration of impacts to windblown sand transport when development is proposed in the vicinity of the Willow Hole Conservation Area and Willow Hole-Edom Hill Preserve, as they could adversely affect sand-dependent sensitive species.

Additionally, the proposed General Plan Update land use plan preserves most sensitive habitat and wildlife areas as Open Space or low-intensity land uses. The CVMSHCP Willow Hole Conservation Area is mostly designated Open Space-Public Park, with smaller pockets designated for Hillside Reserve (1 dwelling unit per 20 acres) and Estate Residential (0-2 dwelling units per acre). The northern portion of the CVMSHCP Edom Hill Conservation Area is

designated Open Space-Public/Park, and the southern portion is designated Hillside Reserve, which ensures that any further development on these lands will be very limited and that impacts to this habitat will be less than significant. Most of the CVMSHCP Whitewater River Floodplain Conservation Area is designated Open Space-Other with limited Industrial acreage near the railroad and outside the Conservation Area.

Finally, future development projects facilitated under the proposed General Plan would be evaluated on a project-by-project basis for potential adverse impacts to sensitive species and required to implement mitigation measures, as needed. Impacts to Covered species would also be mitigated through the payment of HCP mitigation fees (Mitigation Measures BIO-1 and BIO-2). Land use adjacency guidelines would be implemented for projects within or adjacent to CVMSHCP Conservation Areas (Mitigation Measure BIO-1). Focused species surveys would be required in compliance with applicable state and federal requirements, as described below and in Mitigation Measures BIO-3 through BIO-6.

- *Burrowing owl*: is a covered species under the CVMSHCP, but neither the federal Clean Water Act nor the state NCCP for the CVMSHCP provides take of this species, which is subject to the MBTA. The species nests and roosts underground, including along canals and flood control levees and channels, and is particularly vulnerable to ground disturbing activities. Protocols have been developed for burrowing owl surveys prior to ground disturbance (Mitigation Measure BIO-3).
- *Bird Species for which MBTA Take is not Permitted*: The following bird species are Covered species under the CVMSHCP but, like the burrowing owl, the federal permit for the CVMSHCP does not allow their take under the MBTA: crissal thrasher, Le Conte's thrasher, yellow warbler, yellow-breasted chat, and summer tanager. Nesting habitat for these species may be available in the City, and future development facilitated by the General Plan could remove it. Nesting bird surveys for compliance with the MBTA will prevent take of MBTA-protected species (Mitigation Measure BIO-4).
- *Other Special-Status Bird Species Not Included in the CVMSHCP*: The Cooper's hawk, vermilion flycatcher, and loggerhead shrike are special-status species which may nest in the City. They are protected from take by the MBTA. Nesting bird surveys for compliance with the MBTA will prevent impacts to these species (Mitigation Measure BIO-4).
- *Bats*: Focused surveys may be required to ensure that bats are not present so that they are not harmed or disturbed by construction activities. Some potential roost sites detected in the General Plan planning area include areas under bridges and structures associated with I-10, UPRR, and the Whitewater River Stormwater Channel (Mitigation Measure BIO-5).
- *Casey's June Beetle (CJB)*: was listed by the USFWS as an endangered species after adoption of the CVMSHCP. As such, it is not a Covered Species under the CVMSHCP but is protected under the federal ESA. Development proposed in CJB survey areas (established by the USFWS) would be required to conduct site assessments and focused species surveys in accordance with USFWS protocols (Mitigation Measure BIO-6).

In summary, impacts to sensitive species would be mitigated to less than significant levels through policies and programs of the proposed General Plan Biological Resources Sub-Element, General Plan land use plan, and Mitigation Measures BIO-1 through BIO-6 that would apply to future development in the planning area.

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?***

Riparian areas occur at the transition between dry and wet environments. In the General Plan planning area, riparian habitat is generally found along major drainages, such as the Whitewater River Stormwater Channel and East and West Cathedral Canyon Channels. Sensitive natural communities in the planning area, as determined by CDFW, include the California fan palm oasis at the Willow Hole-Edom Hill Area of Critical Environmental Concern (ACEC).<sup>9</sup>

The General Plan Update would not impact the California fan palm oasis at Willow Hole. The proposed land use plan designates the area as Open Space, and the General Plan would not alter or otherwise affect its conservation management policies or protections.

The proposed General Plan Update would have no or a limited potential impact on riparian habitat located in the planning area, and development opportunities near riparian habitat in the planning area are limited. Along the East and West Cathedral Canyon Channels, land on the Cove side of the channels is already developed, and land on the mountain side of the channels is designated as Open Space. Along the Whitewater River, the channel itself is designated as Open Space, and most adjacent parcels are already developed. Nonetheless, the possibility exists for additional development to occur in the vicinity of riparian habitat. Impacts would be minimized by implementation of General Plan Biological Resources Sub-Element Policy 2, which requires the City to evaluate development projects for their impacts on existing habitat and wildlife, and for the land's value as viable open space. The City may require site-specific biological assessments to evaluate potential impacts to riparian habitat and the need for mitigation measures. Project-specific impacts would be less than significant with implementation of Mitigation Measures BIO-7 through BIO-10.

- 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?***

The City is located in an arid desert environment with annual average rainfall of about 4 inches. It is approximately 80 miles inland and contains no coastal lands.

Wetlands are defined at 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” Wetlands and other special aquatic sites possess special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values.

The USFWS National Wetlands Inventory mapping database identifies all surface water and wetlands as a single feature on a map.<sup>10</sup> The maps are prepared from high altitude imagery based on visible vegetation, hydrology and geography, and the USFWS has determined that on-the-ground site inspection may result in classification revisions. In Cathedral City, the inventory identifies the Whitewater River Stormwater Channel, East Cathedral Canyon Channel, and drainage from East Wide Canyon (north of I-10) as part of “riverine” systems that include “wetlands and deepwater habitats contained within a channel that periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.” In Cathedral City, these drainages can contain and convey stormwater during rain events, but they are typically dry with little to no standing water.

No designated wetlands have been identified in the planning area. Nonetheless, Policy 10 of the General Plan Water Resources Sub-Element requires new development to protect the quality of water bodies and natural drainage systems through sound design, source controls, storm water treatment, runoff reduction measures, and best management practices. As warranted based on location, proximity to potential wetlands, and other project-specific

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<sup>9</sup> California Sensitive Natural Communities listing, California Department of Fish and Wildlife, October 15, 2018.

<sup>10</sup> USFWS National Wetlands Inventory, [www.fws.gov/wetlands/Data/Mapper.html](http://www.fws.gov/wetlands/Data/Mapper.html), accessed January 2019.

characteristics, the City may require assessments of hydrologic, soils and habitat conditions to determine whether and to what extent future development projects will impact wetlands, as well as the need for mitigation (see Mitigation Measures BIO-7 through BIO-10). Implementation of these measures will reduce potential impacts of future development on wetlands to less than significant levels.

***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?***

The City contains no natural aquatic resources that could support fish; therefore, the General Plan Update will have no impact on the movement of fish species.

Most parcels on the valley floor in the General Plan area are developed and surrounded by elements of the built environment, including buildings, roads, walls and fences, and utility infrastructure. Any wildlife migratory corridors that may have existed have been largely removed or interrupted by urban development. The habitat value of scattered undeveloped parcels may have been diminished by the edge effects of surrounding development, such as trash dumping, off-highway vehicle use, and the presence of domestic pets. They are not known to serve as notable wildlife nursery sites but could serve as nesting sites for birds. Future development facilitated by the General Plan Update could impact nesting birds if construction occurs during nesting seasons; however, implementation of MBTA surveys (Mitigation Measure BIO-4) would reduce potential impacts to less than significant levels.

According to the CVMSHCP, important wildlife corridors or linkages in Cathedral City include: 1) land between I-10 and the railroad near the western City limits in the Whitewater River Floodplain Conservation Area,<sup>11</sup> 2) land north of I-10 near the western City limits in the Willow Hole Conservation Area,<sup>12</sup> and 3) all of the Edom Hill Conservation Area.<sup>13</sup> The proposed General Plan Update designates much of this land as Open Space, but designates some of it for low-intensity development, including Hillside Reserve (1 dwelling unit per 20 acres) and Estate Residential (0-2 dwelling units per acre). Development could result in the construction of barriers to wildlife movement, such as fences, walls, buildings, and roads. Development within and adjacent to Conservation Areas is subject to land use adjacency guidelines, which could also reduce potential impacts. Development on these lands is also generally constrained by steep and unstable slope, as described in Section 2.8.

The General Plan Biological Resources Sub-Element includes Policy 3 and Program 3.A by which the City would encourage and cooperate with other agencies in establishing multiple-use corridors that take advantage of drainage channels and utility easements as wildlife movement corridors, public access ways, and linkages between open space areas and the built environment. Implementation of these measures would reduce potential impacts to less than significant levels.

***e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

The City does not have a tree preservation or similar ordinance that protects trees in general or particular biological resource. However, the City is a Permittee to the CVMSHCP/NCCP and it cooperates with the Agua Caliente Band of Cahuilla Indians to assure development projects on tribal lands in the City abide by the provisions of the Tribal HCP.

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<sup>11</sup> CVMSHCP Figure 4-11d.

<sup>12</sup> CVMSHCP Figure 4-13d.

<sup>13</sup> CVMSHCP Figure 4-15d.

The Biological Resources Sub-Element of the General Plan Update includes Programs 1.B, 1.D, 1.E, and 4.A that support the City’s continued participation in implementation of the above-referenced HCPs. Future development facilitated by the General Plan would be required to mitigate impacts to Covered Species through the payment of local development mitigation fees (Mitigation Measures BIO-1 and BIO-2). Development within or adjacent to a CVMSHCP Conservation area would be subject to land use adjacency guidelines (BIO-1). The General Plan Update will continue to implement all the above-mentioned plans and policies and, therefore, impacts would be less than significant.

***f) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.***

As previously discussed, the City is a Permittee to the CVMSHCP/NCCP and cooperates with the Agua Caliente Band of Cahuilla Indians to implement the Tribal HCP on tribal lands within City boundaries. The proposed General Plan Update includes Programs 1.B, 1.D, 1.E, and 4.A that provide for the City’s continued participation in both HCPs, including requiring future development projects to pay local development mitigation fees and protection of CVMSHCP Conservation Areas through implementation of land use adjacency guidelines (Mitigation Measures BIO-1 and BIO-2). The General Plan would not conflict with the provisions of either plan; no impact would occur.

### **2.5.7 Mitigation Measures**

As discussed throughout the proposed general Plan and this EIR, a wide range of avoidance, minimization and mitigating policies and programs are established by the Proposed Project. The following mitigation measures reiterate these policies and programs and would apply, as appropriate, to specific development projects in the General Plan planning area.

**BIO-1 Mitigation Related to the CVMSHCP**

To the extent applicable, the City shall comply with all terms and conditions of the CVMSHCP and Implementing Agreement including, but not limited to: implementation of the “Land Use Adjacency Guidelines” as described in Section 4.5 of the CVMSHCP and collection of approved CVMSHCP land development mitigation fees.

**BIO-2 Mitigation Related to the Tribal HCP**

The City shall cooperate and coordinate with the Agua Caliente Band of Cahuilla Indians to help assure the development on tribal lands in the planning area conforms to the provisions of the Tribal Habitat Conservation Plan.

**BIO-3 Mitigation Related to Burrowing Owl**

For projects that contain suitable habitat for Burrowing Owl, a “take avoidance survey” for the burrowing owl no less than 14 days (in accordance with the Staff Report on Burrowing Owl Mitigation [CDFW 2012]) and no more than 30 days prior to groundbreaking activities shall be required. Additionally, a final survey must be conducted within 24 hours of the initiation of ground disturbance activities in accordance with the CDFW 2012 protocol.

- a. If no burrowing owls are detected during those surveys, implementation of ground disturbance activities could proceed without further consideration of this species assuming there is no lapse between the surveys and construction as the protocol states “time lapses between Project activities trigger subsequent take avoidance surveys including but not limited to a final survey conducted within 24 hours prior to ground disturbance.”

- b. If burrowing owls are detected during the take avoidance surveys, avoidance and minimization measures would then be required and could include the establishment of a buffer zone, the passive or active relocation of the individual(s) or other measures approved by the CDFW.

**BIO-4 Mitigation Related to MBTA**

If ground disturbance, tree or plant removal is proposed between February 1st and August 31st, a qualified biologist shall conduct a nesting bird survey within 7 to 10 days of initiation of grading onsite focusing on MBTA covered species. If active nests are reported, then species-specific measures shall be prepared. At a minimum, grading in the vicinity of a nest shall be postponed until the young birds have fledged. For construction between September 1st and January 31th, no pre-removal nesting bird survey is required.

- a. In the event active nests are found, exclusionary fencing shall be placed 200 feet around the nest until such time as nestlings have fledged. Nests of raptors and burrowing owls shall be provided a 500-foot buffer. Ground disturbance between September 1 and January 31 shall be exempt from this requirement.

**BIO-5 Mitigation Related to Bats**. Focused surveys shall be conducted to ensure that bats are not present to avoid or minimize harm or disturbance by construction activities. Potential roost sites include, but may not be limited to, bridges associated with I-10, UPRR, and the Whitewater River Stormwater Channel, and any other structures in the project area that could provide roosts for bats.

**BIO-6 Mitigation Related to Casey's June Beetle**. Projects in the USFWS-designated CJB survey area shall be required to conduct pre-construction site assessments and species surveys in accordance with USFWS protocols and requirements. Should the species be detected onsite, an appropriate mitigation program shall be developed in cooperation with the project proponent, USFWS, and other appropriate parties.

**Mitigation Related to Jurisdictional Waters and Wetlands**

As warranted, proposed development projects shall be evaluated for their potential to impact waters to the United States and State of California and shall be required to meet all project mitigation requirements.

**BIO-7** Prior to the initiation of any construction within areas determined by a Jurisdictional Delineation to be waters of the US, a permit or permits shall be approved and issued by the USACE under Section 404 of the CWA to authorize the discharge of dredged or fill material into waters of the US.

**BIO-8** Prior to the initiation of any construction within areas determined by a Jurisdictional Delineation to be waters of the US or the State, a Water Quality Certification shall be approved and issued by the Colorado River RWQCB (Region 7) under Section 401 of the CWA.

**BIO-9** Prior to the initiation of any construction within areas determined by a Jurisdictional Delineation to be waters of the State, a permit or permits shall be approved and issued by the Colorado River RWQCB (Region 7) under the Porter Cologne Water Quality Control Act.

**BIO-10** Prior to the initiation of any construction within areas determined by a Jurisdictional Delineation to be waters of the State, a 1602 Streambed Alteration Agreement shall be approved and issued by the California Department of Fish and Wildlife.

With the implementation of the mitigation measures set forth above, potential impacts will be mitigated to less than significant levels.

### **2.5.8 Significance After Mitigation**

With adherence to the policies and programs set forth in the proposed General Plan, and mitigation measures set forth above, impacts to biological resources would be reduced to less than significant levels.

### **2.5.9 Cumulative Impacts**

The proposed General Plan update will facilitate new development in Cathedral City and contribute to urbanization trends occurring throughout the Coachella Valley, including the conversion of vacant land to development and permanent removal or alteration of native plants and habitat. However, the General Plan land use map preserves sensitive habitat and biological resources as open space and, where feasible, designates adjacent land for conservation or low-intensity land uses to minimize impacts to sensitive species. It includes numerous policies and programs requiring the City's continued participation in efforts to protect sensitive biological resources on a regional level and in conjunction with tribal authorities, neighboring jurisdictions, regional entities, and wildlife resource agencies. The City would continue to require project-specific biological evaluations and mitigation measures, where necessary, for individual projects to minimize impacts at the local level. Therefore, the impacts of the General Plan on biological resources would not be cumulatively considerable.

## 2.6 Cultural and Tribal Cultural Resources

### 2.6.1 Introduction

This section evaluates the potential for the Proposed Project to result in adverse impacts to cultural resources. Cultural resources include Native American tribal cultural resources, archaeological resources, historic resources, and human remains. Mitigation measures to reduce impacts to a less than significant level are identified, where appropriate.

### 2.6.2 Thresholds of Significance

The California Environmental Quality Act (CEQA) prescribes how the Lead Agency must address issues related to archaeological, historic, and tribal cultural resources. The State CEQA Guidelines state that the term “historical resources” applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources. The definition also includes resources listed in a local register of historical resources or identified as significant in an historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code. According to Public Resources Code Section 5020.1, “historical resources” include, but are not limited to, an object, building site, area, place, record, or manuscript that is historically or archaeologically significant.

#### Cultural Resources

According to Appendix G of the CEQA Guidelines, the Project would have a significant effect on cultural resources if it would:

- a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5.
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5.
- c) Disturb any human remains, including those interred outside of dedicated cemeteries.

#### Tribal Cultural Resources

According to recent Appendix G of the CEQA Guidelines, the Project would have a significant effect on tribal cultural resources if it would:

- a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
  - i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
  - ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

### 2.6.3 Regulatory Framework

#### Federal

##### National Historic Preservation Act

The National Historic Preservation Act (NHPA) was established in 1966 by the Advisory Council on Historic Preservation (ACHP) with the goal of encouraging federal agencies to factor historic preservation into federal project requirements. ACHP is an independent federal agency that promotes the preservation, enhancement, and productive use of the nation's historic resources, and advises government leaders on national historic preservation policy. The ACHP defines “historic properties” as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places.”

Section 106 of the NHPA applies when two thresholds are met: 1) there is a federal or federally licensed action, including grants, licenses, and permits, and 2) that action has the potential to affect properties listed in or eligible for listing in the National Register of Historic Places. Section 106 requires each federal agency to identify and assess the effects of its actions on historic resources. If it is determined that a proposed action has the potential to affect historic properties, the federal agency must identify the appropriate State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO) to consult with during the process.

The federal agency reviews background information, consults with the SHPO/THPO and others, seeks information from knowledgeable parties, and conducts additional studies as necessary. If the federal agency finds that no historic properties are present or affected, it provides documentation to the SHPO/THPO, who has 30 days to provide written comment or objection. If there is no objection, the agency proceeds with its undertaking. If the agency finds that historic properties are present, it proceeds to assess possible adverse effects.

##### National Register of Historic Places

Authorized under the NHPA, the National Register of Historic Places is the nation’s official list of cultural resources that qualify for preservation. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture. The following criteria are used to determine eligibility for inclusion in the National Register. These criteria have been developed by the National Park Service as provided for in the NHPA:

- a) Are associated with events that have made a significant contribution to the broad patterns of our history;
- b) Are associated with the lives of persons significant in our past;
- c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) That yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

In addition to the criteria for evaluation above, the National Register maintains a list of property types or circumstances that generally do not qualify for the National Register. These are: cemeteries, birthplaces or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years.

#### State

##### California Public Resources Code

The California Environmental Quality Act (CEQA) is the principal statute governing the environmental review of projects within the State. The State of California’s Public Resources Code (PRC) establishes the definitions and criteria for “historical resources,” which require similar protection to what the NHPA mandates for historic

properties. According to PRC Section 5020.1(j), a “historical resource includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.”

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CEQA Guidelines Section 15064.5 apply. If an archaeological site does not meet the CEQA Guidelines criteria for a historical resource, then the site may meet the threshold of PRC Section 21083 regarding unique archaeological resources.

In addition, PRC Section 5097.98 states that if Native American human remains are identified within a project area, the landowner must notify and consult with the Native American Most Likely Descendant (MLD), as identified by the Native American Heritage Commission (NAHC), to develop a plan for proper treatment and/or removal of the human remains and associated burial artifacts. These procedures are also addressed in Section 15046.5 of the CEQA Guidelines and within the California Health and Safety Code (see discussion below).

#### Senate Bill 18

Senate Bill (SB) 18 (2004) requires cities and counties to contact and consult with California Native American tribes before adopting or amending a General Plan or Specific Plan or designating land as Open Space, for the purpose of protecting Native American cultural places. Notice must be given to tribes that are on the contact list maintained by the NAHC. Once contacted, tribes have 90 days to request consultation, and the city or county in which the cultural place is located must conduct consultations with any tribe that has given notice. The local government also notices the tribe 45 days prior to taking action on, and 10 days prior to a public hearing on, the General Plan adoption or amendment. The purpose of SB 18 is to establish meaningful consultation between tribal governments and local governments early in the planning process to avoid potential conflicts.

Cultural places are defined as “places, features, and objects described in Sections 5097.9 and 5097.995 of the Public Resources Code.” Section 5097.9 defines cultural places as Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines. Section 5097.995 defines them as Native American historic, cultural, or sacred sites that are listed or may be eligible for listing in the California Register of Historic Resources pursuant to Section 5024.1, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site.

