# Open Space and Conservation Element

## PURPOSE

The purpose of the Open Space and Conservation Element is to identify and assess open space lands and other natural resources that benefit the community, and to provide guidance for their comprehensive and long-term management and preservation. Among these are water resources, wildlife habitat, minerals and energy resources, archaeological and cultural resources, and scenic resources.

Conservation of natural resources and the provision and preservation of open space lands are important and necessary to maintaining a healthy community. As urban growth continues in the City, it becomes increasingly important to balance development and conservation. One of the principal objectives of the General Plan is to preserve and enhance the community, and to ensure that long-term growth within the City does not adversely affect environmental resources. The policies and programs set forth in this Element are intended to help assure the preservation and long-term viability of valuable natural resources and prevent the premature and/or unnecessary conversion of open space land to urban uses. The Open Space and Conservation Element represents the City's commitment to environmental quality as a key component to land use planning.

## BACKGROUND

Government Code Section 65302(d) requires that General Plans include elements which address the conservation, development, and utilization of natural resources, including water and its hydraulic force, forests, soils, rivers and other waters, harbors and fisheries, wildlife, minerals, and other natural resources. In this General Plan, hydrology is addressed in the Flooding and Hydrology Element, and soils are addressed in the Geotechnical Element.


Government Code 65560(b) defines “open-space land” as any parcel or area of land or water which is essentially unimproved and devoted to an open space use. They may provide value related to outdoor recreational uses, production of resources, biodiversity, health, economy, tribal resources, or other purposes.

Government Code Section 65566, also known as the Open Space Lands Act, requires that local governments prepare open space plans before adopting required open space related ordinances. The Act helps assure consistency between the open space plan and zoning regulations.

Government Code Section 65561(a) states that the preservation of open space land is necessary not only for the maintenance of the economy of the state, but also for the assurance of the continued availability of land for the production of food and fiber, the enjoyment of scenic beauty, and for recreation and use of natural resources. It also states that discouraging premature and unnecessary conversion of open-space land to urban uses is a matter of public interest, and cities should make plans for the preservation of open space resources.

The Open Space and Conservation Element informs and guides the policies of the Land Use Element by identifying important resource areas, assessing the need for their preservation, and balancing future development with environmental preservation. It is also closely related to the Parks and Recreation Element, Hydrology, and Geotechnical Elements that describe important open space resources in the planning area.

## FORMAT OF THIS ELEMENT

The Open Space and Conservation Element addresses the importance and need for preservation of a full range of open-space lands and other natural resources in the City. Its goals, policies, and programs are intentionally broad to address open space in over-arching terms. Focused analysis and policy direction for specific types of open space is provided in four (4) sub-Elements:

- Biological Resources Sub-Element
- Cultural Resources Sub-Element
- Water Resources Sub-Element
- Energy and Mineral Resources Sub-Element

## NATURAL RESOURCES IN THE COACHELLA VALLEY

Cathedral City is part of a larger desert environment that has been shaped over time by seismic, fluvial, aeolian, and other natural processes, resulting in geologic features like sand dunes, alluvial fans, and fan palm oases, and providing habitat for biological species that are specially adapted to the harsh climate. The region is characterized by extreme elevation variations and a unique arrangement of a low-lying desert floor surrounded by steep, rocky slopes that rise more than 11,000 above sea level. The terrain is visually dramatic, and scenic views are a highly valued community asset. The natural landscape and expansive viewsheds are an important part of the region's identity as a resort destination and an integral part of the economy that is largely based on tourism and outdoor recreation.

The regional population has grown steadily since the 1980s, and land has been increasingly impacted directly and indirectly by urban development and human influences, such as the conversion of open space to urban uses, human encroachment into and disturbance of sensitive habitat areas, and alteration of ecological processes, like shifting sands, from intervening buildings, roads, and other infrastructure. These and other urban-related impacts can be expected to continue as the community grows. Numerous policies, programs, and other safeguards have been implemented by the City, neighboring jurisdictions, and public agencies and partnerships to seek a balance between urban growth and conservation of valuable resources. The City must continue to identify and assess potential threats to these resources, particularly those that are finite and nonrenewable, and those that are critical to community health such as water, and develop appropriate measures to protect them. Although resource conservation is traditionally concerned with natural resources, it is also important for the City to assess the man-made cultural and historic resources it wishes to preserve for future residents.

### Biological Resources

The Coachella Valley's unique desert climate and topographical features create an environment that supports a wide variety of wildlife species, habitats, and natural communities. The Sonoran Desert Creosote natural community generally dominates the valley floor and most of the planning area. It consists of shifting windblown sand, sand fields, and dunes with sparse vegetation and a number of uniquely adapted and special-status wildlife species. Other plant communities and wildlife habitats include Desert Fan Palm Oases, which are found in canyons and other places with naturally occurring water, alluvial plain habitats, and desert dry wash habitats. Hillside habitat is found in areas of transition where the arid valley floor gives way to desert mountains with dense shrubbery and trees.

Within these areas are a variety of sensitive plant and animal species, some of which have been listed as threatened or endangered by federal and state governments. Among these are the Peninsular bighorn sheep, Coachella Valley fringe-toed lizard, desert slender salamander, desert tortoise, California ditaxis, and Coachella Valley milk vetch. The area also supports more common species, such as the chuckwalla, zebra-tailed lizard, Golden eagle, Peregrine falcon, Western burrowing owl, coyote, and Palm Springs ground squirrel. Descriptions and analysis of biological resources in the City are provided in the Biological Resources Element and EIR.

### Cultural Resources

The Coachella Valley contains abundant archaeological evidence of local prehistoric and historic human populations. Cultural resources found within the region include prehistoric and historic resources, such as Cahuilla village sites, trails, shrines, gathering areas, sacred sites, springs, as well as historic structures, historic roads, and other historic sites. The Cahuilla are the longest occupants of the Coachella Valley and have lived in the valley for at least 6,000 years.

Several known Cahuilla villages and resource sites are located in the Coachella Valley. These include milling sites and quarries for making tools, sacred sites and rock art sites. The Cahuilla established a number of villages in the region, many of which were near the mountains and canyons and around ancient Lake Cahuilla. Today, the Cahuilla continue to live in the Coachella Valley. Portions of the reservation of the Agua Caliente Band of Cahuilla Indians are located within Cathedral City. Descriptions of archaeological and historic resources in the City, and the need for their conservation, are provided in the Cultural Resources Element.

### Water Resources

The majority of water resources in the region come from naturally occurring groundwater reserves. The Valley is underlain by groundwater basins that are divided into distinct subbasins and subareas within subbasins. The Whitewater River subbasin serves as the primary groundwater repository for Cathedral City. The subbasin encompasses a major portion of the valley floor, covering approximately 400 square miles. It is divided into four subareas: Palm Springs, Thermal, Thousand Palms and Oasis.

The Palm Springs subarea of the Whitewater River subbasin serves the planning area and is naturally recharged by infiltration of runoff from the San Jacinto and Santa Rosa Mountains, the Whitewater River, and subsurface inflows from the San Gorgonio Pass subbasin. The groundwater storage capacity of the subbasin is estimated at 4,600,000 acre-feet. The quality of water extracted from the regional water basins is generally good to excellent. However, groundwater levels in the region have declined steadily due to increasing urbanization in recent decades. As an essential resource, water needs to be conserved and used efficiently. The City's water resources, current conservation efforts, and future policy directions are described in the Water Resources Element.