#### Assembly Bill 52

Assembly Bill (AB) 52 was passed by the California Legislature and signed into law by the Governor in 2015. It established a new category of resources in CEQA called Tribal Cultural Resources (Public Resources Code § 21074). “Tribal cultural resources” are either of the following:

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

- (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
- (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

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

AB 52 establishes a formal project consultation process for California Native American tribes and lead agencies regarding tribal cultural resources, referred to as government-to-government consultation. Per Public Resources Code Section 21080.3.1(b), the AB52 consultation process must begin prior to release of an environmental impact report, mitigated negative declaration, or negative declaration.

Native American tribes to be included in the formal consultation process are those that have requested notice of projects proposed within the jurisdiction of the lead agency. The City of Cathedral City has and continues to carry out on-going consultations with local area tribes and other interested tribes in establishing the presence and protection of tribal cultural resources.

#### California Register of Historical Resources

For CEQA purposes, “historical resources” applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the Lead Agency (Title 14 CCR Section 15064.5(a)(1)-(3)). CEQA guidelines mandate that “generally a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register of Historical Resources” (Title 14 CCR Section 15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

- a) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- b) Is associated with the lives of persons important in the State’s past.
- c) 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.
- d) Has yielded, or may be likely to yield, information important in prehistory or history. (Public Resources Code section 5024.1(c))

#### California Health and Safety Code

California Health and Safety Code Section 7050.5 regulates the treatment of human remains. According to the Code, 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 overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined that the remains are not subject to further investigation. If the coroner recognizes or has reason to believe that the human remains are those of a Native American, he or she shall contact the NAHC to determine the Most Likely Descendant (MLD). Consultation with the designated MLD will determine the final disposition of the remains.

### **Regional and Local**

#### Cathedral City General Plan

The proposed Cathedral City General Plan Archaeological and Historic Resources Element includes policies that are part of a local regulatory framework within which cultural resources are managed.

- Policy 1** The City will ensure that sites in archaeologically and historically sensitive areas are surveyed prior to development.
- Policy 2** The City shall make every effort to protect sensitive archaeological and historic resources from vandalism and illegal collection.
- Policy 3** The City shall encourage the Cathedral City Historical Society to establish a program to qualify and list locally significant resources on available state and federal registers.
- Policy 4** Encourage public participation and appreciation of archaeological and historic resources.
- Policy 5** Consider offering economic incentives, such as low-interest loans from all possible sources, and application/permitting fee reductions or waivers, to property owners to encourage the maintenance of significant historical and cultural buildings and sites.

## 2.6.4 Regional Environmental Setting

### Prehistoric Period in the Coachella Valley<sup>1</sup>

Based on current regional knowledge of artifacts and habitation sites dating back approximately 12,000 years, archaeologists have divided the pre-European epoch into five periods: Early Man Period, Paleo-Indian Period, Early Archaic Period, Late Archaic Period, and the Late Prehistoric Period. The prehistoric period in the Coachella Valley is generally divided into the Late Archaic Period and Late Prehistoric Period.

By about 1500 years ago, at the end of the Archaic Period, burial practices changed to cremations and a wider food base was exploited. Milling of foodstuffs continued extensively. The Late Prehistoric Period involved important cultural changes, including the introduction of pottery and the bow and arrow. Ceramics were locally introduced about 1200 years ago. Pottery was an innovation of peoples of the Colorado River, and its presence in the Coachella Valley indicates that contact occurred between inhabitants of the Coachella Valley and Colorado River settlements. From about 800 years ago to just before contact with Europeans in the 1700s, there is evidence of extensive contact and trade with tribes of the Colorado River. This included the distribution of pottery across the upper Colorado and Mojave Deserts. It is from this period that ethnic or tribal affiliations are best known.

### The Cahuilla<sup>2</sup>

The Cahuilla Indians are the most recently identifiable native culture to evolve in the Coachella Valley. They were a Takic-speaking, hunting and gathering people from the Great Basin region of Nevada, Utah, and eastern California whose migration into southern California occurred sometime between 1000 BC and AD 500. The Cahuilla are generally divided into three groups by anthropologists: Pass Cahuilla of the Banning-Beaumont area, Mountain Cahuilla from the Santa Rosa and San Jacinto Mountains, and Desert Cahuilla from the western Coachella Valley east to the Salton Sea.

The Cahuilla did not have a single name that referred to an all-inclusive tribal affiliation; rather, membership was in terms of lineages or clans, and each belonged to one or two main divisions of the people, known as moieties. Members of clans in one moiety had to marry into clans from the other moiety. Individual clans had villages, or central places, and territories they called their own. Each clan, or lineage, had its own food harvesting areas, ceremonial house, and lineage chief. However, a number of lineages cooperated with one another for political, social, and economic purposes.

Surveys performed by the U.S. Government Land Office (GLO) in the mid-1850s noted a large number of Native American villages, or rancherias, in the Coachella Valley. All or most of these settlements are believed to have been settlements of the Desert or Pass Cahuilla people. Prominent settlements were located adjacent to major resource areas, including the shorelines of Lake Cahuilla, along the “cove communities” areas supported by shallow wells, mesquite and wildlife resources, and in the Indian Canyons areas of Palm Canyon. Seasonal occupation sites were also associated with palm oases, which were an important source of water, food, and fiber.

It was not until the 1770s that the Cahuilla first encountered Europeans, when Spaniards crossed through Cahuilla territory in search of new land routes between Mexico and northern California. As time passed, relations between European settlers and the Cahuilla became strained due to conflicts over land ownership and exploitation, and religious and cultural practices. European disease, to which the Cahuilla had no immunity, furthered the gap between Indian and non-Indian relations. A smallpox epidemic in the early 1860s decimated the Cahuilla population, which declined from an estimated 6,000 to 10,000 people to only 2,500 individuals.

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<sup>1</sup> “Cultural Resources Technical Report – Cathedral City General Plan,” CRM Tech, July 2, 2001.

<sup>2</sup> Ibid; “Historic Resource Context & Historic Resource Program, Cathedral City, California,” Kaplan Chen Kaplan, November 21, 2017.

By the time the Valley was re-surveyed by the U.S. government in the early twentieth century, most of the villages and rancherias noted from earlier surveys had vanished, and signs of Euro-American influence, such as fences and irrigation ditches, were observed. The Cahuilla continue to inhabit parts of the Coachella Valley today and are mostly affiliated with one or more Native American reservations in the region. Among these are the Agua Caliente, Torres Martinez, Augustine, Cabazon, Morongo, and Twenty-Nine Palms Reservations.

### The Historic Period<sup>3</sup>

Historically significant sites are generally more than forty-five to fifty years of age but range from the period of the earliest European contacts, around the end of the 1700's, to about the end of World War II. Types of potentially significant sites range from permanent trails and highways to living areas and small-scale remains of single activities.

The Coachella Valley region was first explored by Spaniards making forays northward from Mexico along the coast and the Colorado River. The earliest documented period of Spanish influence began in 1769 when explorers moved into what was then referred to as Upper California to establish a military, political, and religious foothold. The development of land routes to supply inland missions brought the Spanish into the region in the 1770's. In 1821, the region fell under the influence of Mexico, as it secured its independence from Spain under the Treaty of Cordova. The issuance of land grants and the establishment of agricultural enterprises, under the organization of rancheros, dominated the region for the next thirty years.

The defeat of Mexico in the Mexican-American War and the signing of the Treaty of Guadalupe Hidalgo in 1848 ushered in a new era. With the region under American control and the discovery of gold in California, California was admitted into the Union in 1850, leading to an influx of peoples from many countries. The first U.S. Government Surveys were made in the Coachella Valley in 1855-56 by surveyors Henry Washington, John La Croze, and James G. McDonald who observed trails and roads crossing the area.

Non-Indian settlement in the Coachella Valley began in earnest in the 1870s, with the establishment of railroad stations along the Southern Pacific line. The rate of settlement increased significantly in the 1880s after public lands were opened for claims under the Homestead Act, Desert Land Act, and other federal land laws. With the availability of underground water resources, farming became the dominant economic activity in the Coachella Valley.

### 20<sup>th</sup> Century Development<sup>4</sup>

Most of the Coachella Valley remained unsettled and devoid of any evidence of land development until around the turn of the twentieth century. The only features recorded during that time were the Southern Pacific Railroad, Bradshaw Trail, and another trail along the base of the Little San Bernardino Mountains at the mouth of West Wide Canyon. Several railroad construction workers' camps were present by the early 1900s.

In 1926, the federal government established the National Highway System, which included the Ocean-to-Ocean Highway that ran through the Coachella Valley along its central axis and the Southern Pacific Railroad. Exact dates of construction are unclear, with archival sources tracing it to the late 1930s. Right-of-way for this highway was granted by the federal government in November 1938, which was delineated as U.S 60/70/99.

The date palm was introduced to the area in 1904, and by the late 1910s the date industry was firmly established, extending from present-day Cathedral City south beyond Indio. The date palm became the area's main agricultural staple and the Coachella Valley became known as the "Arabia of America." By the 1920s, resort hotels, equestrian camps, and country clubs gradually developed throughout the Coachella Valley.

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<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

Cathedral City was founded in 1925 by four developers who subdivided one-half Section of land into small lots, drilled a well, and provided a water storage tank with a delivery line. The town was named after Cathedral Canyon to the south. Over time, low-to-moderate income housing developed, making it a more affordable neighbor of Palm Springs. East Palm Canyon Drive (Highway 111) was upgraded in 1927, and several motels and restaurants were developed along the newly paved state highway. During World War II, the city served as a bedroom community for regional military installations. By the mid-1950s, residential development expanded south into the cove, west along Highway 111, and north to Ramon Road, and the city experienced a period of rapid growth. In 1981, Cathedral City was incorporated as the 18<sup>th</sup> city in Riverside County.

### 2.6.5 Existing Conditions

#### Prehistoric Resources in the Planning Area

A cultural resources study for the Cathedral City planning area concluded that the foothills and canyons along the base of the San Jacinto and Santa Rosa Mountains and mesquite dunes between Seven Palms Valley and Edom Hill are highly sensitive for prehistoric archaeological resources.<sup>5</sup> The valley floor, however, demonstrates low sensitivity for prehistoric archaeological resources as it would have offered few resources for native settlements.

The California Office of Historic Preservation (OHP) contracts with nine Information Centers in regions throughout the state to provide historical resources information to local governments, state and federal agencies, Native American tribes, environmental analysts, and the general public. The Eastern Information Center (EIC) at the University of California Riverside is responsible for integrating and supplying this information for Riverside County, including the City of Cathedral City.

According to the EIC, most surveys have been conducted in the northern portion of the planning area on the valley floor and in the Indio Hills; a few have been conducted in the urban core. Only one prehistoric site (CA-RIV-2171), a rock ring feature, has been recorded into the California Historical Resource Information System (CHRIS); its location is kept confidential for its protection.<sup>6</sup> Another prehistoric site in the vicinity of Willow Hole has been reported by the Coachella Valley Archaeological Society, but it has not been recorded.<sup>7</sup>

Six locations of potential Native American cultural significance, listed in the following table and shown on Exhibit 2.6-1, have been identified by anthropologists and Cahuilla cultural authorities. Four are located along the base of the San Jacinto and Santa Rosa Mountains, one in the Whitewater River in the same general vicinity, and one near Edom Hill.

**Table 2.6-1**  
**Sites of Cahuilla Cultural Value in the Cathedral City Area**

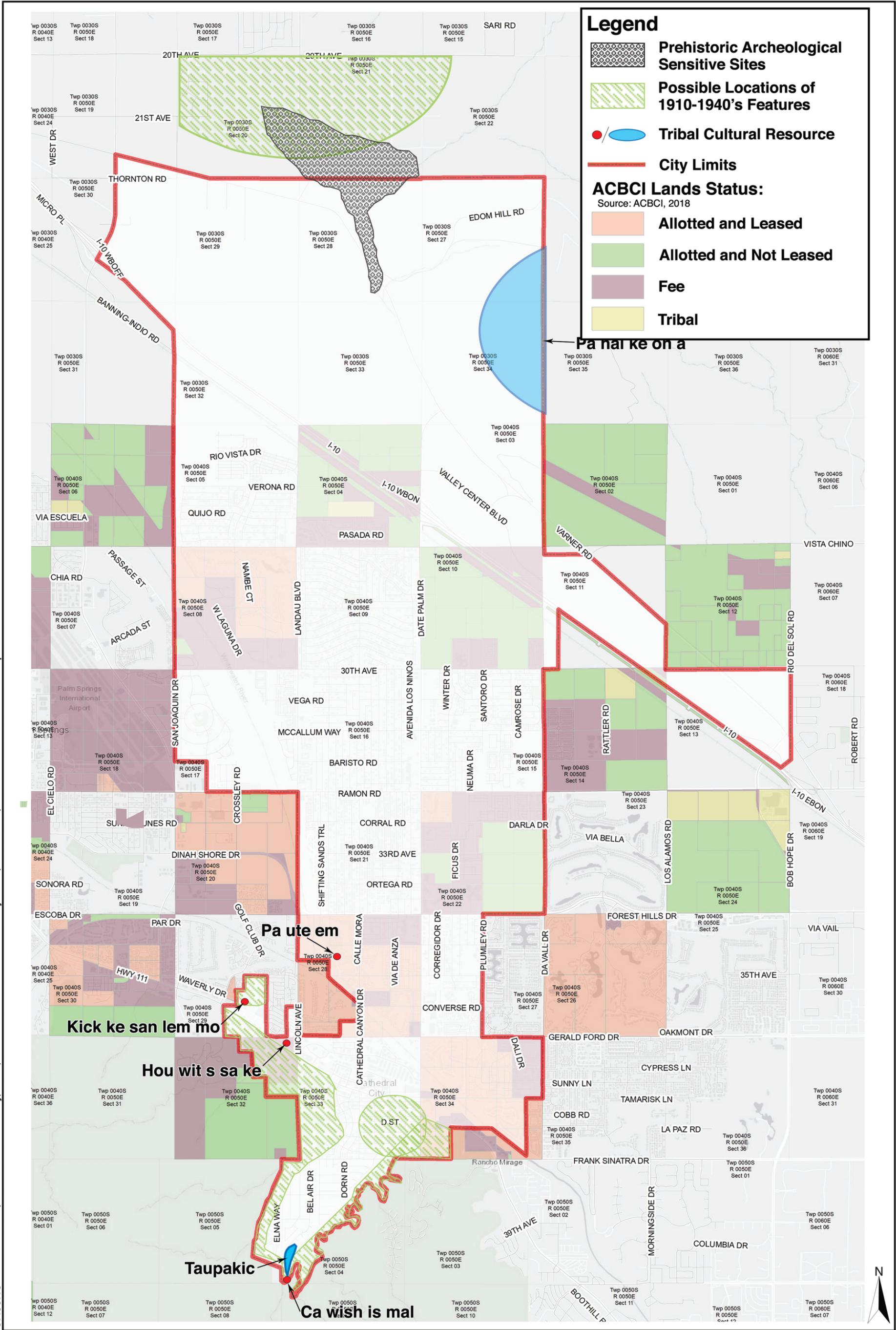
Name	Location	Remarks
<i>Ca wish is mal</i>	Cathedral Canyon	“Painted rock,” named by Cahuilla cultural hero <i>Evon ga net</i> .
<i>Hou wit s sa ke</i>	Near the mouth of Eagle Canyon	“A bear-skin blanket,” named by <i>Ca wis ke on ca</i> , a legendary Cahuilla leader.
<i>Kick ke san lem mo</i>	Convergence of Palm Canyon Wash and Tahquitz Creek	“The place where the white flowers grow,” named by <i>Ca wis ke on ca</i> .
<i>Pa hal ke on a</i>	Edom Hill	Named by <i>Ca wis ke on ca</i> .
<i>Pa ute em</i>	Whitewater Wash	Named by <i>Evon ga net</i> at the “ground squirrel’s home.”
<i>Taupakic</i>	Cathedral Canyon	Names by <i>Hiwinut</i> , the legendary “great net (chief),” “where they gathered the mescal.”

Source: “Cultural Resource Technical Report – Cathedral City General Plan,” CRM Tech, July 2, 2001

<sup>5</sup> “Cultural Resources Technical Report – Cathedral City General Plan,” CRM Tech, July 2, 2001.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.



Historic Resources in the Planning Area

The City’s 2001 cultural resources survey determined that no areas in the planning area retain sufficient amounts of historic-era characteristics to be considered a historic district.<sup>8</sup> However, several historic resources in the planning area have been listed in the California Historical Resource Information System. Among these are the Southern Pacific Railroad (CA-RIV-9498H) and the ruins of a 1930s-era highway service station on Varner Road, formerly part of the Ocean-to-Ocean Highway.<sup>9</sup> Eight buildings in downtown Cathedral City were added as part of a 1980s countywide historical resources reconnaissance conducted by the Riverside County Historical Commission. All were built between the mid-1920s and late 1930s, but the majority have been removed. Recorded historic-era buildings are described in the following table.

**Table 2.6-2  
 Recorded Historic-Era Buildings in the Planning Area**

Property Number	Property Name	Location	Property Type	Year Built
33-5627	Senior Citizen Center*	68-715 A Street	Community Center	1939
33-5628	None	68-537 B Street	Single-family dwelling	1925
33-5629	Desert Exteriors*	68-821 B Street	Residential/commercial	1930s
33-5630	None	37-236 Cathedral Canyon Drive	Single-family dwelling	1920s
33-5631	None**	68-773 D Street	Single-family dwelling	1930s
33-5632	None*	68-918 Dawes Street	Single-family dwelling	1931
33-5633	None*	68-681 Grover Street	Single-family dwelling	1930s
33-5634	Bargain Center*	68902 Highway 111	Commercial building	1920s
33-6885	Ruins of “Old Stone”	Varner Road, east of Mountain View Road	Commercial building	1930s

\* No longer present  
 \*\* Has been significantly altered  
 Source: California Historical Resource Information System, “Cultural Resources Technical Report – Cathedral City General Plan,” CRM Tech, July 2, 2001.

In 2017, the City consulted with community members and institutions knowledgeable about local historic resources and prepared a windshield survey of select areas to identify unique local conditions and neighborhood characteristics.<sup>10</sup> It identified eight (8) historic contexts that can be used to categorize property types in Cathedral City, including:

1. Early Rural/Agricultural Economy, Ranches and Farms, 1910-1930
2. Early Estates, 1920-1940
3. Early Residential Development, 1927-1941
4. Mid-20<sup>th</sup> Century Residential Development, 1942-1969
5. Artists’ Colony, 1932-1961
6. Early Tourism, 1927-1950
7. Entertainment, 1950s-1975
8. Institutional, Civic, and Religious, 1950s-1975

There is currently no local historic resource designation program or preservation ordinance in Cathedral City. The 2017 study described above may be used as a foundation for future local historic designation efforts and programs. The recognized threshold for qualifying as a historic resource or landmark is typically fifty years, and

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> “Historic Resource Context & Historic Resource Program, Cathedral City, California,” Kaplan Chen Kaplan, November 21, 2017.

buildings associated with historic persons or events are required to have some level of architectural integrity that conveys the significance to be preserved. The 2017 study found that many historic buildings in Cathedral City are related to the eight historic contexts and retain historic architectural integrity, but others have undergone significant alterations or been demolished. The 2017 study recommends that the City develop a historic preservation ordinance that establishes a local Register of Historic Places, includes criteria and procedures for inclusion in the register, and sets forth procedures for review of proposed alterations to designated resources.

#### Agua Caliente Band of Cahuilla Indians

The Agua Caliente Indian Reservation, belonging to the Agua Caliente Band of Cahuilla Indians (ACBCI), is partially located in the City of Cathedral City. The Reservation consists of approximately 31,500 acres generally distributed in Sections of land in a checkerboard pattern within the boundaries of Palm Springs, Cathedral City, Rancho Mirage, and unincorporated Riverside County. The City and ACBCI maintain a close and cooperative relationship to monitor and regulate the use and development of property belonging to, held, leased from, or under agreement with any Indian Allottee or the ACBCI.

### **2.6.6 Project Impacts**

This section evaluates the potential impacts of the proposed General Plan Update to sensitive cultural resources, Tribal cultural resources, and other archaeological and historic resources, using the thresholds of significance described in Section 2.6.2.

#### **Cultural Resources**

Would the Project:

##### ***a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?***

As noted previously, the City includes several historic properties that have been recorded in the California Historical Resource Information Center, although some have been demolished or significantly altered. The City does not currently have a local register of historical resources and has not otherwise designated any object, building, or structure as historically significant. The City's 2017 Historic Resource Context and Historic Resource Program determined that some buildings are related to the eight local historic context categories and retain some level of architectural integrity, and they may be eligible for inclusion in a future register.

The proposed General Plan is a policy document that will not, in and of itself, result in physical changes to a historical resource. However, implementation of its land use plan and various policies and programs could impact the treatment of historical resources. The Cultural Resources Sub-Element of the General Plan includes policies and programs intended to protect significant historic resources. Policy 1 ensures that sites in historically sensitive areas are surveyed prior to development. Programs 1.A through 1.G establish specific requirements and parameters for the identification and evaluation of archaeological and historic sites. Policy 2 seeks to protect sensitive historic resources from vandalism and illegal collection. Policy 3 encourages the Cathedral City Historical Society to establish a program to list locally significant resources, and Policy 4 encourages the public's appreciation of historic resources. Policy 5 requires the City to consider offering owners of historical buildings and sites economic incentives for property rehabilitation and maintenance. General Plan impacts would be less than significant.

General Plan implementation would facilitate new development and redevelopment in the planning area that could potentially damage, modify, or demolish historic structures and change their significance. Potential impacts of individual development projects to historic resources would be mitigated to less than significant levels through implementation of the above-described policies and programs, as well as project-specific pre-construction surveys that identify historic resources and set forth treatment measures to minimize potential impacts (Mitigation Measure CUL-1).

***b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?***

The City includes known archaeological resources and areas of potential Native American cultural significance. It includes land within the Agua Caliente Band of Cahuilla Indians Reservation and the Traditional Use Area of Native Americans. Although the valley floor has low sensitivity for archaeological resources, the foothills and canyons of the Santa Rosa Mountains and mesquite dunes between Seven Palms Valley and Edom Hill, and Edom Hill itself, are highly sensitive for potential archaeological resources.

The proposed General Plan is a policy document that will not, in and of itself, result in adverse physical changes in the significance of an archaeological resource. However, its Cultural Resources Sub-Element sets forth policies and programs that provide for the long-term protection of archaeological resources. Policy 1 and Program 1.A ensure that culturally sensitive areas are surveyed prior to development and that the City coordinates with the Eastern Information Center for review and input. Program 1.E requires that, in the event that archaeological resources are identified during construction, development cease and the site be examined and documented by a professional archaeologist to examine and document the site and determine subsequent actions. Policy 2 calls for the protection of sensitive archaeological resources from vandalism and illegal collection. Policy 3 encourages the Cathedral City Historical Society to establish a program to qualify and list locally significant resources on available state and federal registers, and Policy 4 encourages public participation and appreciation of archaeological resources. General Plan impacts would be less than significant.

Nonetheless, implementation of the proposed General Plan land use plan would facilitate new development throughout the City, some of which could occur in areas with high sensitivity for archaeological resources. Ground disturbance associated with grading and construction could uncover significant archaeological resources. Potential impacts near the canyons and foothills of the Santa Rosa Mountains are not expected to be significant because ground surfaces in this area have been disturbed and developed with residential uses (Cathedral Cove) for decades, and remaining vacant land in East and West Cathedral Canyon is preserved as Open Space by the proposed General Plan.

Potential impacts to archaeological resources can be expected to be greater north of I-10, in the archaeologically sensitive areas near and within Seven Palms Valley, Edom Hill, and Willow Hole. Other than electricity transmission lines, above-ground water reservoirs, and waste management facilities, these lands are vacant and undisturbed. The General Plan designates some, including Willow Hole, as Open Space, but residential and other urban uses are proposed elsewhere. As the planning area builds out, features or artifacts of prehistoric origin may be uncovered during ground disturbing activities. Future development projects would be evaluated on a project-by-project basis to determine the presence of archaeological resources and determine their significance. Impacts of individual development projects on archaeological resources would be reduced to less than significant levels through pre-construction surveys (Mitigation Measure CUL-1), impact avoidance and/or proper procurement and documentation of unearthed archaeological resources (Mitigation Measure CUL-2).

***c) Disturb any human remains, including those interred outside of dedicated cemeteries?***

The Cahuilla were among the earliest Native American inhabitants of the Coachella Valley, and they are known to have used and/or occupied land in Cathedral City and neighboring communities. Therefore, the potential exists for human remains to be unearthed during ground disturbance activities, such as grading and sub-surface excavation.

The General Plan is a policy document that will not, in and of itself, disturb any human remains. Its land use plan protects established cemeteries from disturbance by designating them Public-Cemetery (P/C). Implementation of the land use plan could facilitate urban development on vacant lands, including within archaeologically sensitive areas. Policy 1 of the Cultural Resources Sub-Element requires that archaeologically sensitive areas be surveyed prior to development, and that development cease for inspection in the event that human remains or other potentially significant archaeological resources are identified. General Plan impacts would be less than significant.

However, should human remains be discovered in conjunction with individual development projects in the planning area, the provisions of California Health and Safety Code Sections 7050.5 - 7055 and Mitigation Measure CUL-3 would ensure that impacts would be mitigated to less than significant levels.

### **Tribal Cultural Resources**

Would the Project:

- a) ***Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:***
  - i) ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or***
  - ii) ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.***

#### Previously Known Tribal Resources:

As noted previously, the General Plan planning area contains an archaeological rock ring feature that has been listed in the California Historical Resources Information System (CHRIS), and six locations identified by anthropologists and Cahuilla cultural authorities as having potential Native American cultural significance.

In June 2018, in compliance with AB 52, the City notified the ACBCI of a proposed project at the Edom Hill Compost Site. In response, the ACBCI noted that the site was not within the boundaries of the ACBCI Reservation but was within the Tribe's Traditional Use Area.<sup>11</sup> The Tribe requested that Edom Hill be noted as a Tribal Cultural Resource in all project environmental documents, and that the City take impacts to Edom Hill into consideration as a Tribal Cultural Resource for all future projects. However, the Tribe declined monitoring as mitigation for the Edom Hill project as the project area has been heavily disturbed. Edom Hill has been added to the City General Plan inventory of archaeologically sensitive lands.

#### Tribal Consultation:

SB 18 and AB 52 require the City to initiate a formal consultation process with relevant Tribes prior to adopting or amending a General Plan or releasing an environmental impact report, negative declaration, or mitigated negative declaration. In September 2018, the City sent written correspondence to twenty-one (21) Tribal representatives in compliance with SB 18, and seven (7) Tribal representatives in compliance with AB 52, to notify them of the City's intent to prepare a General Plan Update and associated EIR. The notified Tribes included:

- Agua Caliente Band of Cahuilla Indians
- Morongo Band of Missions Indians
- Twenty-Nine Palms Band of Mission Indians
- Torres Martinez Desert Cahuilla Indians
- Cabazon Band of Mission Indians

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<sup>11</sup> Letter to Robert Rodriguez, City of Cathedral City, from Patti Garcia-Plotkin, Director, Tribal Historic Preservation Office, Agua Caliente Band of Cahuilla Indians, regarding Edom Hill Compost Facility CUP No. 15-005, June 26, 2018.

- Soboba Band of Luiseño Indians
- Cahuilla Band of Indians
- Ewiiapaayp Tribal Office
- La Posta Band of Mission Indians
- Santa Rosa Band of Mission Indians
- Viejas Band of Kumeyaay Indians
- Augustine Band of Cahuilla Mission Indians
- Campo Band of Mission Indians
- Jamul Indian Village
- Los Coyotes Band of Mission Indians
- Ramona Band of Cahuilla Mission Indians
- Sycuan Band of the Kumeyaay Nation
- Manzanita Band of Kumeyaay Nation
- San Pasqual Band of Mission Indians

The City also sent notification of proposed land use changes in the vicinity of Date Palm Drive and 30<sup>th</sup> Avenue to the Bureau of Indian Affairs who sent it to all 158 ACBCI allottees. Comments in response to the EIR Notice of Preparation were received from the Native American Heritage Commission, the Augustine Band of Cahuilla Indians, the Viejas Band of Kumeyaay Indians, and the Morongo Band of Mission Indians. These and other NOP comment letters can be found in Appendix A of this DEIR. Copies of the SB 18 and AB 52 notification letters are also included in Appendix A.

Analysis:

The General Plan land use plan would facilitate new development and redevelopment in Cathedral City. Site disturbances on vacant land, such as grading and subsurface excavations, may unearth previously unknown tribal cultural resources, particularly in culturally sensitive areas north of I-10. However, the Cultural Resources Sub-Element of the General Plan includes Policies 1, 2, and 4 and their respective programs, that would protect cultural resources from development, vandalism, and illegal collection, and encourage public participation in the appreciation and protection of cultural resources. Program 4.A requires the City's continued coordination and cooperation with the ACBCI in the protection of cultural resources, which will reduce impacts to tribal resources. Impacts of the proposed General Plan on Tribal Cultural Resources would be less than significant.

Mitigation Measures CUL-1, CUL-2, and CUL-3 will assure that potential impacts of individual development projects within the planning area on Tribal Cultural Resources are reduced to less than significant levels.

### **2.6.7 Mitigation Measures**

The following includes avoidance, minimization and mitigation measures that serve to protect identified cultural, Tribal and historical resources that could result from implementing the Proposed Project. The following measures shall be implemented, as appropriate and applicable, to ensure that impacts to these resources resulting from individual development projects are mitigated to less than significant levels.

CUL-1 In instances where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of an historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

CUL-2 Where appropriate and in conjunction with other measures, require documentation of an historical resource by way of historic narrative, photographs or architectural drawings, prior to impacting the resource, and require additional mitigation where necessary to ensure that adequately mitigate the effects to a point where impacts are clearly less than significant.

CUL-3 Whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in CEQA documentation for a project involving such an archaeological site:

- (A) Preservation in place shall be the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.
- (B) Preservation in place may be accomplished by, but is not limited to, the following:
  - 1. Planning construction to avoid archaeological sites;
  - 2. Incorporation of sites within parks, greenspace, or other open space;
  - 3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
  - 4. Deeding the site into a permanent conservation easement.
- (C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.
- (D) Data recovery may not necessarily be required for an historical resource if the City, as CEQA lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the project EIR and that the studies are deposited with the California Historical Resources Regional Information Center.

#### CUL-4 Pre-Construction Surveys

The City shall require intensive-level cultural resources surveys by qualified archaeologists, historians, and/or architectural historians, where deemed necessary and especially in areas of high sensitivity for cultural resources, as shown on Exhibit 2.6-1. Studies should include in-depth records search at the EIC, historic background research, intensive-level field survey, and consultation with the Cathedral City Historical Society, Native American representatives, and/or other relevant parties, as well as impact evaluation and mitigation programs, as needed. The City shall monitor and enforce recommended mitigation measures.

#### CUL-5 Archaeological and/or Tribal Resource Procurement and Documentation

Should unknown archeological or tribal cultural resource materials become unearthed, the area of potential resources shall be cordoned off and protected from further disturbance until a qualified archeologist can investigate the discovery. The qualified archaeologist shall prepare a findings report summarizing the methods and results of the investigation, including an itemized inventory and detailed analysis of recovered artifacts upon completion of field and laboratory work. The report shall include an interpretation of the cultural activities represented by the artifacts and a discussion of the significance of all archaeological or tribal finds. The submittal of the report to the City and Tribal representative, as

appropriate, along with final curation of the recovered artifacts, will signify completion of the monitoring program and, barring unexpected findings of extraordinary significance, the mitigation of potential project impacts on cultural and tribal resources.

CUL-6 Human Remains

Should buried human remains be discovered during grading or other construction activity, in accordance with State law, the County coroner shall be contacted. If the remains are determined to be of Native American heritage, the Native American Heritage Commission and the appropriate local Native American Tribe shall be contacted to determine the Most Likely Descendant (MLD).

**2.6.8 Significance After Mitigation**

With implementation of the mitigation measures described above, impacts of future development projects within the General Plan planning area would be reduced to less than significant levels.

**2.6.9 Cumulative Impacts**

The geographic scope of analysis of potential cumulative impacts on cultural, historical, and tribal resources includes the General Plan planning area, its immediate vicinity, and traditional use areas of the Cahuilla people in the Coachella Valley. The Proposed Project would contribute considerably to cumulative impacts if it were to have a substantial or significant adverse effect on these cultural resources.

Cultural resources surveys conducted in the project area evaluated a wide range of literature, data, and information on historic, tribal, and other archaeological resources and generated a baseline of knowledge and understanding of these resources. The tribal consultation process garnered additional information about tribal resources in the area. Several cultural resources have been listed in the California Historical Resource Information System. Areas of high sensitivity for archaeological resources have been identified.

Future urban development facilitated by the proposed General Plan would contribute to regional losses of vacant land, ground surface disturbances, and the potential discovery of previously unknown cultural resources. However, implementation of policies and programs in the General Plan Cultural Resources Sub-Element and the mitigation measures described above will reduce impacts to cultural resources in the planning area. The Proposed Project's incremental impacts to these resources would not be cumulatively considerable.

## 2.7 Mineral and Energy Resources

### 2.7.1 Introduction

This section of the Draft EIR provides a description of energy and mineral resources within the City of Cathedral City, information on regulations and agencies with jurisdiction over the planning area, proposed General Plan policies relevant to energy and mineral resources, and an analysis of potential impacts related to energy and mineral resources resulting from implementation of the proposed General Plan Update. The regulatory environment and thresholds of significance are described. Mitigation measures are set forth where needed. The discussion concludes with a discussion of residual and cumulative impacts.

### 2.7.2 Thresholds of Significance

The following analysis criteria and thresholds are based on Appendix G and derived from Appendix F of State CEQA Guidelines. A project would have a significant impact relating to energy and mineral resources if it would:

#### Mineral Resources

- 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.

#### Energy

- 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.

### 2.7.3 Regulatory Framework

#### Federal

##### National Energy Policy Act of 2005

The National Energy Policy Act of 2005 addresses energy production in the United States, including: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) Tribal energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology. For example, the Act provides loan guarantees for entities that develop or use innovative technologies that avoid the by-production of greenhouse gases. Another provision of the Act increases the amount of biofuel that must be mixed with gasoline sold in the United States.<sup>1</sup>

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<sup>1</sup> United States Environmental Protection Agency Website - Laws & Regulations, Summary of the Energy Policy Act 42 USC §13201 et seq. (2005).

## State

### Surface Mining and Reclamation Act of 1975

The California Surface Mining and Reclamation Act of 1975 (SMARA) was enacted in response to land use conflicts between urban growth and essential mineral production. SMARA requires the State Geologist to classify land based on the presence of economically important mineral resources. Local governments should consider this information before land with important mineral resources is committed to use that may be incompatible with mining or extraction. Pursuant to SMARA, the California Geological Survey (CGS) has mapped mineral resources using a system of Mineral Resource Zone (MRZ) classifications that reflect the known or inferred presence and significance of a given mineral resource.

### California 2008 Energy Action Plan Update

The 2008 update to the 2005 Energy Action Plan II is the State's principal energy planning and policy document. The updated document examines the State's ongoing actions in the context of global climate change. The Energy Action Plan II continues the goals of the original 2003 Energy Action Plan, describes a coordinated implementation plan for State energy policies, and identifies specific action areas to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. In accordance with this plan, the first-priority actions to address California's increasing energy demands are energy efficiency and demand response (i.e., reduction of customer energy usage during peak periods to address system reliability and support the best use of energy infrastructure). Additional priorities include the use of renewable sources of power and distributed generation (i.e., the use of relatively small power plants near or at centers of high demand). To the extent that these actions are unable to satisfy the increasing energy demand and transmission capacity needs, clean and efficient fossil-fired generation is supported.

The California 2008 Energy Action Plan Update examines policy changes in the areas of energy efficiency, demand response, renewable energy, electricity reliability and infrastructure, electricity market structure, natural gas supply and infrastructure, research and development, and climate change.

### Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the State's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, the California Air Resources Board (CARB) prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focused on increasing energy efficiencies and the use of renewable resources and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the State's GHG emissions reduction planning framework creates co-benefits for energy-related resources. Additional information on AB 32 and SB 32 is provided in Section 2.4 of this EIR.

### Senate Bill 375

Senate Bill 375 (SB 375) directs CARB to set regional targets for reducing GHG emissions. Specifically, SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce GHG emissions from motor vehicle trips. SB 375 requires each MPO to include a "Sustainable Communities Strategy" (SCS) in the regional transportation plan that demonstrates how the region will meet the GHG emission targets and help achieve the reduction goals for cars and light trucks under AB 32. Additional information on SB 375 and SCS is provided in Section 2.4 of this EIR.

### California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies.

The 2016 Title 24 building energy efficiency standards, which became effective on January 1, 2017, further reduce the energy used in the State. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and non-residential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards.<sup>2</sup>

Title 24 also includes Part 11, the California Green Building Standards (CALGreen). The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and State-owned buildings, as well as schools and hospitals. The 2016 CALGreen standards became effective on January 1, 2017. The mandatory standards require the following:<sup>3</sup>

- 20% mandatory reduction in indoor water use;
- 50% diversion of construction and demolition waste from landfills; and
- Mandatory inspections of energy systems to ensure the optimal working efficiency.

### Integrated Energy Policy Report

The California Energy Commission (CEC) is responsible for preparing integrated energy policy reports, which identify emerging trends related to energy supply, demand, conservation, public health and safety, and maintenance of a healthy economy. The CEC's 2015 Integrated Energy Policy Report discusses the State's policy goal to require that new residential construction be designed to achieve zero net energy (ZNE) standards by 2020 and that new non-residential construction be designed to achieve ZNE standards by 2030.<sup>4,5</sup>

### State Vehicle Standards

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO<sub>2</sub>) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the State board to be vehicles whose primary use is noncommercial personal transportation manufactured in 2009 and all subsequent model years. The 2009–2012 standards resulted in a reduction in approximately 22% in GHG emissions compared to emissions from the 2002 fleet, and the 2013–2016 standards resulted in a reduction of approximately 30%.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer global warming gases and 75% fewer smog-forming emissions (CARB 2011).

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<sup>2</sup> California Energy Commission (CEC) Website, 2016 Building Energy Efficiency Standards – Frequently Asked Questions.  
[https://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016\\_Building\\_Energy\\_Efficiency\\_Standards\\_FAQ.pdf](https://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf), Accessed April 2019.

<sup>3</sup> Guide to the 2016 California Green Building Standards Code Nonresidential by CALGreen.

<sup>4</sup> New Residential Zero Net Energy Action Plan 2015-2020 Executive Summary prepared by California Public Utilities Commission (Energy Division) and California Energy Commission (Efficiency Division).

<sup>5</sup> Commercial Zero Net Energy Action Plan Draft prepared by California Public Utilities Commission in 2017.

Although the focus of the State’s vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

## **Regional and Local**

### 2013 Cathedral City Climate Action Plan

In response to AB 32 and CARB’s Climate Change Scoping Plan, the City of Cathedral City completed its first Climate Action Plan in May 2013 in an effort to address climate change at the local level by reducing greenhouse gas emissions within its own operations and within the overall community. The Climate Action Plan provides a framework for the development and implementation of policies and programs that will reduce the City’s emissions and is tracked via the City’s Greenhouse Gas Inventory. In addition to the Climate Action Plan, the City prepared an Energy Action Plan (2013) (see below) to identify opportunities for cost savings through energy efficiency and actions necessary to meet the City’s future energy needs, consistent with the energy policies set forth by the State of California.

### 2013 Energy Action Plan

In 2013, the City of Cathedral City adopted an Energy Action Plan (EAP) to identify actions necessary to meet the City’s future energy requirements and be compliant with energy policies set forth by the State of California. The EAP includes a breakdown of municipal energy usage and provides a number of energy-related policies that focus on energy-efficient upgrades and municipal programs/actions meant to reduce municipal and community-wide energy usage and greenhouse gas (GHG) emissions.

### Cathedral City General Plan

The City’s Proposed General Plan Energy and Mineral Resources Element addresses the conventional and renewable energy resources in the City and surrounding areas. The element contains numerous policies to encourage conservation of energy and mineral resources and usage of local wind, solar and other renewable resources such as:

**Policy 1:** Encourage conservation in the planning and construction of urban uses and in the regional transportation system.

**Policy 2:** The General Plan and other City documents, such as the 5 Year Capital Improvement Program, shall assure an efficient circulation system and land use pattern in the City which minimizes travel.

**Policy 3:** Support long-term strategies, consistent with state and federal legislation and regulations, that assure affordable, reliable and environmentally sustainable production and delivery of electrical power to the community.

**Policy 4:** Continue to proactively support and participate in local and regional efforts to develop and operate alternative systems that take advantage of local wind, solar and other renewable resources.

**Policy 5:** To further reduce nonrenewable energy use in transportation, the City shall facilitate provision of information on bike and NEV routes, bus routes and the transit network, ridesharing and ride-booking services to residents and businesses.

**Policy 6:** The City shall continue to explore and update policies that increase energy efficiency and the use of alternative sources for the economic, environmental and social benefit of the City.

## 2.7.4 Regional Environmental Setting

### Mineral Resources

#### Definition

California Public Resources Code Section 2005 defines minerals as “any naturally occurring chemical element or compound, or group of elements and compounds, formed from inorganic processes and organic substances, including, but not limited to, coal, peat, and bituminous rock, but excluding geothermal resources, natural gas, and petroleum.” Mineral resources can be used for a variety of uses, making them important to community development and commerce. The importance and value of mineral resources, coupled with their limited availability, make careful planning a necessity. Moreover, the mining, processing, and distribution of mineral resources can have broad and varied implications for the environment. Surface mining, for example, can scar the landscape for hundreds of years if a mine is not adequately reclaimed.