### Energy and Mineral Resources

Energy resources are an essential part of urban life, especially transportation and industrial processes. Currently, the majority of energy consumed in Cathedral City is derived from nonrenewable resources, although renewable sources are incrementally providing an increasing share of the community's energy needs. In addition, most community energy sources are not produced locally.

Energy conservation has become a major theme to energy usage in California. The basic concepts of energy conservation include using energy resources more efficiently through improved technology, the effective use of building design standards, reducing unnecessary use and dependence on nonrenewable sources, and conserving energy-related resources. Development of renewable and alternative energy sources is also a key component of energy conservation.

Not only are renewable resources environmentally benign, they can be produced on a local or regional scale, and therefore, can be more dependable and efficient. Solar power and wind power are two significant renewable energy resources that are increasingly being utilized in the Coachella Valley. The further development and use of these renewable energy resources, in conjunction with energy conservation measures, will help the City continue to meet its future energy demands. Local energy and mineral resources and conservation strategies are described in detail in the Energy and Mineral Resources Element.

## OPEN SPACE CATEGORIES

Open space lands serve a number of valuable functions for an urban community. Incorporation of open space within a land use plan offers relief from and contrast to high-density development, offering an attractive setting for urban activities, and contributing to a community's quality of life. Open space can be utilized to establish edges or boundaries to a community or neighborhood, serve as a buffer between incompatible land uses, or provide opportunities for recreational activities. Protection of sufficient open space land promotes environmental quality by safeguarding valuable resources and maintaining the integrity of natural systems. Access to open space areas, and preserving scenic landscapes, critical habitat, ecologically valuable land, and recreational areas are critical components of livable communities and healthy economies.

Government Code Section 65560(b) recognizes six broad categories of open-space land, as described below.

1. *Open Space for the Preservation of Natural Resources*
   Open space for the preservation of natural resources refers to areas required for the preservation of plant and animal species and habitat, as well as areas required for ecologic and other scientific purposes, such as rivers, lakeshores, and watersheds. Habitat conservation in the Coachella Valley has become increasingly important due to the number of sensitive species and prevalence of unique biological habitats in the region. Numerous areas within the Coachella Valley are dedicated to the preservation and protection of plant and wildlife species and habitat.

2. *Open Space for the Managed Production of Resources*
   Open space for the management of natural resources refers to those lands that are managed for the production of resources, such as agricultural lands and forests, areas containing major mineral deposits, areas of economic importance for the production of food or fiber, and areas required for recharging groundwater or for water storage. In the planning area, this open space designation includes the utility corridor north of Interstate-10, areas within the Indio Hills that are suitable for the generation of wind energy, as well as significant drainage areas that help to replenish the groundwater reservoir.

3. *Open Space for Outdoor Recreation*
   Open space for outdoor recreation includes areas of outstanding scenic, historic, and cultural value, areas suitable for park and recreational purposes, and areas that serve as links between major recreation and open space reservations, including utility easements, river banks, trails, and scenic highways corridors.

   Golf courses represent an important source of recreation in the Coachella Valley, and are also central to the region's economy. Public and private golf courses comprise a substantial portion of open space lands in the City and surrounding areas. Parklands are another important source of open space for recreation; City parks are described in the Parks and Recreation Element. In addition to the active recreational opportunities that the City's parks provide, there are also numerous trails and facilities throughout the Valley that support passive recreation on a regional scale, such as Joshua Tree National Park, the Living Desert, and the numerous mountain trails through the San Jacinto and Santa Rosa Mountains.

4. *Open Space for Public Health and Safety*
   Open space for public health and safety refers to those lands that require special management or regulation because of hazardous or special conditions, such as earthquake fault zones, floodplains, unstable soil areas, and high fire areas. Although these lands remain undeveloped due to hazardous conditions, they may have potential for open space uses. Flood control facilities may be usable for wildlife habitat and recreational purposes. Land located along fault lines can remain in its natural condition as a wildlife corridor.

In the planning area and immediate vicinity, this category of Open Space is associated with the flood control facilities for the Whitewater River and other drainages, areas within the Indio Hills that are in close proximity to the San Andreas Fault, and the former Edom Hill Landfill site. While these areas are unsuitable for development, they do provide viable open space lands.

5. *Open Space in Support of the Mission of Military Installations*
   This category includes areas adjacent to military installations, military training routes, and underlying restricted airspace that can provide additional buffer zones to military activities. There are no such open spaces in Cathedral City.

6. *Open Space for Tribal Resources*
   This category includes open spaces for the protection of places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code. They include Native American sanctified cemeteries, places of worship, religious or ceremonial sites, and sacred shrines; and Native American historic, cultural, and sacred sites that are listed or may be eligible for listing in the California Register of Historic Resources pursuant to Section 5024.1.

## GENERAL PLAN DESIGNATED OPEN SPACE

The General Plan provides for approximately 3,912 acres of open space lands, or 26.9% of the total planning area, as shown on the General Plan Land Use Map (Exhibit LU-1). It includes four Open Space land use categories: Open Space-Private, Open Space-Public, Open Space-Watercourse, and Open Space-Other. The acreages of each are shown in the following table.

**Table OS-1**
**Open Space Acreage**

| Land Use Designation | Acres | % of Total Open Space | % of Total Planning Area |
|---|---|---|---|
| Open Space-Public | 2489.97 | 64.22% | 18.17% |
| Open Space-Watercourse | 828.27 | 21.36% | 6.37% |
| Open Space-Other | 558.82 | 14.41% | 4.26% |
| **TOTAL:** | 3877.07 | 100% | 26.90% |

Open Space-Private generally refers to private golf courses, which constitute about 27% of open space land in the planning area. Open Space-Public makes up approximately 62.15% of open space land and refers to public parks and undeveloped public lands. Open Space-Watercourse makes up the second largest portion of open space, representing 22.19% of open space land. This designation includes the Whitewater River and portions of the Cathedral Canyon channel. Open Space-Other represents the utility corridor for high-voltage transmission lines within the northern portion of the City and accounts for approximately 13.16% of the open space within the planning area.

Table OS-2 provides an open space inventory and identifies the General Plan Elements in which each area is described.

**Table OS-2**
**Open Space Inventory**

| Resource Name | General Plan Element |
|---|---|
| Open Space for Natural Resources: | |
| MSHCP Whitewater Floodplain Conservation Area | Biological Resources |
| MSHCP SJSRM Conservation Area | Biological Resources |
| MSHCP Willow Hole Conservation Area | Biological Resources |
| MSHCP Edom Hill Conservation Area | Biological Resources |
| Open Space for Managed Production of Resources: | |
| Electricity Utility Corridor | Water, Sewer, and Utilities Element |
| Open Space for Outdoor Recreation: | |
| City Parks | Parks and Recreation Element |
| Golf Courses | Parks and Recreation Element |
| Open Space for Public Health and Safety: | |
| Whitewater River Stormwater Channel | Flooding and Hydrology, Water Resources |
| East & West Cathedral Canyon Channels | Flooding and Hydrology |
| Open Space for Military Support: | |
| None | n/a |
| Open Space for Tribal Resources: | |
| None | n/a |

## CONSERVATION LAND ACQUISITION

To facilitate the continued preservation of open space in California, a number of conservation programs and legislative measures have been enacted, including the following.