#### Locally Important Mineral Resources

The region and especially the surrounding mountains have a history of mining that dates back to the late 1800s. Mines in the Santa Rosa and San Jacinto National Monument have produced gold, asbestos, beryllium, limestone, tungsten, copper, tourmaline, and garnet. With the exception of limestone, however, these mineral deposits have not been extensively mined, are limited, or are not precisely known.

Mountain ranges and eroding hills surrounding the Coachella Valley have filled the Valley with significant amounts of sand and gravel, known collectively as aggregate. Aggregate is used for asphalt, concrete, road base, stucco, plaster, and other similar construction materials. The Palm Springs Production-Consumption (P-C) Region is a 631 square mile area in the Coachella Valley that is heavily mined for aggregate. According to the California Geological Survey, the Palm Springs P-C Region has 30,072 acres classified as the land where significant mineral deposits are present,<sup>6</sup> or where it is judged that a high likelihood for their presence exists. The Palm Springs region contains 3.2± billion tons of aggregate resources.

#### Local Aggregate Demand

According to California Geological Survey Special Report 198, the average local annual per capita consumption rate for aggregate in the Palm Springs Production-Consumption Region is 9.6 tons.<sup>7</sup> The State Geological Survey anticipates that demand will probably stabilize at a lower rate as the local market matures, but demand from outside the region may offset to some degree local declines. Total regional PCC-grade aggregate reserves (available permitted resources) were 167 million tons in 2005 (latest data available). They are expected to be sufficient to satisfy local demand through the year 2038, barring any unforeseen events affecting construction like a major economic recession or massive urban renewal.

While the Coachella Valley has an abundant, high-quality local supply of PCC-grade aggregate, a desirable commodity for development markets, transportation costs are a major component affecting cost competitiveness. Given the widespread deposition of aggregate materials in southern California, demand for local resources is expected to remain largely local.

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<sup>6</sup> Mineral Land Classifications: Aggregate Materials in the Palm Springs Production-consumption Region, Riverside County, California. Special Report 159 (SR 159) by California Department of Conservation Division of Mines and Geology.

<sup>7</sup> Update of Mineral Land Classifications for Portland Cement Concrete-grade Aggregate in the Palm Springs Production-consumption Region, Riverside County, California. Special Report 198 (SR 198) by California Department of Conservation Division of Mines and Geology.

### Classifications

The California Geological Survey collects and analyzes information about the State's mineral resources. As set forth in Section 2761(b) of SMARA, the State Geologist classifies land for mineral resources solely on the basis of geologic factors, regardless of existing land use and land ownership. Mineral land classifications for Portland cement concrete (PCC)-grade aggregate materials in the Coachella Valley were mapped by the State Geological Survey in 1988 (Special Report 159) and updated in 2007 (Special Report 198).<sup>8</sup> Areas subject to mineral land classification studies are divided by the State Geologist into Mineral Resource Zone (MRZ) categories that reflect varying degrees of mineral resource potential. The MRZ categories are briefly described below.

- MRZ-1: Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.
- MRZ-2 (used in Special Report 159): Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists. This zone shall be applied to known mineral deposits or where well-developed lines of reasoning, based upon economic-geologic principles and adequate data, demonstrate that the likelihood for the occurrence of significant mineral deposits is high.
- MRZ-2a: Areas underlain by mineral deposits where geologic data indicate that significant *measured or indicated* resources are present. Contains known economic mineral deposits.
- MRZ-2b: Areas underlain by mineral deposits where geologic information indicates that significant *inferred* resources are present.
- MRZ-3: Areas containing *known* or *inferred* mineral occurrences of undetermined mineral resource significance.

In the Coachella Valley, MRZ-1 areas are generally located in the Rancho Mirage, Palm Desert, Indio, Coachella, and Thermal areas. MRZ-2 areas are generally located in the northwestern portion of Palm Springs and North Indio Hills. The majority of the Palm Springs, Cathedral City, Thousand Palms, Desert Hot Springs, Indian Wells, and La Quinta area are designated MRZ-3.

### **Energy**

Primary energy sources include nuclear energy, fossil energy (oil, coal and natural gas), and renewable sources like wind, solar, geothermal, and hydropower. These primary sources are converted to electricity, a secondary energy source, which flows through power lines and other transmission infrastructure to developments.

### **Electricity**

Electricity, a consumptive utility, is a man-made resource. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. Conveyance of electricity through transmission lines is typically responsive to project demands.

The production of electricity requires the consumption or conversion of energy resources (e.g., water, wind, oil, gas, coal, solar, geothermal, and nuclear resources) into electric energy. In California, the main sources of electrical energy are both conventional and renewable sources, as follows:<sup>9</sup>

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<sup>8</sup> Ibid.

<sup>9</sup> California State Auditor Report 2007-119, <https://www.bsa.ca.gov/reports/summary/2007-119>, Accessed January 2019.

**Table 2.7-1  
 Mix of Conventional and Renewable Energy  
 In California (2018)**

Conventional Sources	Renewable Sources
Natural gas 41.5%	Geothermal 4.7%
Large hydro 19.0%	Biomass 2.1%
Coal 15.7%	Small hydro 2.1%
Nuclear 12.9%	Wind 1.8%
	Solar 0.2%
<b>Subtotal 89.1%</b>	<b>Subtotal 10.9%</b>

Electric power capacity (electrical power) is generally measured in watts, while electricity use is measured in watt-hours. Residential, commercial, and industrial sectors are the three main consumers of electricity. According to the California Energy Commission, statewide electricity consumption in 2019 is projected to be approximately 320,000 GWh and is projected to increase to 333,838 GWh in 2022.<sup>10</sup> The Statewide Electricity Annual per capita consumption is also projected to grow from 7,700 kWh in 2019 to 7,900 kWh in 2022.<sup>11</sup> The average annual electricity demand growth in California from 2012 to 2024 is expected to range from 0.88 to 1.82 percent, while peak annual electricity demand growth is expected to range from 0.97 to 1.92 percent.<sup>12</sup>

Southern California Edison (SCE) provides electricity services to Cathedral City.

Non-Renewable Energy Sources

**Natural Gas**

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network, and therefore, resource availability is typically not an issue. Natural gas satisfies almost one-third of the State’s total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel. Natural gas is measured in terms of cubic feet.

According to the California Energy Commission, statewide natural gas consumption in 2019 is projected to be approximately 13,500 MM therms, which will increase to 13,929 MM therms in 2022.<sup>13</sup> The Statewide natural gas annual consumption per capita is projected to decline from 340 therms in 2019 to 330 therms in 2022.<sup>14</sup>

The Gas Company provides natural gas services to the Coachella Valley.

<sup>10</sup> California Energy Demand 2012-2022 Final Forecast Document by California Energy Commission (Table 1-1, Final Forecasts of Statewide Electricity Demand).  
<sup>11</sup> California Energy Demand 2012-2022 Final Forecast Document by California Energy Commission (Figure 1-2 (Final Forecasts of Statewide Electricity Demand)).  
<sup>12</sup> 2013 Integrated Energy Policy Report by California Energy Commission.  
<sup>13</sup> California Energy Demand 2012-2022 Final Forecast by California Energy Commission – Table 1-1 (Final Forecasts of Statewide Electricity Demand).  
<sup>14</sup> California Energy Demand 2012-2022 Final Forecast by California Energy Commission – Figure 1-2 (Final Forecasts of Statewide Electricity Demand).

### **Petroleum Fuels**

Fossil fuels are formed by natural processes, such as anaerobic decomposition of buried dead organisms, containing energy originating in ancient photosynthesis. Fossil fuels contain high percentages of carbon and include petroleum, coal, and natural gas.

Petroleum is the dominant source of transportation energy. According to the California Energy Commission (CEC), transportation accounts for nearly 40% of California's total energy consumption and approximately 39% of the State's greenhouse gas emissions.<sup>15</sup>

In 2015, California consumed 23.2 billion gallons of petroleum, including 15.5 billion gallons of finished gasoline and 3.7 billion gallons of diesel.<sup>16</sup> The State is working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHGs from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next ten years and there will be an increase in the use of alternative fuels, such as natural gas, biofuels, and electricity.

According to the CEC, current statewide gasoline consumption is approximately 15.2 billion gallons, which is projected to decrease to 12.6 billion gallons in 2030.<sup>17</sup> The current statewide diesel consumption is approximately 4.10 billion gallons, which is projected to decrease to 3.85 billion gallons in 2030.<sup>18</sup>

### **Renewable Energy Sources**

#### **Geothermal**

Geothermal energy is produced by the heat of the earth and is often associated with volcanic or seismically active regions. The State of California has 25 Known Geothermal Resource Areas (KGRAs), fourteen (14) of which have temperatures of 300 degrees Fahrenheit or greater.<sup>19</sup> Approximately 11,528 gigawatt-hours (GWh) of electricity was produced from geothermal sources in California in 2018.<sup>20</sup>

The northwestern portion of the Coachella Valley contains limited geothermal resources, including hot springs in Palm Springs and Desert Hot Springs. These hot water areas result from faults and are primarily focused along the Mission Creek fault but also along the Palm Canyon fault. The geothermal energy produced in Palm Springs and Desert Hot Springs is generally used for commercial spas and therapeutic pools. These resources are limited, located on private lands, and not used for energy production. Geothermal energy on a utility scale has been found and developed at the south end of the Salton Sea in Imperial County, where more than 1,170.46 megawatts of geothermal electric power have been developed.<sup>21</sup>

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<sup>15</sup> Integrated Energy Policy Report 2013 IEPR by California Energy Commission – Page 21.

<sup>16</sup> Revised Transportation Energy Demand Forecast, 2018-2030, by California Energy Commission (February 2018) – Page 35.

<sup>17</sup> California Energy Demand 2012-2022 Final Forecast by California Energy Commission – Table 1-1 (Final Forecasts of Statewide Electricity Demand).

<sup>18</sup> Revised Transportation Energy Demand Forecast, 2018-2030, by California Energy Commission (February 2018) – Page 74-76.

<sup>19</sup> California Energy Commission Website - California Geothermal Energy Statistics & Data, [https://www.energy.ca.gov/almanac/renewables\\_data/geothermal/](https://www.energy.ca.gov/almanac/renewables_data/geothermal/), Accessed April 2019.

<sup>20</sup> Ibid.

<sup>21</sup> Ibid.

### Wind

The Coachella Valley region has seen major developments in wind energy; the region is known internationally for the scale of wind resource development. The western Coachella Valley is a proven wind resource area, where strong and sustained winds are channeled through the San Geronio Pass and into the valley. Today, the San Geronio Pass is home to one of the nation's largest wind farms; it includes more than 2,299 wind turbines, with a total capacity of 665 megawatts.<sup>22</sup>

### Solar

The Coachella Valley region is a growing source of electricity generated by solar photovoltaic systems being developed on residential rooftops, commercial and industrial buildings, institutional uses, and covered parking structures.

## **2.7.5 Existing Conditions**

### **Mineral Resources**

Mineral land use classification maps of the Coachella Valley show that Mineral Resource Zone 3 (MRZ-3) applies to Cathedral City.<sup>23</sup> MRZ-3 generally refers to areas where development has limited the ability to determine the presence or amount of mineral resources.

The nearest Mineral Resource Zone to Cathedral City is in the Indio Hills near the community of Thousand Palms -- near, but outside of, the city's sphere-of-influence (SOI). It contains an area designated MRZ-2a PCC-3. This 50.5±-acre site was reclassified from MRZ-2 in California Geological Survey Special Report 159 to MRZ-2a for PCC-grade aggregate in Special Report 198. The E.L. Yeager Construction Company is permitted to mine in this area. However, there are no mapped or exploited mineral resources in the City or its SOI.

### **Energy**

#### Electricity

Southern California Edison (SCE) currently provides electricity services to Cathedral City. According to the City's Greenhouse Gas Inventory (2013), city-wide electricity usage in Cathedral City in 2010 was 328,671,890 kWh . This includes all electricity consumed by municipal buildings, residential, commercial, and industrial land uses, and resorts and golf courses, combined. The report has not since been updated, and a more recent estimate is not currently available. However, it can be assumed that current electricity usage per capita will be comparable to 2010, if not less, due to the increased energy efficiency standards of the California Building and Energy Codes.

Along with the cities of Palm Springs and Palm Desert, Cathedral City has formed an energy provider called Desert Community Energy (DCE) which is expected to be operational in 2020. DCE will use cleaner electricity sources and feed it into the grid, partnering with Southern California Edison to deliver electricity and manage the lines, poles, and customer service. DCE is a Community Choice Aggregation program, otherwise known as a CCA. It is a public joint powers agency located within the geographic boundaries of Riverside County. It formed in 2017 for the purpose of offering rate savings to electricity customers and developing and implementing sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient and renewable resources available in the region. It is governed by a board of directors that includes an elected representative from each participating city.<sup>24</sup>

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<sup>22</sup> United States Wind Turbine Database - USGS Energy Resources, July 2018

<https://eerscmap.usgs.gov/uswtodb/viewer/#14.75/33.88239/-116.46539>, Accessed April 2019.

<sup>23</sup> California Geological Survey, Department of Conservation (CGS), 2007. Update of Mineral Land Classifications for Portland Cement Concrete-grade Aggregate in the Palm Springs Production-consumption Region, Riverside County, California. Update to CGS Special Report 198 (SR 198), by Lawrence L. Busch.

<sup>24</sup> Desert Community Energy - 2018 Integrated Resource Plan, prepared in August 2018.

### Natural Gas

The Gas Company provides natural gas services to Cathedral City. According to the City's Greenhouse Gas Inventory Update, city-wide natural gas consumption totaled 7,678,818 therms in 2010. This includes natural gas consumed by residential, commercial, and industrial land uses, and resorts and golf courses. The report has not been updated, and a more recent estimate is not currently available. However, similar to statewide predictions, it can be assumed that the annual consumption of natural gas per capita within the City of Cathedral City will be comparable to 2010 or will decline as more energy efficiencies become available.

### Wind

Eight wind turbines currently operate in Cathedral City on Edom Hill (BLM lands), with a capacity of approximately 2.5 megawatts. Most turbines are three-blade, horizontal axis machines with galvanized or painted steel towers; larger turbines can exceed 300 feet in overall height.

### Solar

Cathedral City is a leader in the installation of solar PV systems, including large systems at the Civic Center. Stand-alone industrial-scale development of PV systems have been somewhat limited but have been integrated to some degree with wind turbine development.

## **2.7.6 Project Impacts**

### **Mineral Resources**

Would the Project:

- a) *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

The City contains no known mineral resources. According to the California Department of Conservation, the planning area is designated as MRZ-3, which represents areas where development has limited the ability to determine the presence or amount of mineral resources. The current General Plan does not designate any land in the City for mineral resources. The proposed General Plan Land Use Plan does not designate any land for mineral production or conversion from mineral resources to a different land use. The proposed General Plan, therefore, would not result in the loss of availability of a known mineral resource.

Future development and redevelopment facilitated by the proposed General Plan Update would increase the demand for sand and gravel resources for roadways, infrastructure, and building construction. These resources could be derived from the regional Coachella Valley market, but the demand for sand and gravel resources would not be considered significant when compared to available regional resources. As discussed above, PCC-grade aggregate reserves in the Palm Springs Production-Consumption Region are projected to be enough to meet future demand in the region through the year 2038. Thus, the potential loss of availability of these local resources due to future development in the planning area would result in a less than significant impact. Adherence to Goal 1 of the Energy and Mineral Resources Element, and its associated policies, would further reduce the potential for significant impacts; no mitigation is required.

- 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?*

The planning area does not contain a locally important mineral resource recovery site, and none are delineated on the current General Plan, a specific plan, or other land use plan. No impact would occur.

Nonetheless, as a long-range planning document, the proposed General Plan Energy and Mineral Resources Element establishes Goal 1, which requires the City to use mineral resources appropriately to assure that both limited and renewable resources are sustainable in the long-term. This would minimize potential impacts to mineral resources that could be identified in the future.

**Energy**

Would the Project:

- a) *Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

When compared to the current General Plan, the Proposed Project would result in an overall increase in housing units, commercial square footage, and industrial square footage (See Section 1.9 Proposed Project for details). The development of these increased land use densities would also contribute to the need for additional energy supplies (i.e., natural gas, electricity). However, due to efficiencies in land use planning, the Proposed Project will reduce overall vehicle miles traveled (VMT) at buildout. This VMT reduction is primarily due to a reduction in trip generation, combined with a shift in the relationship between residential and non-residential uses.

The annual demand for electricity (in kWh), natural gas (in therms), and transportation fuel (gasoline and diesel, in gallons), was estimated for the 2040 General Plan and is presented below in Tables 2.7-3 and 2.7-4.

**Table 2.7-2  
 Energy Consumption Factors**

Land Use	Electricity	Natural Gas	Vehicle Fuel Economy
Single Family Residential	8,717 kWh/unit/year	306 therms/unit/year	24 MPG <sup>1</sup>
Multi-Family Residential	4,568 kWh/unit/year	148 therms/unit/year	
Retail/Commercial	12.63 kWh/SF/year	0.02 therms/SF/year	
Office/Business Park	9.91 kWh/SF/year	0.03 therms/SF/year	
Industrial	10.15 kWh/SF/year	0.32 therms/SF/year	

Source: CalEEMod Version 2016.3.2 Outputs, see Appendix B of this DEIR. Assumptions based on unit inputs and energy outputs.

1. U.S. EPA Automotive Trends Report. Average MPG from 2012-2017. Assumes a mix of gasoline and diesel consumption. [www.epa.gov](http://www.epa.gov).

**Table 2.7-3  
 Annual Electricity Demand at General Plan Buildout**

Land Use	Existing Land Use Plan	Proposed Land Use Plan
Single Family Residential	222,732,000 kWh/year	216,326,000 kWh/year
Multi-Family Residential	130,180,000 kWh/year	136,104,000 kWh/year
Retail/Commercial	172,420,000 kWh/year	165,660,000 kWh/year
Office/Business Park	48,275,900 kWh/year	64,470,700 kWh/year
Industrial	96,987,000 kWh/year	114,455,000 kWh/year
<b>TOTAL</b>	<b>670,594,900 kWh/year</b>	<b>697,015,700 kWh/year</b>

Source: CalEEMod Version 2016.3.2 Outputs, see Appendix B of this DEIR.

**Table 2.7-4  
 Annual Natural Gas Demand at General Plan Buildout**

Land Use	Existing Land Use Plan	Proposed Land Use Plan
Single Family Residential	7,818,230 therms/year	7,593,350 therms/year
Multi-Family Residential	4,216,310 therms/year	4,408,190 therms/year
Retail/Commercial	303,066 therms/year	291,184 therms/year
Office/Business Park	142,246 therms/year	189,964 therms/year
Industrial	3,104,540 therms/year	3,663,680 therms/year
<b>TOTAL</b>	<b>15,584,392 therms/year</b>	<b>16,146,368 therms/year</b>

Source: CalEEMod Version 2016.3.2 Outputs, see Appendix B of this DEIR.

**Table 2.7-5  
 Annual Fuel Demand at General Plan Buildout**

	VMT per Day	Annual Fuel Consumption
<b>Existing Land Use Plan</b>	7,346,153	111,722,744 gallons gas/diesel
<b>Proposed Land Use Plan</b>	7,257,944	110,381,232 gallons gas/diesel

Source: Cathedral City General Plan Update Transportation Analysis, see Appendix E of this DEIR.

Implementation of policies, programs, and reduction strategies in the 2040 General Plan would assist in minimization of energy consumption associated with development. Policies 1 through 6 of the Energy and Mineral Resources Element were designed to encourage conservation of energy and usage of local wind, solar and other renewable resources. Policy 2, specifically, aims to minimize vehicle travel miles through the efficiencies in the circulation system and City’s land use pattern. As shown in Table 2.7-5, above, the increased land use efficiencies of the Proposed Project would have a positive impact on reducing overall VMTs and thus reducing fuel demand.

In addition, the City would ensure that future CEQA documentation be prepared for individual projects (with project-specific data), as needed, that would specifically mitigate any potential energy impacts to a less-than-significant level. This impact is considered less than significant because the proposed 2040 General Plan would implement a number of policies designed to minimize wasteful, inefficient, or unnecessary consumption of energy. Mitigation Measures ME-1 through ME-6 will ensure impacts related to energy efficiency are less than significant.

***b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

Future development facilitated by the proposed General Plan Update would be evaluated on a project-by-project basis to assure it is designed, built, and operated in accordance with all applicable energy-related regulations, including energy efficiency and conservation standards. Such regulations and standards include the California Building Code, California Green Building Code, and potentially more stringent future regulations.