### The Conservation Easement Act

The Conservation Easement Act (Civil Code Sections 815-816) was established to encourage the dedication of open space lands for ongoing conservation. A conservation easement is a voluntary agreement that allows a landowner to limit the type or amount of development on their property, while retaining private ownership of the land. The easement is binding to successive owners of the land. The purpose of a conservation easement is to retain land predominantly in its natural, scenic, historical, agricultural, forested, or open space condition. By granting conservation easements, a landowner can assure that the property will be protected forever, regardless of who owns it in the future.

### Open Space Easement Act

The Open Space Easement Act of 1974 (Government Code Sections 51070-51097) provides another mechanism for preserving open space land. It gives local governments the authority to accept easements granted to them or non-profit organizations for the purpose of conserving open space and agricultural lands.

### The Scenic Easement Deed Act

The Scenic Easement Deed Act (Government Code Sections 6950-6954) authorizes local governments to purchase fee or scenic easements, but there is no special mechanism for obtaining them. Land uses are regulated by the Act, and local governments are authorized to adopt an ordinance which establishes open space covenants with property owners.

### Public Land Trusts

A public land conservation trust is another mechanism devoted to protecting open space, agricultural lands, wildlife habitats, and natural resource lands. Land trusts achieve their objectives primarily through acquiring and managing interests in land.

Land conservation trusts can help preserve open space and resource lands in a variety of ways. Trusts funds can be used to acquire fee simple interest in real estate to then manage or lease back holdings, or to purchase conservation easements that protect sensitive land from development. Since they are less restrained by formalities and regulations, private land trusts are usually able to respond more quickly than governmental entities to purchasing opportunities. They also have more experience helping public agencies with the technicalities of acquisition.

A public land trust helps preserve environmentally sensitive open space and conservation lands, pursue State and Federal financing with grants and loans, and other assistance methods for the preservation of open space. Several land trusts exist in the Coachella Valley, including the Coachella Valley Mountains Conservancy, Nature Conservancy, Living Desert, Wildlands Conservancy, Center for Natural Lands Management, and Friends of the Desert Mountains.

## FUNDING MECHANISMS

Viable funding mechanisms are essential to financing the acquisition and management of open space lands. They may include State obligation bonds, grants, and tax increment financing. The State Legislature has helped organizations create grant and loan programs that can aid open space financing. These are available on a competitive basis for specific projects and include:

- Land and Water Conservation Fund/California Department of Parks and Recreation
- Habitat Conservation Program/ California Department of Parks and Recreation
- Simms Trail Bill/ Department of Parks and Recreation
- Public Access Program/ California Department of Fish and Wildlife
- California Wildlife Conservation Board Program/Department of Fish and Wildlife
- Urban Forestry Program/California Department of Forestry

## FUTURE DIRECTIONS

The City of Cathedral City and its surrounding area are located within a unique desert environment with a variety of valuable natural resources and open space lands. The City should continually pursue the safeguarding and protection of these resources in planning and decision-making actions. Implementation of the General Plan, Zoning Ordinance, CEQA, and other regulatory mechanisms will help promote conservation and ensure that development will not interfere with or interrupt open space and conservation efforts in the future.

The City should continue to work with CVAG and surrounding cities to expand the existing network of open space and conservation lands within the valley. Regional coordination and continued participation in the Multiple Species Habitat Conservation Plan, CV Link and other regional plans and programs will be essential in helping to secure a regional system of conservation lands for long-term preservation and enjoyment.

## GOALS, POLICIES, AND PROGRAMS

**Goal 1:** Preservation, conservation, and effective management of open space which provides for the protection of important natural resources, including sensitive plant and animal species and habitats, and water, cultural, energy and mineral, recreational, and scenic resources.

> **Policy 1**: Identify and assess lands in the City and its sphere-of-influence that are suitable for preservation as public or private, passive or active open space.
>
> > **Program 1.A**: With the assistance of CVCC and/or CVAG, develop and routinely update maps and other information about various open space land and facilities in the City and SOI.
> > **Responsible Agencies:** Planning, Parks and Recreation, CVCC/CVAG
> > **Schedule**: Ongoing

**Program 1.B**: Where appropriate, environmental hazard zones, including earthquake fault lines, floodways and floodplains, and steep or unstable slopes, shall be designated as open space on the General Plan land use map, project development plans and/or subdivision maps.
**Responsible Agencies:** Planning
**Schedule:** Ongoing

**Policy 2**: Hillsides with slopes in excess of 10% shall be permanently preserved as undeveloped open space.

**Program 2.A**: Where appropriate, the City shall seek passive recreational usage and/or ownership of desirable hillside lands currently owned by public agencies or private entities by negotiating public access provisions or establishing a transfer of development rights (TDR) program.
**Responsible Agency:** City Manager's Office; City Council
**Schedule:** Ongoing

**Program 2.B**: All but essential hillside modification on slopes steeper than 10% shall be prohibited.
**Responsible Agency:** City Engineer; Building
**Schedule:** Ongoing

**Policy 3**: Development on hillsides with slopes less than 10% shall be subject to special hillside development standards.

**Program 3.A**: Maintain and enforce a Hillside Preservation Regulations, which establish appropriate design standards that preserve the natural scenic value of hillsides.
**Responsible Agencies:** Planning
**Schedule:** Ongoing

**Program 3.B**: Expand the existing Hillside Protection Ordinance to include Edom Hill, the Indio Hills and the Santa Rosa Mountains.
**Responsible Agencies:** Planning
**Schedule:** Ongoing

**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 5**: Create a network of regional parks and open space corridors that highlight unique resources and recreational opportunities for a variety of users.

**Policy 6**: The City shall provide for a comprehensive, interconnected recreational trails system.

**Program 6.A**: Coordinate with the Coachella Valley Water District, Riverside County Flood Control District, and utility purveyors to maximize use of flood control levees and watercourses and utility easements for inclusion in the City and regional multi-use trails systems.
**Responsible Agencies:** Public Works, Planning
**Schedule:** Ongoing

**Policy 7**: The City shall preserve all substantial watercourses and washes necessary for regional community flood control and drainage for open space and/or multi-purpose recreational purposes.

**Program 7.A**: Confer and coordinate with the Riverside County Flood Control, Coachella Valley Water District and other appropriate agencies to conduct optimum revegetation management in flood control channels and drains in order to retain wildlife habitat and as natural an appearance as possible without compromising functionality.
**Responsible Agency:** City Engineer, Public Works, CVWD, RCFCWCD
**Schedule:** Ongoing

**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.

**Program 8.A**: Support and cooperate with local and regional habitat conservation efforts, including the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP).
**Responsible Agencies:** Planning, City Council
**Schedule:** Continuous

**Program 8.B**: Investigate the costs of additional land acquisition, maintenance, and other administrative functions, and encourage the transfer of public open space and conservation properties to existing land trusts for local property management, where feasible.
**Responsible Agencies:** Public Works; City Manager, CVCC
**Schedule:** Ongoing

**Program 8.C**: Cooperate with other agencies to assure the adequate maintenance of open space lands, including for purposes of blowsand control, vegetation management, removal of debris and trash, and access restrictions, where necessary.
**Responsible Agencies:** Public Works, Building
**Schedule:** Ongoing

**Policy 9**: Where feasible, the City shall preserve permanent open space edges or greenbelts which define the physical limits of the City and provide physical separation between adjoining neighborhoods.

**Program 9.A**: 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.
**Responsible Agencies:** Planning, City Council
**Schedule:** Continuous

**Policy 10**: Where possible, new development shall integrate existing pipeline, utility corridors, and other easements into a functional open space network.

**Program 10.A**: Develop open space assessments of associated utility corridors concurrent with initial development plans and tentative subdivision maps to plan and create continuous open space networks.
**Responsible Agencies:** Planning, Utilities/Agencies
**Schedule:** Continuous

**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.

**Program 11.A**: The development and design review process shall assess the adequacy of proposed design features and landscaping materials.
**Responsible Agencies:** Planning; Architectural Review Committee; Planning Commission, City Council
**Schedule:** Ongoing

**Policy 12:** The City shall, to the greatest extent possible, regulate development in the vicinity of significant mineral resources located in the City and its sphere-of-influence.

**Policy 13:** Support and cooperate with the hillside and habitat conservation management programs of the Santa Rosa Mountains Conservancy.

**Policy 14:** The City shall provide a high-quality network of parks and recreational facilities that meet the needs of families, young adults, seniors, children, and disabled individuals.

> **Program 14.A** Work with the Palm Springs Unified School District to provide joint-use facilities in areas where park and recreation facility deficits exist. Mitigate issues associated with school open space, such as vandalism, wear and tear, maintenance, and school expansion.
> **Responsible Agencies:** Planning; Public Works
> **Schedule:** Ongoing

**Policy 15**: Develop, wherever possible, recreation facilities that have multi-use capabilities and high degrees of adaptability to more intensive uses as recreation demand changes and/or population density increases.

**Policy 16**: Locate new local parks and recreation facilities near other community-oriented public facilities, such as schools, libraries, and recreation centers, where feasible, so that they may function as the heart of the community.

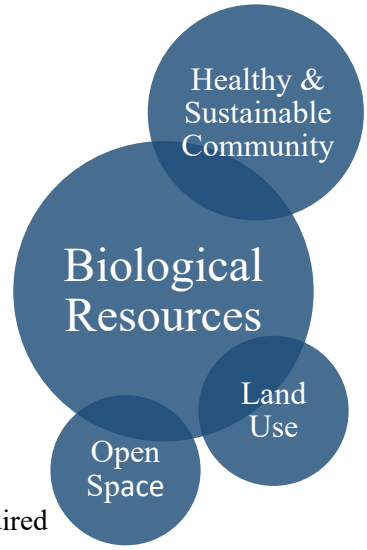
**Policy 17**: Design parks that reflect community character and identity, incorporate local natural and cultural landscapes and features, and consider surrounding land uses and urban form and cultural and historic resources.

# Biological Resources Sub-Element

## PURPOSE

The purpose of the Biological Resources Element is to preserve and protect the integrity of the natural environment and its many biological resources. For the purposes of this Element, biological resources represent the plants and wildlife species, as well as the ecosystems and habitats, which contribute to Cathedral City's natural setting. These resources not only enhance and contribute to the natural environment, they also add to the health, identity, and image of the built environment. This Element describes the natural environment and identifies the important and valuable biological resources occurring within Cathedral City and the surrounding area. It references information sources that guide decision makers in regulating land use, development, and protection of these critical resources. The goals, policies, and programs set forth in this Element are designed to ensure the long-term preservation of biological resources in a manner which benefits the entire community.

## BACKGROUND




The Biological Resources Element is directly related to the Land Use and Open Space Elements in how lands are managed and preserved for the benefit of the residents and natural communities. It is also related to the Parks and Recreation Element, which addresses the community's enjoyment of and commitment to its natural resources.

The City is required by California Government Code Section 65302(d) to include a General Plan Element which provides for the preservation and conservation of wildlife resources. This section of the Code also requires that the City provide inventories of natural vegetation, fish and wildlife, and their habitat, including rare and endangered species, in the General Plan. This Element also includes, as required, goals, policies, and programs, as well as plans and maps showing important areas for the preservation of plant and animal life and areas required for ecological and scientific study.

Many state and federal regulations have been established to protect and preserve biological resources. Among these are the federal Endangered Species Act, California Endangered Species Act, Section 404 of the Clean Water Act, and the Natural Community Conservation Planning Act. Cathedral City has been an active participant in the development of the Coachella Valley Multiple Species Habitat Conservation Plan, which is a regional effort to conserve adequate, unfragmented habitat for a wide range of special-status plant and animal species.

In addition, portions of the City are included in the Santa Rosa Wildlife Area that has been established to protect sensitive Peninsular Bighorn habitat from potentially adverse development.

The General Plan study area is also home to the Willow Hole-Edom Hill Preserve, a unique blowsand/mesquite bosque preserve that provides critical habitat to the special-status Coachella Valley Fringe-toed Lizard. The Biological Resources Element influences and contributes to the effective implementation of conservation goals, policies, strategies and programs.

This Element describes the regulatory context in which the City's biological resources are assessed, managed, and protected.

## REGIONAL ENVIRONMENT

The Coachella Valley's climate, topography, and geologic characteristics directly impact the types and prevalence of biological habitat, plant and animal species, and other resources in the planning area.

### Topography and Geology

The Coachella Valley is characterized by extreme topographic variations, from the low-lying desert floor to the hillsides and mountain ranges that surround most of the region. The Salton Sea at the southeast end of the valley occurs at an elevation of about 228 feet below sea level and has no natural outlet. The northern, western, and southern edges of the valley are bordered by major mountain ranges. Summit elevations range from 9,600 feet to 11,502 feet above mean sea level. These topographic characteristics are primarily a result of historic seismic activity. Faults have uplifted, subsided, and shifted the ground surface, while erosion, weathering, and other secondary geological processes formed canyons and alluvial fans that extend onto and fill the valley floor with sediment and sand. This unique and varied topography has created a distinctive desert environment with a number of intricate habitats, wildlife, and plant communities that make the region a biologically rich area.

### Climate

Regional climatic conditions are greatly influenced by the mountain ranges to the west, which block the valley from much of the cooler maritime conditions that occur in the Inland Empire. These mountain barriers isolate the valley and create a subtropical desert environment characterized by low rainfall, low relative humidity, and high levels of direct sunshine, with very hot summers and mild winters. Daytime temperatures during the summer months generally exceed 100˚ F, sometimes reaching more than 120˚ F. In the winter, daily temperatures range from 30˚F to 80˚F.