The General Plan Update will not interfere with any state or local plan that promotes renewable energy or energy efficiency. The General Plan itself includes Policy 1 of the Energy and Mineral Resources Element, which encourages energy conservation in new development and the City’s transportation system. Policy 4 supports the City’s participation in local and regional efforts to develop and operate alternative energy systems that take advantage of local wind, solar, and other renewable resources. Policy 6 encourages the City to explore and update policies that increase energy efficiency and the use of alternative sources for the economic, environmental, and social benefit of the City.

The General Plan Update will not interfere with any state or local plan that promotes renewable energy or energy efficiency. No impact would occur.

### **2.7.7 Mitigation Measures**

The policies and programs of the Energy and Mineral Resources Sub-Element and the Air Quality and Climate Stability Element will ensure that the use of energy and mineral resources in the City is as efficient and possible. As a result, impacts to energy and mineral resources from implementation of the General Plan are expected to be less than significant. Nonetheless, the following measures will serve to avoid, minimize and mitigate potential impacts to mineral and energy resources.

- ME-1 The City shall require new developments to reduce energy consumption through appropriate building technologies, promotion of non-auto transportation modes, support for greater use of alternative energy sources, and dissemination of public information regarding energy conservation techniques.
- ME-2 The City shall work with utility providers to provide incentives for energy- and water-efficient building projects, e.g. by giving green projects priority in plan review, processing, and field inspection services.
- ME-3 The City shall develop or otherwise make available information to developers on energy efficient and conserving building design and technologies, addressing enhanced wall and ceiling insulation, thermally efficient glazing, and efficient heating and cooling equipment and household appliances.
- ME-4 The City shall periodically assess the local transportation system and plan or maintain improvements that enhance the efficient movement of people and goods through the community.
- ME-5 The City shall continue to participate in the transportation planning efforts of SunLine Transit Authority and shall encourage the expanded use of public transit, vehicles fueled by compressed natural gas and hydrogen, buses with bike racks and other system improvements that enhance overall transportation system operations and energy conservation.
- ME-6 The City shall strive for efficient community land use and transportation planning and design, and shall assure the provision of convenient neighborhood shopping, medical and other professional services appropriately located to minimize travel and facilitate the use of alternative means of transportation.

### **2.7.8 Significance After Mitigation**

There will be less than significant impacts on energy and mineral resources, and no additional mitigation is required.

### **2.7.9 Cumulative Impacts**

#### **Mineral Resources**

The cumulative impacts of the proposed General Plan Update on mineral resources are evaluated based on the potential impacts of other past, present, and future development in the surrounding area. Future development and redevelopment facilitated under the General Plan Update would contribute incrementally to increased demand for construction aggregate in the region. However, PCC-grade aggregate reserves in the Palm Springs Production-Consumption Area are projected to be sufficient to meet future demand in the region through the year 2038. Therefore, the loss of mineral resources due to the buildout of the proposed General Plan Update planning area would not be cumulatively significant.

### **Energy**

As the City continues to grow, the demand for energy resources will also continue to increase. The cumulative impacts of the proposed General Plan Update on energy resources are evaluated based on the potential impacts of other past, present, and future development in the surrounding area. Although the energy required to serve the planning area will contribute to the continued consumption of locally and regionally generated energy resources, the General Plan requires the City to participate in energy conservation and efficiency initiatives and practices. The contribution of the proposed General Plan Update will not be cumulatively considerable.

## 2.8 Geology and Soils

### 2.8.1 Introduction

This section of the EIR describes existing geology and soils within the General Plan area and analyzes the potential impacts of the Cathedral City General Plan update on regional and local geology and soils. A wide range of data and information, from research and analysis conducted for the City to regional-scale planning and environmental documents, has been used in researching and analyzing the General Plan update and its potential effects. These include detailed analysis of regional and local geology, tectonics, soils, and seismicity conditions, as well as analysis of anticipated future conditions.

### 2.8.2 Thresholds of Significance

#### Thresholds of Significance

Based upon Appendix G of the CEQA Guidelines, the proposed Cathedral City General Plan update would cause significant impacts to soils and/or geological conditions if it would:

- a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
  - ii) Strong seismic ground shaking?
  - iii) Seismic-related ground failure, including liquefaction?
  - iv) Landslides?
- b) Result in substantial soil erosion or the loss of topsoil?
- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?
- f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

### 2.8.3 Regulatory Framework

#### State

##### Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the State Geologist established regulatory zones called “earthquake fault zones” around the surface traces of active faults and published maps showing these zones. Earthquake fault zones are designated by the California Geological Survey (CGS) and are delineated along traces of faults where mapping demonstrates surface fault rupture has occurred within the past 11,000 years.

Construction within these zones cannot be permitted until a geologic investigation has been conducted to prove that a building planned for human occupancy will not be constructed across an active fault. These types of site evaluations address the precise location and recency of rupture along traces of the faults and are typically based on observations made in trenches excavated across fault traces.

#### Seismic Hazards Mapping Act

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690 to 2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically-induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act; the State is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards. Cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within Seismic Hazard Zones until appropriate site-specific geologic and/or geotechnical investigations have been conducted and measures to reduce potential damage have been incorporated into the development plans.

#### California Building Code (CBC)

The CBC has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction.

The 2016 CBC incorporates the adaptation of the 2015 International Building Code (IBC) by the International Code of the International Code Council with necessary California amendments. It also contains California amendments based on the American Society of Civil Engineers (ASCE) Minimum Design Standards 7-05. ASCE 7-05 provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

### **Regional and Local**

#### Cathedral City General Plan

The City's General Plan Geotechnical Element addresses the issue of protection of people and property from risks associated with natural disasters, e.g., fires, floods, and earthquakes. The element contains numerous policies that address safety from hazards such as groundshaking, slope instability, liquefaction, and subsidence.

**Policy 1:** The City shall establish and maintain an information database containing maps and other information which describe seismic and other geotechnical hazards occurring within the City boundaries, sphere-of-influence and planning area.

**Policy 2:** Continue to regularly update building and fire codes to provide for changes or advancements in seismic safety design.

**Policy 3:** All new development shall be constructed in accordance with the prevailing seismic design requirements contained in the most recently adopted edition of the Uniform Building Code/International Building Code and as otherwise required by the City.

**Policy 4:** The City shall require geological and geotechnical investigations in areas of potential seismic or geologic hazards as part of the environmental and development review process. The City shall not approve proposals and projects for development or redevelopment which do not provide for mitigation of seismic or geologic hazards to the satisfaction of the responsible agencies.

**Policy 5:** Promote and encourage the strengthening of older, inadequately reinforced structures in the City by retrofitting to better resist the effects of strong ground shaking.

**Policy 6:** The City shall encourage the strengthening of such critical public facilities such as utilities, schools, hospitals, healthcare facilities, eldercare facilities, police and fire stations, and emergency communication facilities.

**Policy 7:** To the extent feasible, regulate the location of new structures, including utilities, schools, hospitals, healthcare and eldercare facilities, police and fire stations, and emergency communication facilities, within areas that would directly be affected by seismic or geologic hazards.

**Policy 8:** Development proposed for human occupancy on lands within a City Fault Hazard Management Zone and where the location of the fault is firmly determined, fault trenching and other geotechnical investigations shall be required. Based on these investigations the City may restrict or prohibiting construction of structures for human occupancy across the fault trace.

**Policy 9:** Where development is proposed in areas identified as being subject to geotechnical hazards (including, but not limited to slope instability, soil collapse, liquefaction and seismically induced settlement), the City shall require the preparation of site-specific geotechnical investigations by the applicant prior to completion of CEQA studies and development approval. All such studies shall include mitigation measures that reduce associated hazards to insignificant levels.

**Policy 10:** To avoid and minimize soil erosion, all grading, earthwork, and construction activities shall be in accordance with applicable fugitive dust control ordinances and regulations, including those established by the City, CVAG, SCAQMD, and other appropriate agencies.

**Policy 11:** To minimize the potential impacts of subsidence due to the extraction of groundwater, the City shall actively support and participate in local and regional efforts at groundwater conservation and recharge.

**Policy 12:** Restrict development along the foothills to minimize the potential impacts of slope failure. In addition, minimize grading and modification to the natural topography to prevent potential for man-induced slope failures.

**Policy 13:** The City Shall ensure to the fullest extent possible that, in the event of a major geologic disaster, dependent care and high-occupancy facilities will remain safe.

**Policy 14:** The City's Fire Department, as part of their annual review of businesses and dependent care facilities, shall encourage and educate the owners or operators about maintaining accessibility following and earthquake, emergency backup power, and securely anchored shelves, computers and other equipment, and other non-structural elements.

## 2.8.4 Regional Environmental Setting

### Regional Geology

The City of Cathedral City is located in the Coachella Valley which lies Colorado Desert Geomorphic Province.<sup>1</sup> This province consists of a low-lying barren desert basin, about 245 feet below sea level in part, and is dominated by the Salton Sea. The province is a depressed block between active branches of the alluvium-covered San Andreas Fault with the southern extension of the Mojave Desert on the east. It is characterized by the ancient beach lines and silt deposits of extinct Lake Cahuilla.

Tectonically, the Coachella Valley is a deep fault graben formed by tectonic movement along the San Andreas Fault (SAF) (Exhibit 2.8-1).<sup>2</sup> The SAF is a complex strike-slip fault that represents a continuous zone of faulting from Point Mendocino in northern California to the Salton Sea and into the Sea of Cortez. It is more correctly referred to as a fault "zone", and the motion accommodated by the fault zone is distributed along a complex system of interrelated faults.<sup>3</sup>

The Coachella Valley is bounded by the Little San Bernardino Mountains on the north and northeast, and the Santa Rosa and San Jacinto Mountains on the southwest and west. Geologic materials of the San Bernardino Mountains to the northwest are mainly comprised of ancient basement rocks that have been uplifted to their current elevations. The southwestern and southeastern margins of the San Bernardino Mountains are traversed by several strands of the San Andreas Fault zone that are part of the geomorphic and structural boundary of the range. Together, the San Jacinto and Santa Rosa Mountains form the Peninsular Ranges Province and are classified as Mesozoic granite, which was first exposed about 95 million years ago. The San Jacinto Mountain Range is traversed by the San Jacinto Fault zone on its western margin.

The valley includes a diverse range of rocks and sediments formed or deposited over millions of years. Sediments from the surrounding mountain ranges are carried into and across the Coachella Valley through numerous seasonal streams flowing to the Whitewater River, San Gorgonio River and the Snow Creek, Chino Canyon, Tahquitz Canyon, Palm Canyon, Eagle Canyon, Mission, Big Morongo, and Little Morongo Creeks. The Whitewater River is the master drainage for the valley and flows northwest to southeast. Episodic flooding of major regional drainages, including the Whitewater River and Coachella Valley Stormwater Channels, results in the deposition of sand and gravel on the valley floor.

## 2.8.5 Existing Conditions

### Soils and Surficial Rocks

The City's geologic composition is related to its proximity to the San Andreas Fault, which passes through the northern portion of the valley and northern city limits, and other active faults. The rocks and sediments exposed at the surface of the General Plan planning area can be classified as follows based on their age:

- 1) Mesozoic and older (66 million years old and older) rocks in the Santa Rosa Mountains,
- 2) Middle to Early Pleistocene (11,000 to 1.6 million years old) sediments on Edom Hill, Flat Top Mountain, and the northwestern portion of the planning area, and
- 3) Holocene (0-11,000 years old) sediments on the valley floor.

*Metasedimentary Rocks:* The oldest rocks reported within the planning area are Cretaceous and pre-Cretaceous metamorphic rocks of sedimentary and volcanic origin. They are limited to the slopes of the Santa Rosa Mountains and typically are non-water-bearing, except where they are extensively jointed and fractured.

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<sup>1</sup> Geological Gems of California State Parks - Geogem Note 53 (Colorado Desert Geomorphic Province).

<sup>2</sup> Alles, D. L. (2012). Geology of the Salton Trough.

<sup>3</sup> Hill, M. L., & Dibblee, T. W. (1953). San Andreas, Garlock, And Big Pine Faults, California: A Study of the Character, History, and Tectonic Significance of Their Displacements. Geological Society of America Bulletin, 64(4), 443-458.

*Alluvial Sediments:* The most recently deposited sediments in the planning area are found on the wash, fan and valley alluvial areas where water transports and processes these unconsolidated sandy and gravelly materials of Late Holocene age. Some are moderately loose sand and silty sand, boulder, cobble, gravel, sand, and silt deposits eroded from the confined valley or canyons. They are found in the southern and northern portion of the planning area along the Santa Rosa Mountains and Flat Top Mountain southwest of Edom Hill. Other deposits are comprised of clay, silt, sand, and gravel and are found in the central planning area mainly along the Whitewater River, and the Salvia and Morongo Washes south of the Indio Hills and the Cathedral Canyon drainages at the base of the Santa Rosa Mountains. They also occur north of the Indio Hills.

Alluvial plain sediments are typically loose near the ground surface but become denser with increasing depth. They have medium to high permeabilities, except where silt layers retard the percolation of water. Because these units can be readily compacted with a combination of saturation and wheel rolling with rubber-tired construction equipment, they are generally suitable for use as compacted fill. Shrinkage of 20% to 30% can be expected upon compaction. Alluvial fan sediments, which are dry with higher permeabilities, are also generally suitable for use as compacted fill. Compaction of the near-surface soils can be expected to result in up to 15% shrinkage.

The majority of the City is composed of alluvium which has low potential to contain unique paleontological resources.

*Aeolian and Dune Deposits:* These medium-grained soils are picked up and transported by strong winds emanating from the San Gorgonio Pass at the northwesterly edge of the Coachella Valley. These deposits are unconsolidated, generally well-sorted windblown (aeolian) sand which also occur as dune sand deposits. They are redistributed along the central valley floor where they form shifting sand dunes. A thick accumulation of these windblown sands has formed the Palm Springs Sand Ridge that arises in Cathedral City and, in some places, rises up to 120 feet above the valley floor. Windblown deposits underlie much of the developed portion of the planning area and sheltered portions of lands north of I-10.

Aeolian deposits are typically loose near the ground surface but become denser with increasing depth. Like alluvial deposits, they are generally suitable for use as compacted fill, as they can be readily compacted with a combination of thorough wetting and wheel rolling with rubber-tired construction equipment. These units typically have high permeabilities, and shrinkage of up to 30% can be expected upon compaction.

## **GEOLOGIC HAZARDS**

### **Slope Instability**

Two areas within the General Plan planning area have a moderate to high susceptibility to rock falls and landsliding: 1) land adjacent to the Indio Hills, and 2) slopes of the Santa Rosa Mountains. The metasedimentary and intrusive rocks of the slopes of the Santa Rosa Mountains have several planes of weakness, including joints, fractures, and foliation. Depending on their orientation, these areas could be susceptible to failure. Additionally, as these rocks weather, they can form rounded boulders that perch precariously on steep slopes and pose rock fall hazards down slope. Areas with surface soils comprised of sands and other less cohesive soils, and located on sloping terrain, can be subject to sliding during strong ground shaking.

Earthquake-induced landslides and rock falls may occur in both the Indio Hills and Santa Rosa Mountains and are addressed in subsequent sections of this chapter. Mitigation of these hazards is best accomplished by avoiding development on steep slopes and implementing structural setbacks at the toe of slopes. Any proposed development adjacent to steep slopes of the Santa Rosa Mountains or Indio Hills should include an analysis for potential slope instability. Areas of potential slope instability are shown on Exhibit 2.8-1.

### Collapsible Soils

Soil collapse, or hydro-consolidation, occurs when soils undergo a rearrangement of their grains and a loss of cementation, resulting in substantial and rapid settlement under relatively low loads. This phenomenon typically occurs in recently deposited Holocene soils in a dry or semi-arid environment, including aeolian sands and alluvial fan and mudflow sediments deposited during flash floods. The combination of weight from a building or other structure, and an increase in surface water infiltration (such as from irrigation or a rise in the groundwater table) can initiate rapid settlement and cause structural foundations and walls to crack.

Alluvial and aeolian sediments in the planning area have the potential for collapse. Where development is proposed on these soils, this hazard should be evaluated as part of site-specific geotechnical evaluations, and recommendations should be made to mitigate the potential hazard. These studies should include analysis of the settlement potential of the entire soil column to the effective depth of infiltration of irrigation water, rather than only the near-surface soils. Additional recommendations that can mitigate these impacts include pre-watering of susceptible soils to induce collapse prior to construction, designing drainage to flow away from structures, avoiding open-bottomed planters adjacent to structures, using roof gutters to direct drainage away from foundations, and limiting the use of irrigation water.

### Expansive Soils

Expansive soils contain significant amounts of clay particles and have the ability to give up water (shrink) or take on water (swell). When swelling occurs, the soils can exert significant pressure on structures (e.g. buildings, channel linings and other structures) built upon them and can result in structural and other damage. Surface soils in the planning area are generally described as predominantly sand, riverwash gravels, and rock outcrop, with the relatively minor amounts of clay. Minor amounts of clay present in the planning area are not considered a hazard to development in the planning area. The older fan deposits of the Indio Hills may contain clay-rich soils near the surface; however, these units are typically removed and recompacted during grading. Mixing of soils during this process is expected to reduce their expansion potential.

### Ground Subsidence

Ground subsidence is the gradual settling or sinking of the ground surface with little or no horizontal movement, and is usually associated with the extraction of oil, gas, or groundwater. During this process, fluids (including water) and gases contained in subsurface clay layers are squeezed or pumped out, and the clay is compacted by the weight of overlying sediments. Subsidence can result in damage to structures that are sensitive to slight changes in elevation, such as larger buildings and foundations, canals and channel lining, and wells. Subsidence can also result in changes to surface drainage, reductions in aquifer storage capacity, and the formation of earth fissures.

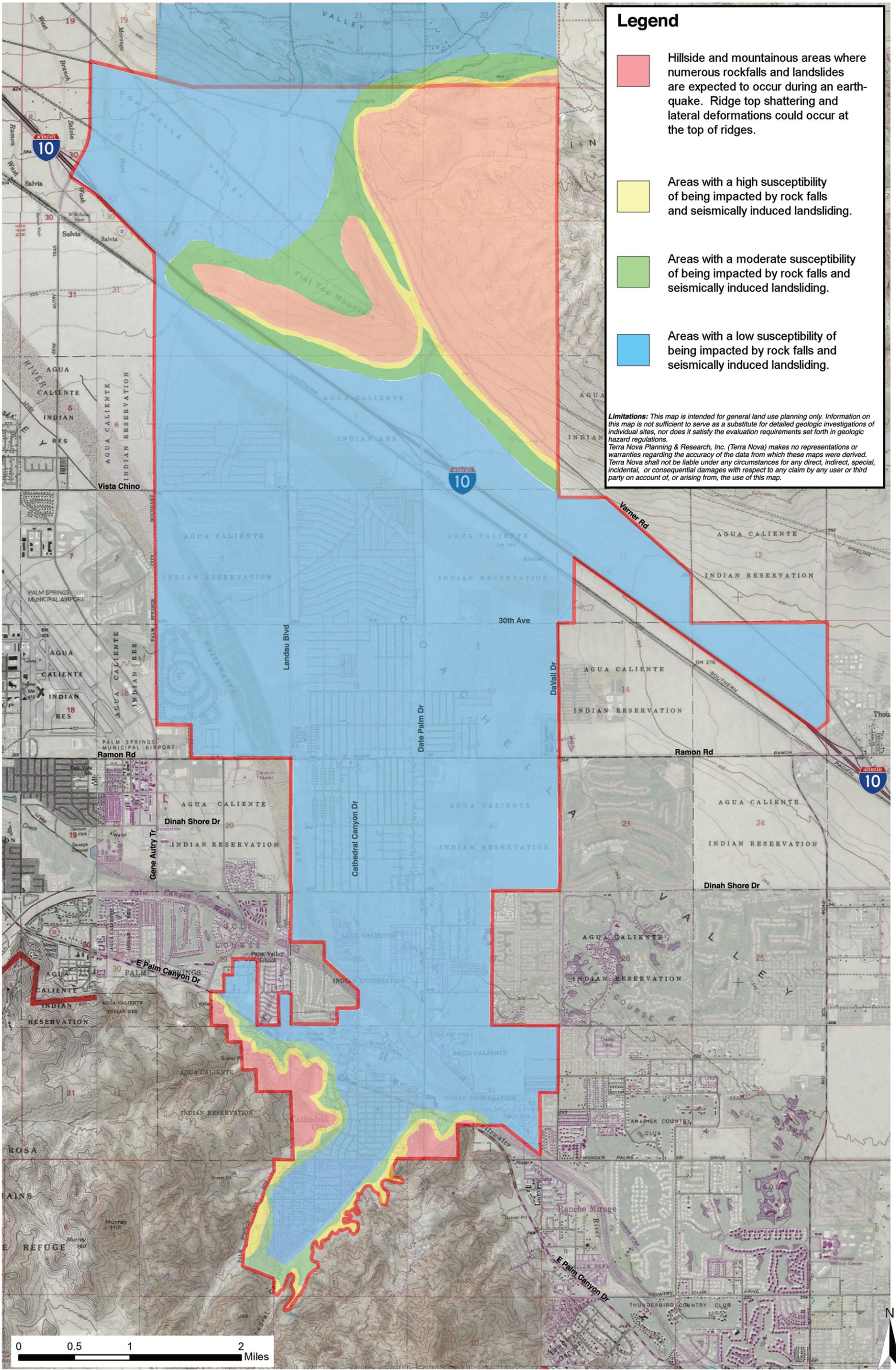
Subsidence as a result of groundwater withdrawal is one of the major environmental constraints facing the Coachella Valley, although most evidence of regional subsidence has been observed in the eastern Coachella Valley in Palm Desert, Indian Wells, and La Quinta. Since the late 1970s, the regional demand for groundwater has exceeded the supply, and the groundwater basin in the Coachella Valley is currently in a state of overdraft. Continued overdraft of the aquifer would result in declining groundwater levels, thereby increasing the potential for associated subsidence. It should be noted that the regional groundwater managers, including CVWD and DWA, have been proactive in securing and importing water to recharge the aquifer. It is hoped that the ongoing overdraft condition will end by the early 2020s.

### Wind Erosion

Wind funneling through the San Geronio Pass picks up sands and silts from the alluvial plain and washes and carries them across the valley floor, sorting these materials into various grades of coarseness. Wind erosion is a serious environmental problem in the valley often resulting in soil degradation, damage to cars and structures, and contributing to poor air quality.

As shown in Exhibit 2.8-2, most of the General Plan planning area is located within *very severe* and *severe* wind erosion hazard zones. While winds may be strong across all portions of the City, it is the silty and light sandy soils that are most erosive. Land development and other sources of soil destabilization directly and indirectly aggravate soil erosion by removing the stabilizing crust of undisturbed soils and destroying vegetation.

Pursuant to California Government Code Section 65302(d)(2), the General Plan is required to incorporate policies to prevent soil erosion and protect the community from its effects. For Cathedral City, mitigation of this hazard has required the development and implementation of multi-faceted dust control plans during and following development. Please see Section 2.4, Air Quality and Greenhouse Gases, for more information on City and regional dust control measures.



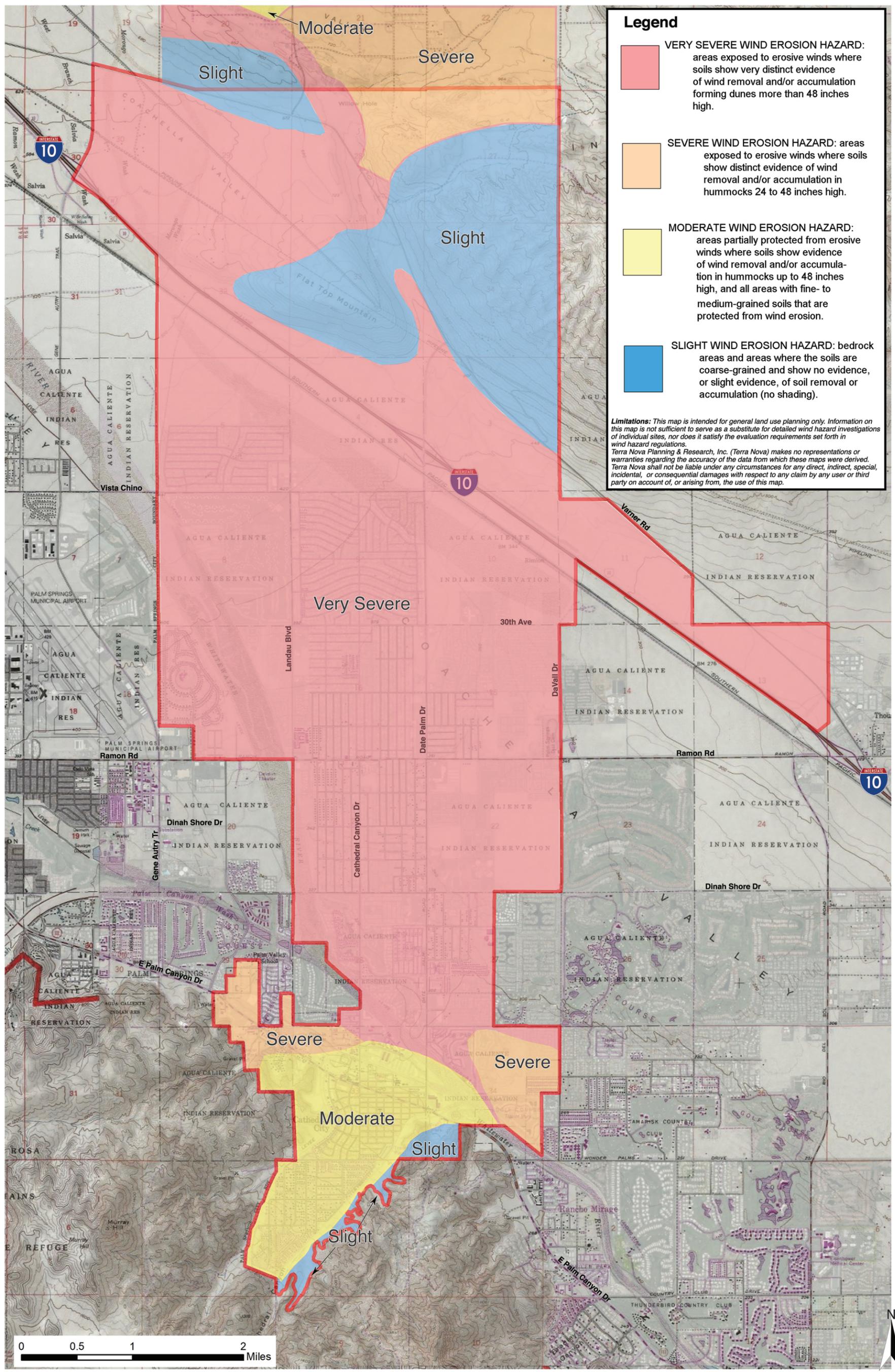
**Legend**

- Hillside and mountainous areas where numerous rockfalls and landslides are expected to occur during an earthquake. Ridge top shattering and lateral deformations could occur at the top of ridges.
- Areas with a high susceptibility of being impacted by rock falls and seismically induced landsliding.
- Areas with a moderate susceptibility of being impacted by rock falls and seismically induced landsliding.
- Areas with a low susceptibility of being impacted by rock falls and seismically induced landsliding.

*Limitations: This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations. Terra Nova Planning & Research, Inc. (Terra Nova) makes no representations or warranties regarding the accuracy of the data from which these maps were derived. Terra Nova shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of this map.*

Source: Esri, USGS, 2018; Earth Consultants International, 2001

06.21.18



**Legend**

- VERY SEVERE WIND EROSION HAZARD:** areas exposed to erosive winds where soils show very distinct evidence of wind removal and/or accumulation forming dunes more than 48 inches high.
- SEVERE WIND EROSION HAZARD:** areas exposed to erosive winds where soils show distinct evidence of wind removal and/or accumulation in hummocks 24 to 48 inches high.
- MODERATE WIND EROSION HAZARD:** areas partially protected from erosive winds where soils show evidence of wind removal and/or accumulation in hummocks up to 48 inches high, and all areas with fine- to medium-grained soils that are protected from wind erosion.
- SLIGHT WIND EROSION HAZARD:** bedrock areas and areas where the soils are coarse-grained and show no evidence, or slight evidence, of soil removal or accumulation (no shading).

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## REGIONAL TECTONIC SETTING

Cathedral City is located along the southern segment of the San Andreas Fault Zone, an active fault zone that has the greatest influence on seismic hazards in the City and valley. The San Jacinto Fault Zone west of and at the foot of the San Jacinto Mountains also has the potential to generate strong ground shaking in the City. Other numerous earthquake-producing faults in the region include the Pinto Mountain Fault to the north, faults in the Eastern California Shear Zone (including the Burnt Mountain, Eureka Peak, and Pisgah-Bullion Mountain-Mesquite Lake faults), and the Elsinore Fault to the west. Faults that have not shown movement within the past 11,000 years are considered "inactive."

The San Andreas Fault passes through the northern portion of the City and is capable of generating magnitude 8.0+ earthquakes. A portion of faults in this area are within the Alquist-Priolo Earthquake Fault Zone and Riverside County-designated fault zone hazard maps. The network of the faults in the City is shown in Exhibit 2.8-3 and discussed below.

### San Andreas Fault Zone

The San Andrea Fault Zone consists of northwest-southeast trending faults and folds that extend from the Salton Trough and the Sea of Cortez on the southeast, northward to approximately Point Mendocino. This fault zone is approximately 800 miles in length. In southern California, the San Andreas fault system is comprised of three segments: 1) Mojave Desert segment, 2) San Bernardino Mountains segment, and 3) Coachella Valley segment.<sup>4</sup>

Currently, portions of the Coachella Valley segment fault are located within Alquist-Priolo Earthquake Fault Zone. The Coachella Valley segment crosses the General Plan planning area. It consists of two fault strands: the San Andreas Fault strand (also known as the North Branch or Mission Creek fault) which occurs north and east of the planning area; and the Banning Fault strand (also known as the South Branch fault) which extends across the northern portion of planning area.

The two strands merge southeast of the planning area, near Indio, and continue southeastwardly toward the United States-Mexico border. Paleoseismic studies that include fault trenching indicate that the last surface-rupturing earthquake on the Coachella Valley segment occurred around 1680. Prior to this, earthquakes on this fault occurred at an average recurrence interval of every 220± years. The merged segment is creeping at a rate of about 25 mm/year (±5 mm/year), has more than a 22% probability of rupturing before the year 2024, and is expected to generate earthquakes with a magnitude of 6.0-7.0 on the Richter scale.

The Banning Fault of the Coachella Valley segment, which passes through the planning area, is capable of producing a magnitude 7.4 earthquake that would result in peak horizontal ground accelerations of between 0.45 and 0.9g in Cathedral City. Within the planning area, it consists of several splays that branch off from one another, then come together. In the vicinity of the Edom Hill Landfill (now closed), just east of the planning area, the fault consists of one main fault and at least three secondary splays. The Banning Fault is believed to have been responsible for generating the magnitude 5.9 North Palm Springs earthquake in 1986. Although the ground surface did not rupture during this quake, ground fractures occurred on the northern side of the fault, between Whitewater Canyon and State Highway 62.

The Mission Creek fault is capable of generating a magnitude 7.1 earthquake, with resultant peak ground accelerations of between 0.4 and 0.8g in the City. Geotechnical studies in the Desert Hot Springs area have documented several breaks that can be traced upward to within one foot of the ground surface. It is estimated that the City would be susceptible to ground accelerations greater than 1.0g during a simultaneous rupture of the Banning and Mission Creek faults.

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<sup>4</sup> Natural Hazard Mapping, Analysis, and Mitigation: a Technical Background Report in Support of the Safety Element of the New Riverside County 2000 General Plan, prepared by Earth Consultants International, August 2000.

The Coachella Valley segment joins the San Bernardino Mountains segment to the northwest of the planning area, near the northwestern limits of the City of Desert Hot Springs. The San Bernardino Mountains segment has a slip rate of about  $24 \pm$  mm/year ( $\pm 5$  mm/year), with an average recurrence interval of 146 years. It is estimated that this segment has a 28% probability of rupturing before year 2024.

#### Garnet Hill Fault

The Garnet Hill fault is mapped as a buried fault and is based on a gravity anomaly survey of the Coachella Valley by a major oil company.<sup>5</sup> The Garnet Hill fault is not mapped as offsetting Holocene- age materials<sup>6</sup> and, therefore, does not display evidence of being active.<sup>7</sup> The fault can act as a plane of weakness and move in response to an earthquake on another nearby fault.

Although the California Division of Mines and Geology (California Geological Survey) has not designated it as an active fault subject to fault study, Riverside County has designated the Garnet Hill fault for further study. The Garnet Hill fault extends from the vicinity of Whitewater Canyon to the southeast portion of Edom Hill where it crosses the planning area near and north of I-10 and dies out.<sup>8</sup> This fault is primarily a right-lateral strike-slip fault along most of its trace, but splays into a series of oblique reverse faults at its western end. It consists of a series of left-stepping, northwest-trending right-lateral faults with active folds at each stepover.<sup>9</sup> The discontinuous geometry of the Garnet Hill fault and the small size of these folds suggest that cumulative slip is too low to have led yet to integration of the fault into a single strand. The slip rate of the Garnet Hill fault has not yet been determined.

The Garnet Hill fault and the Coachella Valley segment of the Banning fault merge at a depth of about 5 km to form a single fault and merge with the San Gorgonio Pass fault system.<sup>10</sup> Seismological data also suggest that the Garnet Hill fault merges with the San Gorgonio Pass fault zone to carry slip between the disconnected segments of the San Andreas fault, thus making the Banning-Garnet Hill-San Gorgonio Pass system a significant seismic source in the region. Based on the seismic pattern, it is interpreted that the M5.9 1986 North Palm Springs earthquake main shock and aftershock sequences occurred on the Banning strand<sup>11</sup>; however, the main event occurred on the linked San Gorgonio Pass-Garnet Hill-Coachella Valley Banning fault.<sup>12</sup> The Garnet Hill fault has been mapped by the County of Riverside and referred to as County Fault Zone.<sup>13</sup> The County applies Alquist-Priolo Earthquake Fault Zoning Act provisions to the Garnet Hill fault to minimize potential impacts.

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<sup>5</sup> Geology of the Desert Hot Springs-Upper Coachella Valley area, California, California Division of Mines and Geology Special Report 94, 50 (1968). by Richard J. Proctor.

<sup>6</sup> Jennings, C.W. 1994. Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions: California Division of Mines and Geology, Geologic Data Map No.6, Scale 1:750,000.

<sup>7</sup> Hart, E.W., Smith, D.P., and Saul, R.B. 1979. Summary Report: Fault Evaluation Program, 1978 Area (Peninsular Ranges-Salton Trough Region): California Division of Mines and Geology, Open File Report 79-10.

<sup>8</sup> Holocene geologic slip rate for the Banning strand of the southern San Andreas Fault, southern California by Gold et al., 2015.

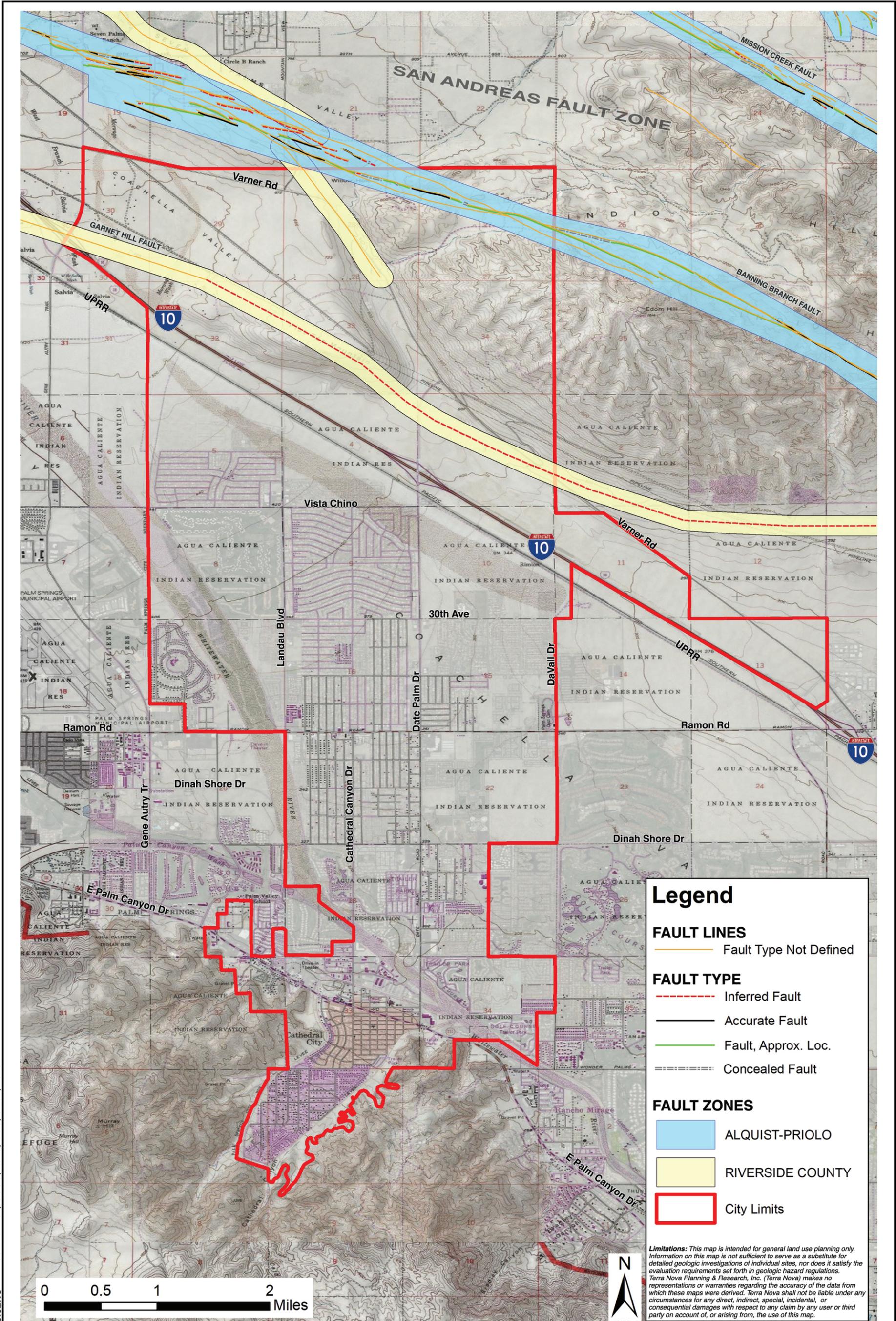
<sup>9</sup> Complexities of the San Andreas fault near San Gorgonio Pass: Implications for large earthquakes, by Yule and Sieh (2003).

<sup>10</sup> Ibid.

<sup>11</sup> Jones, L. M., L. K. Hutton, D. D. Given, and C. R. Allen (1986), The North Palm Springs, California, earthquake sequence of July 1986, Bull. Seismol. Soc. Am., 76, 1830–1837.

<sup>12</sup> Ibid.

<sup>13</sup> County of Riverside General Plan (2004)-Safety Element.



**Legend**

**FAULT LINES**  
 — Fault Type Not Defined

**FAULT TYPE**  
 - - - Inferred Fault  
 — Accurate Fault  
 — Fault, Approx. Loc.  
 - - - Concealed Fault

**FAULT ZONES**  
 ALQUIST-PRIOLO  
 RIVERSIDE COUNTY  
 City Limits

*Limitations: This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations. Terra Nova Planning & Research, Inc. (Terra Nova) makes no representations or warranties regarding the accuracy of the data from which these maps were derived. Terra Nova shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of this map.*

San Jacinto Fault Zone

As noted, the San Jacinto Fault Zone extends from the City of San Bernardino, southeasterly toward the Brawley area, where it continues south of the U.S./Mexico border as the Imperial Fault. The fault is south of the planning area but has a high level of historic seismic activity, with at least ten moderate (M6> to 7>) earthquakes having occurred between 1890 and 1986, with an estimated recurrence interval of between 150 and 300 years.

Available data suggest that the slip rates of the fault’s northern segments are about 12± mm/year (±6 mm/year), and slip rates of the southern segments are about 4± mm/year (±2 mm/year). The San Bernardino and San Jacinto Valley segments are estimated to have a 37% and 43% probability, respectively, of rupturing before the year 2024. Based on a maximum credible earthquake of magnitude 7.0 on the closest segment on this fault, such an event would generate horizontal ground acceleration of 0.1 to 0.25g in the City.

East Mojave Shear Zone

The East Mojave Shear Zone includes several northwest-trending faults in the southern Mojave Desert that collectively appear to be accommodating between 9% and 23% of the motion between the North American and Pacific tectonic plates. Paleoseismic studies indicate that several earthquakes have occurred in this area during the Holocene Epoch, including the 1992 Landers earthquake, which occurred on the Johnson Valley fault. A magnitude 7.3 earthquake on one of these fault segments is expected to generate a peak horizontal ground acceleration of between 0.1 and 0.15g (g is the acceleration of gravity, equal to 9.8 m/sec<sup>2</sup>) and a Modified Mercalli Intensity (MMI) seismic intensity of between VII and VIII in Cathedral City.

Pinto Mountain Fault

The Pinto Mountain fault is an east-trending fault that is traceable for approximately 47 miles, from its junction with the San Andreas fault eastward to just east of the City of Twentynine Palms, north of the planning area. The Pinto Mountain fault is considered active, and Holocene Epoch movement has been documented. The fault is capable of generating a maximum credible earthquake of 7.0, which would generate peak horizontal ground accelerations of between 0.15 and 0.3g in the General Plan planning area.