The surrounding mountains are cooler than the valley floor and have an approximate 5˚F decrease for every 1,000-foot increase in elevation. Mean annual rainfall ranges between four and six inches on the desert floor, and about fifteen inches in the nearby mountains. The majority of precipitation occurs during the winter months, but infrequent intense thunderstorms may occur during late summer and early fall. Most rainfall falls on surrounding mountain slopes, keeping the desert floor relatively dry throughout the year.

Wind also has a significant effect on the climate of the Coachella Valley. As the desert floor heats up, cool air from the west is drawn into the valley through the narrow San Gorgonio Pass. This generates strong winds, which pass over the most erosive portions of the valley floor, transporting large quantities of sand and dust throughout the region. This natural sand migration and transport process is responsible for creating desert sand dunes, which are an important habitat for native wildlife.

## Regional Habitats and Natural Communities

The Coachella Valley is located in one of the hottest and driest parts of the country, making it a harsh and sometimes inhospitable place. It is also one of the most biologically unique and diverse regions in the country. Its habitats and natural communities are generally divided topographically and identified by physical differences in slope, substrate, and water supply.

**HABITAT:**
**The place or set of environmental conditions in which plants and animals naturally live and grow**

### Valley Floor

Valley floor habitat lies within the central portion of the Coachella Valley. It is characterized by relatively flat and low-lying terrain with sparse vegetation and regions of blowing sands. These aeolian, or windblown, sand deposits originated from the erosion of adjacent hills, sand deposition in nearby ravines, and sandy soils transported by strong winds.

Active dunes are highly exposed to the elements and subject to intense heat and high wind conditions. "Active" means there are no windbreaks or other impediments to hinder the aeolian processes that cause sand accumulation and depletion in the sand fields. Because the dunes are continually shifting and accumulating sand, perennial plant cover is very low, and much of the surface is barren for most of the year. Vegetation is largely limited to primrose (*Oenothera*), desert dicoria (*Dicoria canescens*), and sand verbena (*Abronia villosa*). The planning area contains two active sand transport systems. Sand accumulations in the Willow Hole-Edom Hill Preserve north of Interstate-10 are dominated by extensive mesquite thickets that are supported by a high water table and blowing sand. The Willow Hole-Edom Hill Preserve provides critical blowsand habitat to the Coachella Valley Fringe-Toed Lizard and other sensitive species. Historically, the valley floor, particularly along the Whitewater River, has also functioned as an active sand transport corridor for aeolian deposits blowing from the northwest. However, urban development has restricted sand movement and resulted in a loss of this sensitive habitat.

Stabilized and partially stabilized sand fields are sand accumulations that lack the structure of sand dunes and are considered a Community of Highest Inventory Priority (CHIP) by the State. In these areas, vegetation grows more readily and consists primarily of scattered perennial herbs and shrubs. The most visible and abundant type of vegetation within this valley floor community is the creosote bush (*Larrea tridentate*), which is an evergreen shrub. Other perennials include sand verbena (*Abronia villosa*), dalea (*Dalea*) species, and burrobush (*Oenothera deltoides*). Plants that have been identified in sand fields near the Whitewater River floodplain include four-winged saltbush (*Atriplex canescens*), Indian ricegrass (*Achnatherum hymenoides*), sandpaper plant (*Petalonyx thurberi*), and Devil's lantern (*Oenothera deltoides*).

Most of the development within the planning area and the region has occurred along the valley floor. As a result, valley floor habitat is largely fragmented and disturbed. As development and growth continue, this habitat will continue to shrink, removing valuable plants and wildlife.

### Sandy Washes

Desert wash habitat consists of channels and watercourses that drain the mountains surrounding the valley. As washes emerge from canyon mouths, they form deep channels that build and cut through the alluvial plain. Farther from the canyons, washes become shallower, broader, and less defined, and the physical differences between the washes and the alluvial plain diminish.

The Desert Dry Wash Woodland plant community typically occurs in gravelly washes, although it is known to occasionally integrate with the valley floor's creosote bush scrub community. The Dry Wash Woodland is dominated by palo verde (*Cercidium floridum*) and smoke tree (*Psorothmnus spinosus*), but also includes desert willow (*Chylopsis linearis*), desert lavender (*Hyptis emoryi*), and cheesebush (*Hymenoclea salsola*). This vegetation community occurs in East and West Cathedral Canyon Washes, at the Willow Hole-Edom Hill Preserve, as well as limited locations along the Whitewater River.

Desert wash habitat often serves as travel corridors for wildlife that are supported by both the wash and the alluvial plain habitats. Birds are generally abundant in desert washes. Typical species include verdin, phainopepla, and black-tailed gnatcatcher. The largest desert washes in the planning area include Whitewater River Wash, Morongo Wash, and Long Canyon Wash. Channelization and control structures have been constructed along the majority of the Whitewater River. However, Morongo Wash and Long Canyon Wash are located north of the freeway in predominantly undeveloped regions and still support adequate and viable sandy wash habitat.

### Alluvial Plain

Lands south of East Palm Canyon Drive and at the foothills of the Santa Rosa Mountains can be characterized as alluvial plain (or fan) habitat. This habitat develops on flood-formed fans that extend from mountain canyons, such as Cathedral Canyon in the planning area. At its highest points near the mountain ridges, the alluvial plain consists of coarse rock and sand that has accumulated from a number of large floods that began shaping the plain during prehistoric times. This material becomes smoother and sandier as the fan continues downward toward the valley floor. The habitat and communities found on these plains transition with increasing distance from the canyon mouths, as the substrate is slowly altered from rocky to sandy deposits.

Sonoran mixed woody and succulent scrub is the dominant plant community of alluvial plain habitat. This community occurs along the lower slopes of the Santa Rosa Mountains and is widespread, forming the southern edge of the Coachella Valley. Sonoran mixed woody and succulent scrub is a variant of the creosote scrub community and is very typical of the Colorado Desert. Typical plant species found on the lower alluvial plain include creosote bush, indigobush (*Dalea schottii*), dyeweed (*D. emoryi*), catclaw acacia (*Acacia greggii*), smoketree (*Dalia spinosa*) and Palo verde (*Cercidium floridum*). Plant distribution and variety changes farther up the plain, and a variety of cacti including pencil cholla (*Opuntia ramosissima*) and barrel cactus (*Ferocactus acanthodes*), as well as chuparosa (*Belaperone californica*) and desert lavender become increasingly common.

### Desert Fan Palm Oasis Woodland

Desert Fan Palm Oasis Woodland is a sensitive plant community considered to be a Community of the Highest Inventory Priority (CHIP) by the State of California. Its range extends from the Baja Peninsula to Death Valley National Monument, although occurrences are discrete and isolated. Oases develop along geologic fault lines where ground water rises near the surface and can support dense vegetation.

The California fan palm (*Washingtonia filifera*), the largest palm in North America, dominates this community. Mature individuals can grow to 25 meters in height and almost one meter in trunk diameter. Other members of this plant community include desert baccharis (*Baccharis sergiliodes*) and arrowweed (*Pleuchea sericea*). A natural fan palm oasis community is located in the Willow Hole-Edom Hill Preserve within the planning area north of Interstate-10. Fan palm oases are also found within canyons of the Santa Rosa and San Jacinto Mountains where natural streams flow from the snowmelt and runoff.