Seismic Activity in the Planning Area

California Government Code Section 65302(g)(1) requires that the General Plan incorporate policies to address seismic risks, avoid earthquake-caused ground-failure hazards, and protect the community from seismic hazards. Several faults present in the planning area are capable of generating strong ground shaking. Potential seismic intensities in the City and surrounding area associated the earthquakes are shown in Table 2.8-1 below.

**Table 2.8-1  
 Potential Seismic Intensities Associated with  
 the Maximum Credible Earthquake (MCE)**

<b>Fault Name</b>	<b>Distance to GP Area (miles)</b>	<b>Magnitude of MCE</b>	<b>Peak Ground Acceleration of MCE (g)*</b>	<b>MMI** from MCE</b>
<b>San Andreas</b>				
Coachella Segment (south strand)	0 – 9	7.4	0.459	X-XII
Coachella Segment (north strand)	1 – 10	7.1	0.435	X-XI
San Bernardino Mtns. Segment	4 – 11	7.3	0.332	IX-XI
<b>Garnet Hill</b>	0-6	7.0	0.17 – 0.70	VIII - XI
<b>East Mojave Shear</b>				
Burnt Mountain	7 – 14	6.4	0.201	VIII-IX
Eureka Peak	9 – 16	6.4	0.165	VII-IX
Landers	20 – 28	7.3	0.15-0.25	VI-IX
Lenwood-Lockhardt-Old Woman	34 – 40	7.3		VI-VII

**Table 2.8-1  
 Potential Seismic Intensities Associated with  
 the Maximum Credible Earthquake (MCE)**

<b>Fault Name</b>	<b>Distance to GP Area (miles)</b>	<b>Magnitude of MCE</b>	<b>Peak Ground Acceleration of MCE (g)*</b>	<b>MMI**</b>
Camp Rock-Emerson-Copper Mtn	25 – 32	6.9	0.06 - 0.11	V-VIII
Johnson Valley (northern)	30 – 38	6.7	0.10-0.15	V-VII
Pisgah-Bullion Mtn-Mesquite	31 – 37	7.1	0.05-0.10	V-VIII
Calico-Newberry-Hidalgo	35 – 43	7.1	0.05-0.15	IV-VIII
Helendale-S. Lockhardt	41 – 47	7.1	0.05-0.10	IV-VII
<b>North Frontal Fault Zone</b>	30 – 47	7.0	0.15-0.30	VIII-IX
<b>Pinto Mountain</b>	15 – 22	7.0	0.15-0.30	VIII-IX
<b>San Jacinto</b>				
Anza	17 – 24	7.2	0.135	VIII-IX
Coyote Creek	21 – 29	6.8	0.092	VI-VIII
San Jacinto (San Jacinto Valley)	25 - 29	6.9	0.09 - 0.10	VII-VII
<b>Elsinore</b>	40 – 47	7.1	0.05-0.10	V-VII

\* Peak Ground Acceleration, where g is the acceleration of gravity, equal to 9.8 m/sec<sup>2</sup>

\*\* MMI = Modified Mercalli Intensity

Sources:

Table 3, “Geotechnical Engineering Update Report Environmental Impact Assessment Proposed 567 Acre Specific Plan Development Area of Varner Road and Bob Hope Drive, County of Riverside, California,” RJR Engineering, June 2013.

Table 1-2, “Technical Background Report to The Safety Element of The General Plan for The City of Palm Springs, Riverside County, California,” prepared by Earth Consultants International, Inc., September 2005.

Table 1-2, “Seismic, Geologic, and Flooding Sections of the Technical Background Report to the Safety Element of the General Plan for Cathedral City,” prepared by Earth Consultants International, Inc., June 1999.

## SEISMICALLY INDUCED GEOTECHNICAL HAZARDS

### Liquefaction

Liquefaction is the total or substantial loss of shear strength of loose, sandy, saturated sediments in the presence of ground accelerations greater than 0.2g; note that g is the acceleration of gravity, equal to 9.8 m/sec<sup>2</sup>. When liquefaction occurs, the sediments involved behave like a liquid. This phenomenon can result in structural stress and/or failure due to settlement, the buoyant rise of buried structures such as tanks and pipelines, the formation of mud spouts and sand boils, and seepage of water through ground cracks.

As shown on Exhibit 2.8-4, the potential for liquefaction to occur is low-to-none throughout most of the planning area, principally because groundwater in the Cathedral City area typically occurs 150 to 200 feet below the ground surface, too deep to saturate the loose sediments of the valley floor. Although depth to groundwater may be less than 50 feet adjacent to the Santa Rosa Mountains in the southern planning area, the alluvial sediments in this area are coarse-grained sand, gravels, cobbles, and boulders that are not susceptible to liquefaction.

The potential for liquefaction is moderate to high, however, in the northern portion of the planning area, in the vicinity of the San Andreas Fault. In this area, the fault acts as a barrier or dike to the flow of groundwater. This causes groundwater to rise along the fault and to occur at shallow depths at these locations, which are also typically boundaries between subbasins. Historically, springs and flowing wells have been observed at Willow Hole and areas just north of the planning area. During well drilling in 1981, groundwater was reported at depths of less than 30 feet northeast of Willow Hole. Given that groundwater occurs within 50 feet of the surface in this area, the unconsolidated alluvial sediments are highly susceptible to liquefaction. Shallow groundwater has also been reported along the northern side of the Banning Fault, but sediments in this area are semi-consolidated to consolidated and not as susceptible to liquefaction.

### Seismically-Induced Settlement

Strong ground shaking can cause soils to become dense or to compact, resulting in local or regional settlement of the ground surface. Settlement can damage structures and foundations, as well as pipelines, canals, and other grade-sensitive structures. The potential for seismically induced settlement to occur is controlled by the intensity and duration of ground shaking and the density of subsurface soils.

As shown in Exhibit 2.8-5, the valley floor is mainly comprised of loose, recently deposited sediments and is highly susceptible to seismically-induced settlement. Development proposed in these areas should include subsurface geotechnical investigations that evaluate the potential for seismically-induced settlement. Proper foundation design and the densification or compaction of subsurface soils prior to development can mitigate some of the damaging effects associated with settlement.

### Seismically-Induced Slope Instability

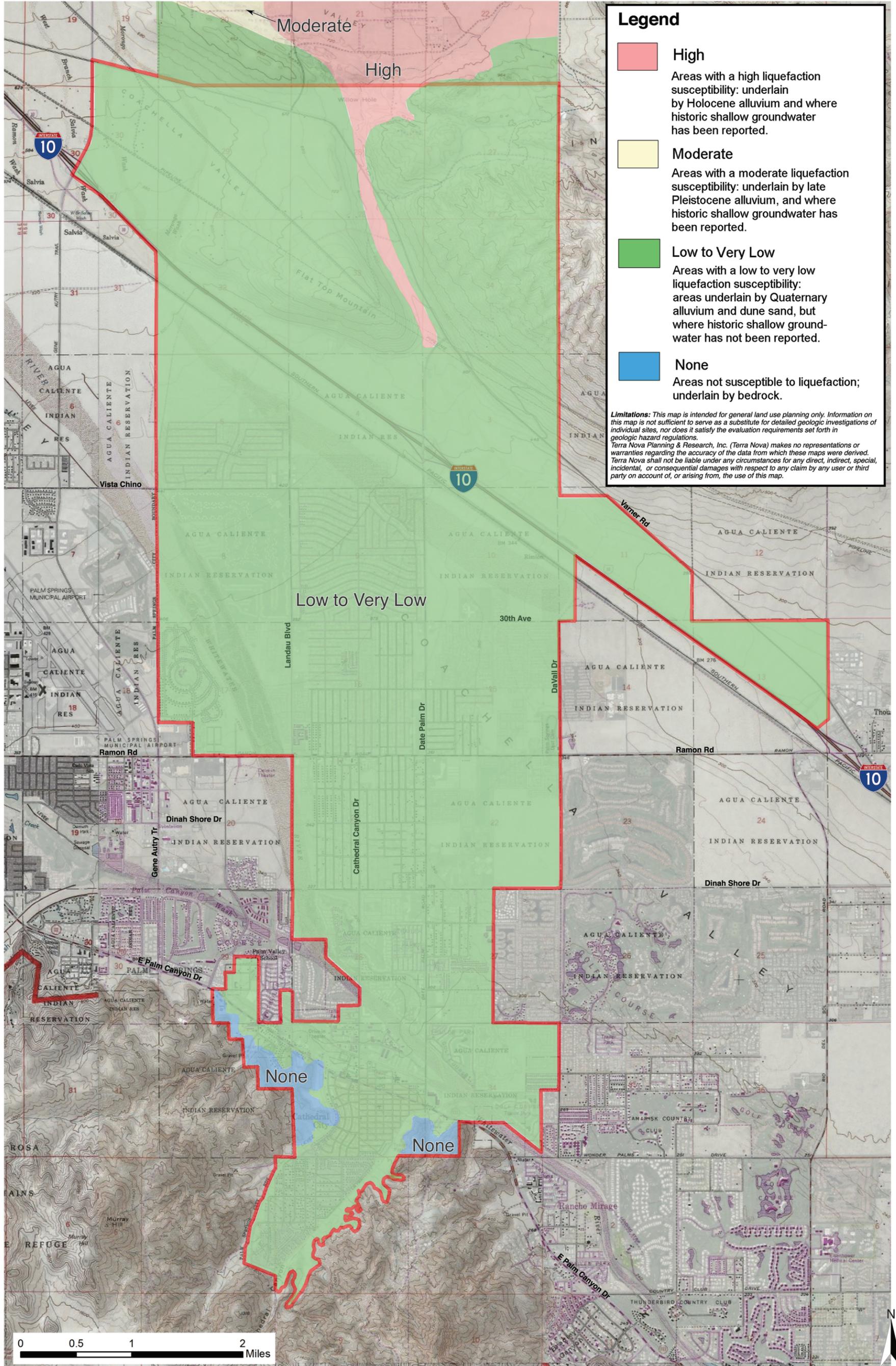
It is estimated that a ground acceleration of at least 0.10g in steep terrain is necessary to generate earthquake-induced rock falls. Given that several nearby faults are capable of generating peak ground accelerations of this magnitude in Cathedral City, there is a moderate to high potential for seismically-induced rock falls and landslides to occur in the General Plan planning area. Susceptible areas are shown on Exhibit 2.8-1 and include areas within and adjacent to the slopes of the Santa Rosa Mountains and Indio Hills, particularly where the bedrock of the Santa Rosa Mountains is highly fractured or jointed. As shown in Exhibit 2.8-1, nearly all of the areas with a moderate or high susceptibility to slope instability are currently undeveloped. The East and West Cathedral Canyon Washes act as a buffer between the slopes of the Santa Rosa Mountains and development in the Cove, and would be expected to absorb much of the potential damage from rock falls and provide some level of protection to existing habitable development.

Intense ground shattering can be expected at the top of Edom Hill and other narrow, steep ridges, where topographical features can localize and focus the ground shaking at the ridge top. Mitigation of these hazards can be best achieved by avoiding development on steep slopes and enforcing appropriate building setbacks at the base of the slopes. Even engineered cut and fill slopes constructed on the valley floor may be subject to failure if they are of sufficient height. These slopes must be designed to resist seismically-induced failure, and their design should be based on site-specific soil stability analyses that include subsurface soil sampling and laboratory testing.

### Seiches

Seiche refers to the seismically-induced oscillation or sloshing of water contained in an enclosed basin, such as a reservoir, pond, water storage tank, or swimming pool. This hazard is dependent upon the frequency of seismic waves, distance and direction from the epicenter, and design criteria of the enclosed body of water. Although damage from small bodies of water, such as swimming pools, would be expected to be minor, damage to or failure of larger bodies of water, such as water tanks and retention basins could result in the inundation of land and structures downslope, hinder efforts to suppress fires, and limit the supply of potable water after a major earthquake.

The Desert Water Agency owns four water reservoirs on elevated terrain in the Santa Rosa Mountains surrounding and near the Cathedral Canyon Cove. Damage to and/or failure of these tanks could result in inundation of homes and property in these areas of the City. Two water reservoirs owned by the Coachella Valley Water District are located on the north edge of Flat Top Mountain just south of Varner Road in the northern portion of the planning area. Although land downgradient from these tanks is currently vacant, tank damage or failure could impact future development. Design elements, such as baffles and braces, are warranted to reduce the potential for seiches in tanks, open reservoirs, and ponds where overflow or structural failure may cause damage to nearby properties. The American Water Works Association (AWWA) Standards for Design of Steel Water Tanks includes updated criteria for the seismic design of water tanks.

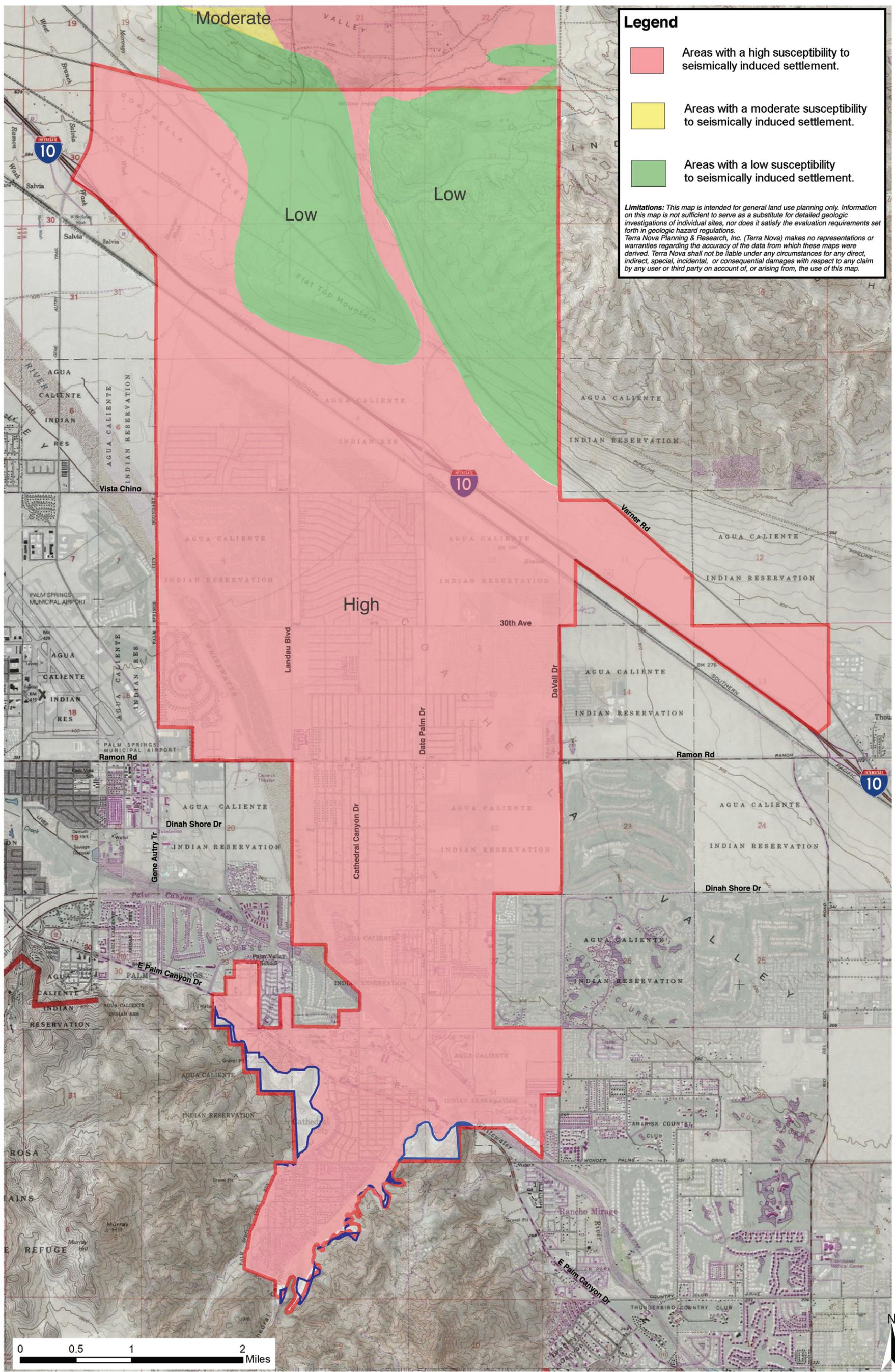


**Legend**

- High**  
Areas with a high liquefaction susceptibility: underlain by Holocene alluvium and where historic shallow groundwater has been reported.
- Moderate**  
Areas with a moderate liquefaction susceptibility: underlain by late Pleistocene alluvium, and where historic shallow groundwater has been reported.
- Low to Very Low**  
Areas with a low to very low liquefaction susceptibility: areas underlain by Quaternary alluvium and dune sand, but where historic shallow groundwater has not been reported.
- None**  
Areas not susceptible to liquefaction; underlain by bedrock.

*Limitations: This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations. Terra Nova Planning & Research, Inc. (Terra Nova) makes no representations or warranties regarding the accuracy of the data from which these maps were derived. Terra Nova shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of this map.*

06.21.18 Source: Esri, USGS, 2018; Earth Consultants International, 2001



**Legend**

- Areas with a high susceptibility to seismically induced settlement.
- Areas with a moderate susceptibility to seismically induced settlement.
- Areas with a low susceptibility to seismically induced settlement.

*Limitations: This map is intended for general land use planning only. Information on this map is not sufficient to serve as a substitute for detailed geologic investigations of individual sites, nor does it satisfy the evaluation requirements set forth in geologic hazard regulations. Terra Nova Planning & Research, Inc. (Terra Nova) makes no representations or warranties regarding the accuracy of the data from which these maps were derived. Terra Nova shall not be liable under any circumstances for any direct, indirect, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of this map.*

06.21.18 Source: Esri, USGS, 2018; Earth Consultants International, 2001

## 2.8.6 Project Impacts

Based upon Appendix G of the CEQA Guidelines, the General Plan Update would result in significant impacts to soils and/or geological resources if it would:

- 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.*

The San Andreas (Coachella Segment) Fault, running northwest-southeast through the northern portion of the planning area, has the potential for an M 7.0 and/or greater earthquake that can lead to ground rupture along its fault traces. In addition, the Garnet Fault near Edom Hill, has the potential to generate a M 7.0 earthquake and could cause ground rupture hazards to existing and planned development along its trace. An earthquake on these faults has the potential for ground rupture hazards to future development and redevelopment.

Currently, land along the San Andreas (Coachella Segment) and Garnet faults is predominantly undeveloped. However, these areas are designated as Open Space – Public/Park (OS-P), Industrial (I), Mixed Use – Neighborhood (MU-N), Business Park (BP), Public – Schools (P/S), and Public Cemetery (P/C) in the proposed General Plan Land Use Plan. Future development facilitated by the proposed General Plan update that would be located on a fault trace of the San Andreas (Coachella Segment) and Garnet faults would be exposed to potential ground rupture hazards, including cracks on the ground surface, building foundation and structural damage, roadway cracks, and pipeline breaks.

However, implementation of proposed General Plan policies and programs, as well as the Alquist-Priolo Act and the City’s existing requirement for geotechnical investigations where development is proposed in earthquake fault zones, will reduce potential hazards to less than significant levels. Policy 8 of the proposed General Plan Geotechnical Sub-Element requires geotechnical investigations for development proposed for human occupancy on lands within a City Fault Hazard Management Zone and where the location of the fault is firmly determined to locate structures away from the fault trace. Opportunities to provide adequate setbacks from the fault trace would avoid ground rupture hazards to future developments. Programs 8.A and 8.B require the City to cooperate with county, state and federal agencies in conducting geological investigations of the Garnet Hill and San Andreas faults and setting suitable setbacks along these faults in the planning area. Policies 2 and 3 of the Geotechnical Sub-Element require the structural design of structures that would be located near the faults to include appropriate seismic design criteria. Compliance with these policies and programs will prevent the construction of buildings for human occupancy across the fault trace and require setbacks from the trace, reducing ground rupture hazards to future development.

In summary, compliance with the following would reduce potential ground rupture hazards to less than significant levels: policies and programs set forth in the proposed General Plan Safety Element, the Alquist-Priolo Act, and the City’s requirements for geotechnical investigations in City-designated Earthquake Fault Zones. Impacts related to ground surface rupture would be less than significant; no mitigation is required.

### *ii) Strong seismic ground shaking?*

Intense ground shaking in the City could occur during an earthquake event on the San Andreas, Garnet, or San Jacinto Faults, or other nearby faults. Peak ground accelerations and ground shaking intensities are provided in Table 2.8-1. The San Andreas Fault is capable of generating an M 7.4 earthquake, and the San Jacinto Fault is

capable of generating an M 7.2 earthquake. Seismic ground-shaking could pose hazards to existing and future development in the General Plan planning area, including damage to building foundations, frames, walls and columns, windows, chimneys, and ceilings, as well as improvements like roads, railroads, subsurface pipes, bridges, and utility infrastructure. Larger earthquakes and those of longer duration could cause more damage, with some buildings performing more poorly than others.

However, the proposed General Plan includes policies and programs that would minimize potential damage from seismic ground shaking to less than significant levels. Policy 3 of the Geotechnical Sub-Element requires continued compliance with the Uniform Building Code/International Building Code, which would help new development and redevelopment to withstand ground shaking and avoid or reduce structural and non-structural damage. Older buildings are generally more susceptible to ground shaking due to deterioration of building materials and because they were constructed under less stringent building codes. Redevelopment of some areas, subject to the proposed General Plan Land Use Plan, would allow for older buildings to be replaced with new ones that would be built to current building codes, including more stringent seismic design standards as set forth in Policy 5 of the Geotechnical Sub-Element. Thus, beneficial impacts are expected with redevelopment under the proposed General Plan Update as vulnerable structures are demolished and new structures are built to be more resistant to ground-shaking hazards.

In addition, Policies 6 and 7 of the Geotechnical Sub-Element call for the strengthening of existing and planned critical public facilities (e.g., utilities, schools, hospitals, healthcare facilities, eldercare facilities, police and fire stations, and emergency communication facilities) to increase public safety and to minimize potential damage from seismic hazards. Implementation of these policies would reduce potential hazards from ground shaking to less than significant levels; no mitigation is required.

### ***iii) Seismic-related ground failure, including liquefaction?***

During an earthquake, liquefaction may occur in areas with loose soils and high water tables. As shown in Exhibit 2.8-4, the majority of the City has a low to no liquefaction susceptibility, principally because groundwater in the Cathedral City area typically occurs 150 to 200 feet below the ground surface, too deep to saturate the loose surface sediments of the valley floor. Although depth to groundwater may be less than 50 feet adjacent to the Santa Rosa Mountains in the southern planning area, the alluvial sediments in this area are coarse-grained sand, gravels, cobbles, and boulders that are not susceptible to liquefaction.

As previously explained, groundwater occurs within 50 feet of the surface in the northern portion of the planning area near Willow Hole, and the unconsolidated alluvial sediments are highly susceptible to liquefaction.

Future development under the proposed General Plan Land Use Plan in this area would be exposed to potential liquefaction hazards, including soil settlement, loss of bearing capacity in foundation soils, and the buoyant rise of structures, leading to structural distress or failure. Excess hydrostatic pressure may also lead to sand boils, mud spouts, and seepage of water through ground cracks.

However, the General Plan Geotechnical Sub-Element includes Policy 9 which requires geotechnical investigations for new development proposed in areas identified as being subject to geotechnical hazards, including liquefaction, to determine on-site geologic conditions and identify appropriate recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic and seismic design considerations. Compliance with Policy 9 would identify potential liquefaction hazards on individual development sites and site-specific mitigation measures, if any, that would be necessary to minimize potential liquefaction hazards. Impacts associated with liquefaction would be less than significant; no mitigation is required.

***iv) Landslides?***

As shown in Exhibit 2.8-1, the slopes of the Indio Hills and Santa Rosa Mountains are susceptible to seismically-induced rock fall and landslides. Land in the Indio Hills is generally undeveloped; however, the proposed General Plan Land Use Plan would allow the following urban land uses: Open Space – Public/Park (OS-P), Industrial (I), Hillside Reserve, and Public-Schools (P/S). Future development in this area would disturb existing soils and slopes and increase the number of structures and people exposed to potential slope instability hazards. Policy 9 of the General Plan Geotechnical Sub-Element requires project-specific geotechnical investigations where development is proposed in areas identified as being subject to geotechnical hazards, including slope instability, to identify potential hazards and appropriate site-specific mitigation measures, as necessary, to minimize potential hazards. Policy 12 of the Geotechnical Sub-Element restricts development along the foothills to minimize the potential impacts of slope failure. In addition, it requires minimized grading and modification to the natural topography in these areas to prevent the potential for development-induced slope failures. With implementation of Policies 9 and 12, impacts would be less than significant.

Potential slope instability hazards also exist along the slopes of the Santa Rosa Mountains in the southern portion of the planning area. Downslope land includes vacant open space, the East and West Cathedral Canyon stormwater channels, and existing residential development in the Cove neighborhood. The stormwater channels could absorb much of the potential damage from landslides and rockfalls, thereby protecting habitable structures within the Cove. The proposed General Plan Land Use Plan preserves the Santa Rosa Mountain slopes as Open Space–Private and Open Space–Other, and preserves the East and West Cathedral Canyon channels as Open Space–Water. It does not propose new development or other improvements that would alter the existing slopes or development in the area. In this area, the General Plan would have less than significant impacts on hazards associated with slope instability. Impacts associated with landslides would be less than significant; no mitigation is required.

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

The majority of the City consists of Carsitas cobbly sand (ChC), Myoma fine sand (MaB), and Carsitas gravelly sand (CdC), which have low to medium susceptibility to soil erosion.<sup>14</sup> However, much of the planning area is highly susceptible to wind hazards that contribute to soil erosion and the generation of fugitive dust. These contribute to the soiling of exterior furniture and vehicles, nuisances and increased health risks to people, loose soils on roadways and driveways, reduction in visibility for drivers, and loss of topsoil.

The proposed General Plan update would facilitate new development in the planning area. Grading and excavation activities for construction may lead to localized erosion, as wind and water carry loose soils off site. In general, erosion would likely occur in an easterly and northeasterly direction, consistent with the general local topography and prevailing winds. Implementation of erosion-control measures required by Policy 10 of the Geotechnical Sub-Element would avoid and minimize soil erosion and the loss of topsoil.

Policies 2 and 8 of the Air Quality and Climate Stability Element seeks to minimize blowsand and nuisance dust associated with wind and soil erosion hazards. Dust control measures required by the City, CVAG, and SCAQMD include pre-watering, prompt revegetation, and use of soil binders, which would reduce impacts associated with soil blowing and wind erosion during construction activities (Policy 10 - Geotechnical Sub-Element). Compliance with these erosion-control regulations would reduce soil erosion from future development and redevelopment.

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<sup>14</sup> Soil Survey of Riverside County, California, Coachella Valley Area, U.S. Department of Agriculture Soil Conservation Service, September 1980.

In addition, future development and redevelopment projects would be required to implement erosion control Best Management Practices (BMPs) outlined in the Storm Water Pollution Prevention Plan (SWPPP) that would be developed and implemented as part of construction activities on sites greater than one acre, in compliance with the National Pollutant Discharge Elimination System (NPDES). This is further discussed in Section 2.10: Hydrology and Water Quality, of this DEIR.

As the General Plan planning area builds out, new pavement, roads, buildings, and landscaping can be expected to help stabilize soils and reduce soil erosion from both wind and water.

In summary, the proposed General Plan Update includes numerous policies that seek to minimize and avoid hazards associated with soil erosion. Implementation of these policies will reduce potential impacts related to erosion to less than significant levels; no mitigation is required.

***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?***

As discussed under response ***a.iv***, above, the majority of the planning area does not include any areas identified as being susceptible to landslides, and the overall risk of landslides is low. Rockfall and landslide areas have been identified along the foothills of the Santa Rosa Mountains and Indio Hills which are designated as Open Space – Other (OP-O) and Open Space – Public/Park (OS-P) in the proposed General Plan Land Use Map to reduce potential impacts. The General Plan Geotechnical Sub-Element also includes Policies 9 and 12 that will reduce potential impacts to less than significant levels.

Subsidence typically occur where groundwater or natural gas is extracted. There have been no documented incidents of subsidence in the City. In the Coachella Valley, land surface subsidence has been documented in Palm Desert, Indian Wells, and La Quinta, mainly due to excessive groundwater pumping.<sup>15</sup> The potential for groundwater extraction-related ground subsidence in the area is considered to be limited due to reduction in pumping in these areas and replenishment of regional groundwater aquifers with imported water. Policy 11 of the General Plan Geotechnical Sub-Element requires the City to actively support and participate in local and regional efforts at groundwater conservation and recharge to minimize the potential impacts of subsidence due to the extraction of groundwater. With implementation of Policy 11, impacts would be less than significant.

As discussed under response ***a.iii*** above, a small portion of the planning area in the northern portion of the City, near Willow Hole, has a high susceptibility to liquefaction. However, the General Plan Geotechnical Sub-Element includes Policy 9 which requires geotechnical investigations for new development proposed in areas identified as being subject to geotechnical hazards, including liquefaction, to determine on-site geologic conditions and identify appropriate recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic and seismic design considerations. Compliance with Policy 9 would identify potential liquefaction hazards on individual development sites and site-specific mitigation measures, if any, that would be necessary to minimize potential liquefaction hazards. Impacts associated with liquefaction would be less than significant; no mitigation is required.

Overall, the planning area is located in an area with geotechnical hazards such as landslides, subsidence, and liquefaction. However, policies are incorporated in the General Plan to minimize the potential impacts to less than significant levels.

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<sup>15</sup> Land Subsidence, Groundwater Levels, and Geology in the Coachella Valley, California, 1993–2010 by Michelle Sneed, Justin T. Brandt, and Mike Solt, 2014.

***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?***

Expansive soils increase in volume with an increase in moisture content. These soils swell when water is added to them and shrink when they dry out. Foundations built on expansive soils can heave and can cause lifting and even structural damage when the moisture content rises. This can ultimately lead to the failure of foundations and structures.

According to USDA's Soil Survey of the City, the soils in the planning area have a low shrink-swell potential.<sup>16</sup> The older fan deposits of the Indio Hills may contain clay-rich soils near the surface; however, these units are typically removed and recompacted during grading. Mixing of soils during this process is expected to reduce their expansion potential.

The proposed General Plan update will facilitate new development in the planning area. Site-specific geotechnical investigations will be required for every development identified as being subject to geotechnical hazards (Policy 9 of the Geotechnical Sub-Element). That policy requires the City to impose the preparation of site-specific geotechnical investigations by the applicant prior to completion of CEQA studies and development approval. Furthermore, all such studies shall include mitigation measures that reduce associated hazards to insignificant levels. The geotechnical investigations would identify structural design criteria and construction recommendations to ensure the stability and integrity of structures and infrastructure that would be built, including the potential for soil expansion and the soil expansion index that needs to be used in the engineering design. Compliance with the City's building regulations for the preparation of geotechnical investigations and compliance with appropriate construction standards for individual projects would ensure that impacts related to expansive soils would be less than significant. Impacts of the proposed General Plan update on hazards associated with expansive soils would be less than significant; no mitigation is required.

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

The city passed Ordinance 572 in 2000 to prohibit issuance of permits for new septic tank installation within the city. All new and existing buildings and structures with plumbing facilities were required to be connected to an available public sewer system. The ordinance included provisions to fine people that did not connect to the sewer system. Additionally, Ordinance 626 (2006) states that, where developers install sewer improvements that subsequently benefit other properties located between the sewer improvements and the point of connection to an existing main, they shall be eligible to enter into a reimbursement agreement with the city.

The proposed General Plan would not violate or alter City ordinances pertaining to sewer system connections. The proposed General Plan update would facilitate new development in the planning area. Where existing sewer lines are available, development would connect to the public sewer system (Policy 5 - Water Resources Element). Where no sewer lines are present, the public sewer system would need to be expanded to serve development. Soils in the City and surrounding areas are capable of supporting existing and future wastewater collection systems operated by the Coachella Valley Water District (CVWD) and Desert Water Agency (DWA). Overall, impacts will be less than significant, and no mitigation is required.

***f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

The City is not known to contain unique paleontological or geologic features. The majority of City soils are composed of recently deposited alluvium which has a low potential to contain paleontological resources. The planning area is largely developed south of I-10, and the urban landscape is a mix of residential, commercial,

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<sup>16</sup> Soil Survey of Riverside County, California, Coachella Valley Area, U.S. Department of Agriculture Soil Conservation Service, September 1980.

industrial, and other development, as well as roadways, utilities, and other infrastructure. Any paleontological or geologic sites or resources would likely have been disturbed already by urban development. Land north of I-10 is generally undeveloped and could harbor unknown resources.

The proposed General Plan Land Use Plan would allow for development and redevelopment in the planning area that could result in direct and/or indirect impacts to paleontological and geologic resources. Ground-disturbing activities could have the potential to damage or destroy paleontological resources that may be present below the ground surface. Any future projects that would be allowed under the General Plan Update would be subject to CEQA analysis on a project-by-project basis to identify potential impacts and establish appropriate mitigation measures, as needed. Overall, impacts will be less than significant, and no mitigation is required.

### **2.8.7 Mitigation Measures**

The following mitigation measures will serve to avoid, minimize and mitigate potential impacts to City lands, buildings and other structures and human lives from the geotechnical hazards identified in this EIR. They are not meant to be all-inclusive and new or revised local and state requirements may also apply.

- GEO-1 The City shall establish and maintain an information database containing maps and other information which describe seismic and other geotechnical hazards occurring within the planning area.
- GEO-2 The City shall actively promote public education, research, and information dissemination on seismic and geotechnical hazards.
- GEO-3 New development in the planning area shall be constructed in accordance with the prevailing seismic design requirements contained in the most recently adopted edition of the Uniform Building Code/International Building Code and as otherwise required by the City.
- GEO-4 The City shall continue to incorporate seismic risk analysis into the City's on-going building inspection program.
- GEO-5 On sites where threats from seismic hazards cannot be adequately mitigated through the application of existing regulatory requirements and Updated General Plan policies and implementation programs, the City shall use open space easements and/or other related regulatory measures to limit development and thus avoid public safety hazards.
- GEO-6 Proposals for development on wind or stream-deposited sediment on the valley floor shall include site-specific subsurface geotechnical investigations that address settlement, liquefaction, and collapsible soils. These hazards can generally be mitigated by proper excavation, compaction and foundation design.
- GEO-7 The City shall continue to require expansive soils testing as part of its grading and building codes, and shall assure the implementation of mitigation measures which minimize these hazards, such as the use of reinforcing steel in foundations, drainage control devices, overexcavation and backfilling with non-expansive soils.
- GEO-8 The City shall continue to support and encourage local and regional groundwater conservation measures in an effort to mitigate potential subsidence resulting from groundwater overdraft. (see also Water Resources discussion in Section 2.10: Hydrology and Flooding).

- GEO-9 All grading permit requests shall include a PM<sub>10</sub> Management Plan in conformance with the latest approved Coachella Valley PM<sub>10</sub> requirements in place at the time construction occurs. Blowing dust and sand during grading operations shall be mitigated by adequate watering of soils prior to and during grading, and limiting the area of dry, exposed soils during grading (see also Air Quality discussion in Section 2.4).
- GEO-10 Where development is proposed adjacent to or in close proximity to steep slopes, site-specific geotechnical studies shall be conducted to evaluate the potential for rock falls and/or slope failure, and to establish mitigation measures which minimize these hazards.
- GEO-11 All development proposed within Alquist-Priolo Earthquake Zones and City-designated study zones shall comply with State requirements for site-specific study, including trenching to locate fault traces, and to submit this analysis prior to any development approval for the property.
- GEO-12 During site grading, all existing vegetation and debris shall be removed from areas that are to receive compacted fill. Any trees to be removed shall have a minimum of 95% of the root systems extracted or as prescribed by the project soils engineer. Man-made objects shall be overexcavated and exported from the site. Removal of unsuitable materials may require excavation to depths ranging from 2 to 4 feet or more below the existing site grade.
- GEO-13 All fill soil, whether on site or imported, shall be approved by the individual project soils engineer prior to placement as compaction fill. All fill soil should be free from vegetation, organic material, cobbles and boulders greater than 6 inches in diameter, and other debris. Approved soil shall be placed in horizontal lifts of appropriate thickness, as prescribed by the soils engineer, and watered or aerated as necessary to obtain near-optimum moisture content.
- GEO-14 Fill materials shall be completely and uniformly compacted to not less than 90% of the laboratory maximum density as determined by ASTM test method D-1557-78. The project soils engineer shall observe the placement of fill and take sufficient tests to verify the moisture content, uniformity, and degree of compaction obtained. In-place soil density should be determined by the sand-cone method, in accordance with ASTM Test Method D-1556-64 (74), or equivalent test method recommended by the soils engineer and as acceptable to the City Building and Safety Department.
- GEO-15 Finish cut slopes generally shall not be inclined steeper than 2:1 (horizontal to vertical). Attempts to excavate near-vertical temporary cuts for retaining walls or utility installations in excess of 5 feet may result in gross failure of the cut and may possibly damage equipment and injure workers. All cut slopes must be inspected during grading to provide additional recommendations for safe construction.
- GEO-16 Finish fill slopes shall not be inclined steeper than 2:1 (horizontal to vertical) or as approved by the project geotechnical engineer. Fill slope surfaces should be compacted to 90% of the laboratory maximum density by either over-filling and cutting back to expose a compacted core or by approved mechanical methods.
- GEO-17 Foundation systems that utilize continuous and spread footings are recommended by the project soils engineer for the support of one and two-story structures. Foundations for higher structures must be evaluated based on structure design and on-site soil conditions.
- GEO-18 Positive site drainage shall be established during finish grading. Finish lot grading shall include a minimum positive gradient of 2% away from structures for a minimum distance of three (3) feet and a minimum gradient of 1% to the street or other approved drainage course.

- GEO-19 An adequate subdrain system shall be constructed behind and at the base of all retaining walls to allow for adequate drainage and to prevent excessive hydrostatic pressure.
- GEO-20 Utility trench excavations in slope areas or within the zone of influence of structures should be properly backfilled in accordance with the following recommendations:
- a) Pipes shall be bedded with a minimum of 6 inches of pea gravel or approved granular soil. Similar material shall be used to provide a cover of at least 1 foot over the pipe. This backfill shall then be uniformly compacted by mechanical means or jetted to a firm and unyielding condition.
  - b) Remaining backfill may be fine-grained soil. It shall be placed in lifts not exceeding 6 inches in thickness or as determined appropriate, watered or aerated to near optimum moisture content, and mechanically compacted to a minimum of 90% of the laboratory maximum density.
  - c) Pipes in trenches within 5 feet of the top of slopes or on the face of slopes shall be bedded and backfilled with pea gravel or approved granular soils as described above. The remainder of the trench backfill shall comprise typical on-site fill soil mechanically compacted as described in the previous paragraph.

### **2.8.8 Significance After Mitigation**

The proposed General Plan Update would not result in any significant impacts to or significant unmitigated impacts from geology and soil conditions.

### **2.8.9 Cumulative Impacts**

Future development and redevelopment pursuant to the proposed 2040 General Plan Update would involve grading and excavation activities on individual sites, which would result in changes to the area's existing geology and soils conditions. Development sites that are relatively flat would remain flat, while hillside development would require cut and fill, manufactured slopes, and changes to the natural topography. Compliance with the CBC and the recommendations of individual geotechnical investigations would reduce geologic hazards to new development.

Earthquake faults in the planning area pose surface rupture hazards to developments proposed over the fault traces. However, compliance with the Alquist-Priolo Act would minimize surface rupture hazards to new development and redevelopment in the planning area.

Ground shaking hazards due to regional earthquake events could lead to the damage of buildings, parking lots, and utility lines, and resulting fires, falling objects, and other structural hazards, which could cause property damage and personal injuries. Ground-shaking hazards are not unlike the potential hazards in other areas of the region. Depending on the magnitude of the earthquake, distance to the development site, underlying soil conditions, and strength of structures and infrastructure, ground-shaking hazards may be significant.

Future development and redevelopment in the planning area would be designed and built in accordance with applicable standards in the CBC, including pertinent seismic design criteria. Existing buildings would be rehabilitated in accordance with the CBC and local building regulations. This will allow structures to withstand ground shaking and to maintain hazards at acceptable levels.

Site-specific geologic hazards would be addressed by geotechnical investigations required by individual cities and the County for each development proposal. Investigations would identify the geologic and seismic characteristics of a site and provide guidelines for engineering design and construction to ensure the structural integrity of the

proposed development. Compliance of individual projects with the recommendations of the geotechnical investigation would prevent potential hazards associated with unstable soils, landslides, lateral spreading, liquefaction, soil collapse, expansive soil, soil erosion, and other geologic issues. No cumulative adverse impacts are expected.

Future development and redevelopment would be required to connect to a public sewer system. Compliance with the ordinances (Ord. 572 § 1, 2000 and Ord. 626 § 1, 2006) would prevent future use of septic tanks in the City and assure continued protection and high quality of local and regional water sources.

Impacts of the proposed General Plan update on or resulting from geology and soil conditions are not expected to be cumulatively significant, with compliance with geotechnical and engineering practices related to seismic and geologic hazard reduction, structural integrity, and soil management.