This habitat provides important cover and food to migrating and wintering birds, as well as birds of prey such as the golden eagle (*Aquilachrysaetos*) and the prairie falcon (*Falco mexicanus*). Other wildlife include the southern yellow bat, common kingsnake, desert slender salamander (*Batrachoseps aridus*), and giant palm-boring beetle (*Dianpate wrightii*). The Peninsular Bighorn sheep often visit the oases in the Santa Rosa Mountains to make use of the natural supply of water that flows through the woodland.

### Rocky Slopes Habitat

The Santa Rosa Mountains, which extend from the edge of the alluvial plain at the southern end of the planning area, comprise the rocky slopes habitat. This habitat is characterized by steep slopes and continuous rock that is either weathered and fractured bedrock, or broken and displaced into loose debris of sand, pebbles, and stone. Because of the sharp slopes and extensive rock surfaces on the lower slopes, this habitat appears incapable of supporting vegetation.

However, the rocky slopes habitat supports numerous perennials and annual species. Plant density and size increase with elevation and associated increases in annual rainfall. Plants include creosote bush, brittlebush (*Encelia farinosa*), burrobush (*Ambrosia dumosa*), agave (*Agave deserti*), Ocotillo (*Fouquieria splendens*), spike moss (*Selaginella eremophila*), Parry's cloak fern (*Notholaena parryi*), arrowleaf (*Pleurocoronis plurisetaa*), pigmy cedar (*Peucephyllum schottii*), bedstraw (*Rubiceae*), and crossosoma (*Crossosoma bigelovii*).

Connectivity with the vast areas of wildlands in the Santa Rosa Mountains allows for the presence of wide-ranging animals, including Peninsular bighorn sheep, as well as predators such as prairie falcon, golden eagle, bobcat, and mountain lion.

## SENSITIVE, RARE, AND ENDANGERED SPECIES

The General Plan planning area contains a wide range of significant biological resources, including a number of plants and animal species that are highly specialized and endemic to a single habitat. Due to the loss of viable habitat, some of these species have been listed as threatened or endangered by the federal and state governments. "Endangered" species refers to those with such limited numbers that they are considered in imminent danger of extinction; "threatened" species are those that are likely to become endangered, particularly on a local scale, within the foreseeable future. "Sensitive" species are those that are naturally rare and that have been locally depleted and put at risk by human activities.

Although the perpetuation of a sensitive species does not appear to be significantly threatened, they are considered vulnerable and are often candidates for future listing. The following tables list the endangered, threatened, and sensitive species within the planning area.

**Table OS-3**
**Sensitive Species Occurring or Potentially Occurring in the Cathedral City Study Area**

| Species Name (Fed/State) | Scientific Name | Conservation Status |
|---|---|---|
| **PLANT COMMUNITIES** | | |
| 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 |
| **PLANTS** | | |
| California ditaxis | *(Ditaxis serrata)* | FSC/ND |
| Coachella Valley milkvetch | *(Astragalus lentiginosus var. coachellae)* | FE/ND |
| Flat-seeded spurge | *(Chamaesyce platysperma)* | FSC/ND |
| Payson's jewelflower | *(Caulanthus simulans)* | FSC/ND |
| **INVERTEBRATES** | | |
| Coachella giant sand-treader cricket | *(Macrobaenetes valgum)* | FSC/ND |
| Coachella Valley Jerusalem cricket | *(Stenopelmatus cahuilaensis)* | FSC/ND |
| Coachella Valley grasshopper | *(Spaniacris deserticola)* | FSC/ND |
| Casey's June Beetle | *(Dinacoma caseyi)* | END/ND |
| **AMPHIBIANS AND REPTILES** | | |
| Desert tortoise | *(Gopherus agassizi)* | FT/ST |
| Desert slender salamander | *(Batrachoseps aridus)* | FE/SE |
| Flat-tailed horned lizard | *(Phrynosoma mcallii)* | FTP/CSC |
| Coachella Valley fringe-toed lizard | *(Uma inornata)* | FE/SE |
| Common chuckwalla | *(Sauromalus obesus)* | FSC/ND |
| **BIRDS** | | |
| Ferruginous hawk | *(Buteo regalis)* | FSC/CSC |
| Golden eagle | *(Aquilachrysaetos)* | ND/CSC |
| Merlin | *(Falco columbarius)* | ND/CSC |
| Prairie falcon | *(Falco mexicanus)* | ND/CSC |
| Peregrine falcon | *(Falco peregrinus)* | FE/SE |
| Burrowing owl | *(Athene cunicularia)* | FSC/CSC |
| Crissal thrasher | *(Toxostoma crissale)* | ND/CSC |
| LeConte's thrasher | *(Toxostoma lecontei)* | FSC/CSC |
| Southwestern yellow flycatcher | *(Empidonax trailii extimus)* | FPE/SE |
| Least Bell's vireo | *(Vireo bellii pusillus)* | FE/SE |
| Yellow warbler | *(Dendroica petechia brewsteri)* | ND/CSC |
| Yellow-breasted chat | *(Icteria virens)* | ND/CSC |
| Summer tanager | *(Piranga rubra)* | ND/CSC |
| Osprey | *(Pandion haliaetus)* | ND/CSC |
| Northern harrier | *(Circus cyaneus)* | ND/CSC |
| Sharp-shinned hawk | *(Accipiter striatus)* | ND/CSC |
| Cooper's hawk | *(Accipiter cooperii)* | ND/CSC |
| Long-eared owl | *(Asio otus)* | ND/CSC |
| Southwestern willow flycatcher | *(Empidonax traillii extimus)* | FPE/SE |
| Vermilion flycatcher | *(Pyrocephalys rubinus)* | ND/CSC |
| Bendire's thrasher | *(Toxostoma bendirei)* | ND/CSC |
| Loggerhead shrike | *(Lanius ludovicianus)* | ND/CSC |

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

Source: Coachella Valley Multiple Species Habitat Conservation Plan, 2007; Biological Resources Assessment for the Cathedral City General Plan Update , prepared by Terra Nova Planning and Research, Inc. 2001.

**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: Stage listed as “Threatened”
SSC: California Species of Special Concern
ND: Species not designated

### Public Land Agencies and Ecosystem Management

In addition to regulations and legislation regarding biological resources, there are also several public land agencies and non-profit organizations that focus on ecosystem management and biological resource protection. While many of the lands that are owned and managed by these agencies and organizations provide for varying degrees of disturbance from recreational uses, the mandate for most is the safeguarding and conservation of cultural, scenic, and biological resources.

Within the City's corporate limits are lands owned and managed by the US Bureau of Land Management and include the Willow Hole Preserve and the west Edom Hill windfarm. Within the greater Coachella Valley, other agencies with ownership or management responsibilities include the National Park Service, U.S. Forest Service, Bureau of Land Management, California Department of Fish and Wildlife, and California Department of Parks and Recreation. Predominant non-profit organizations include the Coachella Valley Mountains Conservancy, the Friends of the Desert Mountains, the Center for Natural Lands Management, and the Nature Conservancy.

### Federal Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 provides much needed protection to biological resources and is a dominant force in biodiversity protection. Congress passed the ESA to "provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved, and to provide a program for the conservation of these species." The Department of the Interior, acting through the U.S. Fish and Wildlife Service (USFWS), is responsible for the protection of most threatened and endangered species. The Department of Commerce, through the National Marine Fisheries Service, has responsibility for marine mammals and anadromous fish. The ESA provides for the listing of species, designation of critical habitat, recovery planning, and prohibitions.

### Endangered and Threatened Species

An "endangered" species is any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range; a "threatened" species is any species of animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. A "candidate" species is a species for which substantial information is available to support a listing proposal, but for which a lack of funding and personnel preclude listing. The Secretary of the Interior publishes "notices of review" listing the status of candidate species that can be added to the list for the following reasons:

1. Current or threatened destruction of habitat;
2. Overuse of the species for commercial, recreational, scientific or educational purposes;
3. Disease or predation;
4. Ineffective regulatory mechanisms; and
5. Other natural or manmade factors affecting the species' chances of survival.

### Critical Habitat

Critical habitat is defined as the geographic area containing physical or biological features essential to the conservation of a listed species, or an area that may require special management considerations or protection. Neither federal agencies nor private landowners may destroy or adversely modify critical habitat of any listed species. More than 80 percent of all listed species have no designated critical habitat. See Exhibit OS-1 and OS-2 for a mapping of conservation areas in and adjacent to the City.

### Recovery Planning For Threatened and Endangered Species

The ESA requires the USFWS to develop and implement recovery plans for all threatened and endangered species in the United States. Recovery plans set forth what is needed for a species to "recover" to the point that it no longer needs the protections of the ESA. They must include specific management recommendations for the species and objective, measurable criteria which, when met, would signal the recovery of the species.

### Prohibited Actions under the Endangered Species Act

The ESA establishes broad prohibitions against "taking" endangered or threatened species. On both public and private lands of the U.S., it is illegal "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" threatened or endangered species. The USFWS has defined "harm" to include significant destruction of a species' habitat that results in actual death or injury.

### Incidental Take Permits and HCPs

The ESA contains an exception to the strict prohibition against "take" in which the USFWS may permit a project to go forward and destroy threatened and endangered species and their habitats as long as the taking is "incidental" to, and not the purpose of, the project. It is commonly referred to as an "incidental take permit" (ITP). The USFWS cannot issue an ITP unless the permit applicant adheres to an approved "Habitat Conservation Plan" (HCP). HCPs must specify the proposed project's impact to the species and include mitigation measures which will reduce the project's impacts. The City is a participant in the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) which is intended to protect a number of species and habitats (see below).

### California Endangered Species Act

The California Endangered Species Act (CESA), administered by the California Department of Fish and Wildlife, largely parallels the federal law and provides similar requirements and mandates to those described above. CESA, however, goes further than the ESA in that it prohibits the taking of both endangered species and those petitioned for listing at the state level.

CESA also includes plant species under its protection, whereas the federal ESA only protects plants on federally owned lands or where there is a federal nexus. In Cathedral City and other Coachella Valley communities, local government is responsible for ensuring that all proposed projects conform to the standards and mandates of both the ESA and CESA. The Coachella Valley MSHCP conforms to the standards of both laws, in order to receive incidental take permits from both the federal and state governments.

### Habitat Protection

While the ESA and CESA are powerful tools for biological resource protection, they generally focus on individual species rather than entire biological communities. Nevertheless, the driving force behind today's decline in species is the destruction, degradation, and fragmentation of critical and essential habitat due to increasing human population and conversion of valuable open space land to urban uses. Habitat fragmentation results in a decrease in the habitat type and the allotment of the remaining habitat into smaller, more isolated pieces. This can cause smaller populations due to smaller amounts of habitat, isolation of populations into fragmented parts with less genetic diversity, and potential increases in predators, competitors, and parasites. As a result, habitat fragmentation is one of the greatest threats to species and the ecosystems they rely upon for survival.

Habitat protection and the widespread preservation of ecosystems provide support for maximum biological diversity, with the goal of long-term protection of all species within the protected habitat. The Coachella Valley MSHCP seeks to protect various regional ecosystems and provide long-term viability for the species included in the Plan.

### Coachella Valley Multiple Species Habitat Conservation Plan

The Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP), approved by Riverside County and all Coachella Valley municipalities and with overall management by the Coachella Valley Association of Governments (CVAG), contains principles, policies, and a regional vision to conserve the Coachella Valley's biological resources and protect biological diversity on a regional scale. The MSHCP is intended to balance environmental protection and economic development objectives and simplify compliance with endangered species-related laws. It is intended to provide a seamless network of adequate habitat for the protection and safekeeping of long-term viable populations of the species that are currently listed as threatened or endangered.

Cathedral City is a MSHCP Permittee and subject to the terms and conditions set forth in the plan. The entire General Plan planning area, with the exception of tribal lands of the Agua Caliente Band of Cahuilla Indians (ACBCI), is within the boundaries of the MSHCP. Habitat and species protection on tribal lands is covered by the ACBCI Tribal Habitat Conservation Plan (see discussion below).

In accordance with the MSHCP, most private development projects in Cathedral City are subject to payment of development impact mitigation fees. Development within or adjacent to MSHCP-designated Conservation Areas are subject to additional requirements and guidelines to minimize potential edge effects on protected habitat and species, such as impacts from lighting, noise, and domestic animals. In the General Plan planning area, Conservation Areas include the Willow Hole and Edom Hill Conservation Areas north of US I-10, and the Whitewater Floodplain and Santa Rosa/San Jacinto Mountains Conservation Areas to the south. The MSHCP Conservation Areas in and adjacent to the City are mapped on Exhibits OS-1and OS-2.

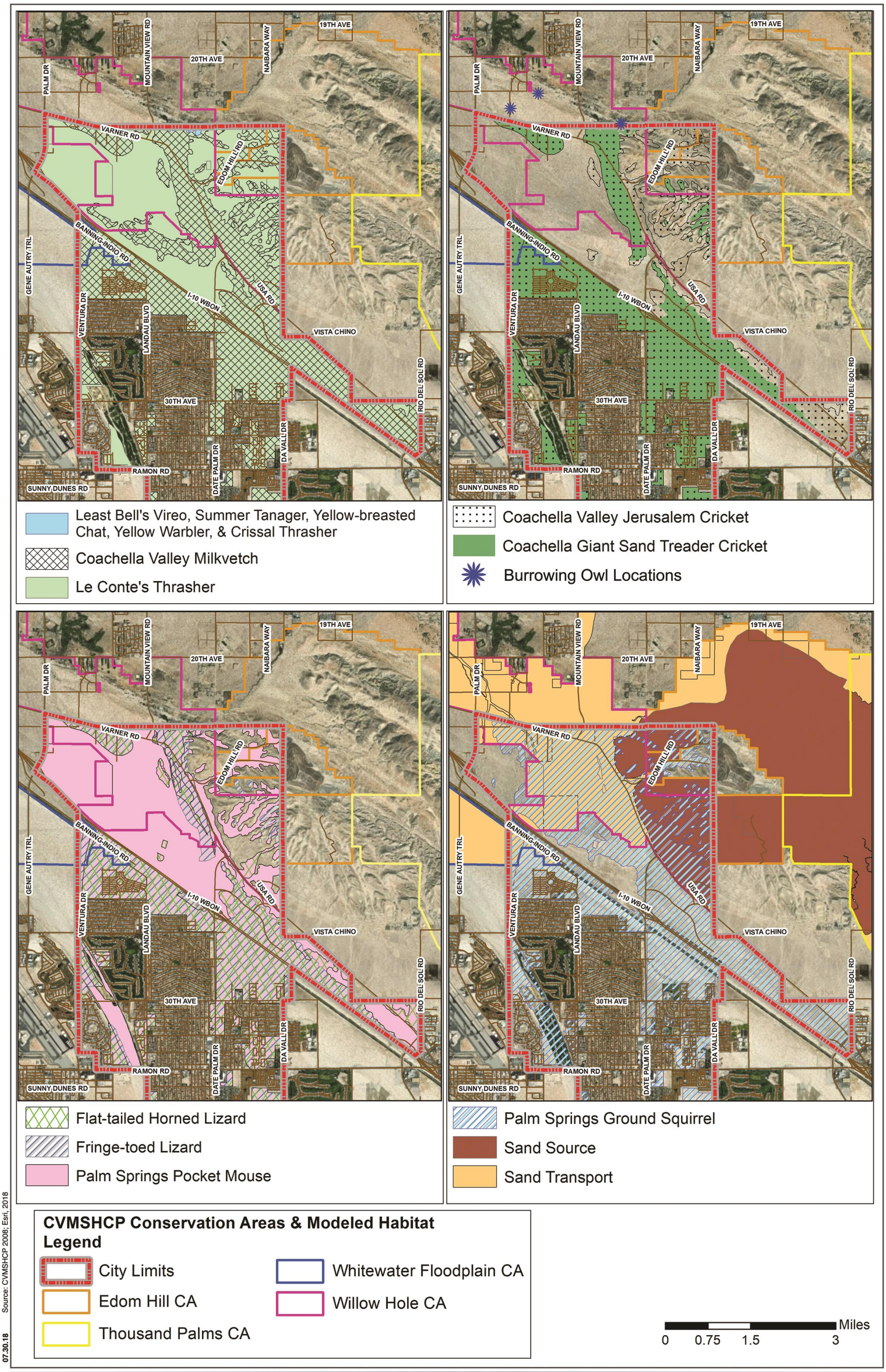



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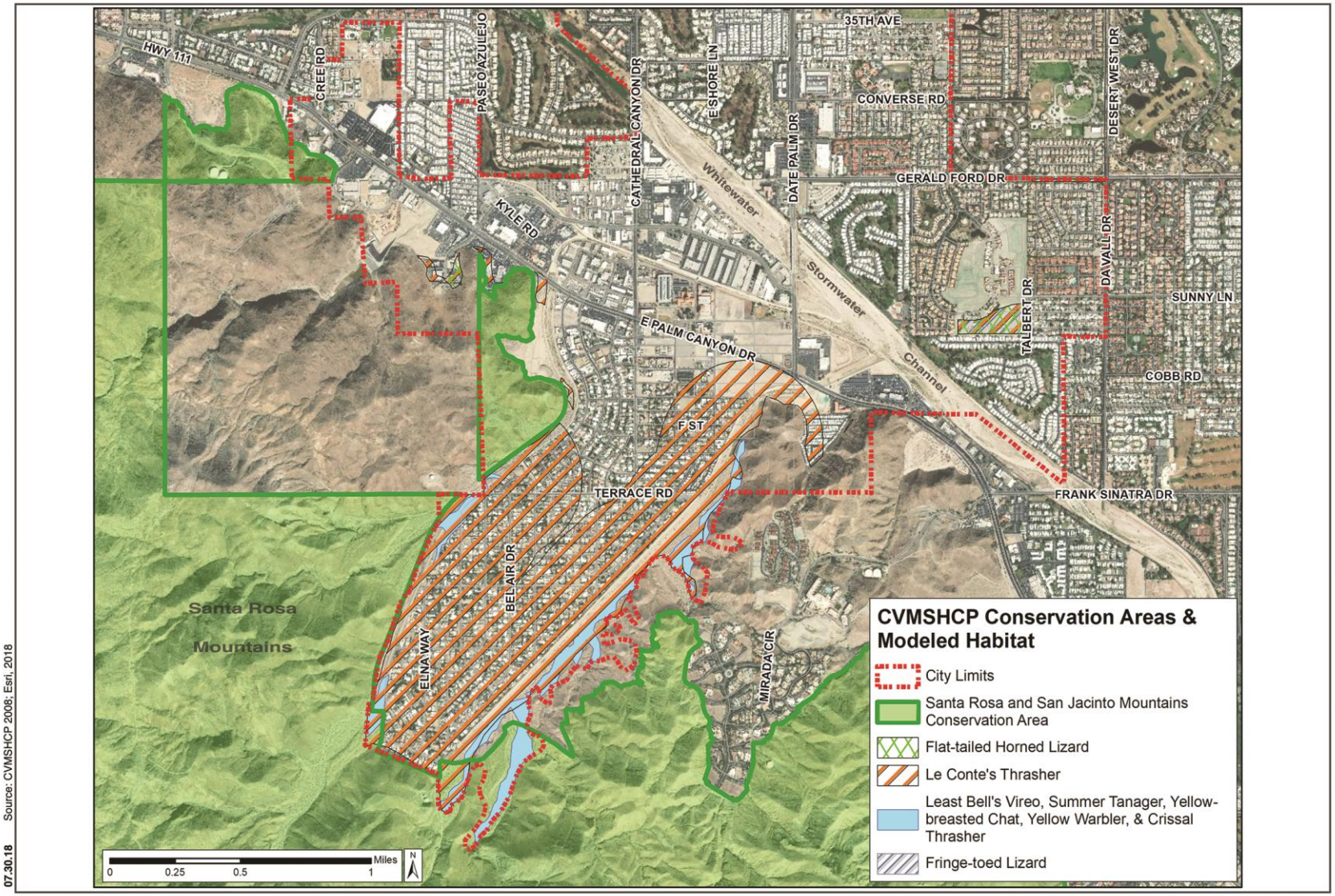
**Exhibit OS-1 - CVMSHCP Biological Resources Map North**
**Cathedral City 2040 General Plan**

Cathedral City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PASEO AZULEJO
CATHEDRAL CANYON DR
E SHORE LN
35TH AVE
CONVERSE RD
DESERT WEST DR
DATE PALM DR
GERALD FORD DR
KYLE RD
Whitewater
Stormwater
Channel
DAVALL DR
TALBERT DR
SUNNY LN
E PALM CANYON DR
COBB RD
F ST
TERRACE RD
FRANK SINATRA DR
BEL AIR DR
ELNA WAY
MIRADA CIR
Santa Rosa
Mountains
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
Miles
0
0.25
0.5
1
N
Source: CVMSHCP 2006; Esri, 2018
07.30.18
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Exhibit OS-2 - CVMSHCP Biological Resources Map South
Cathedral City 2040 General Plan
Cathedral City

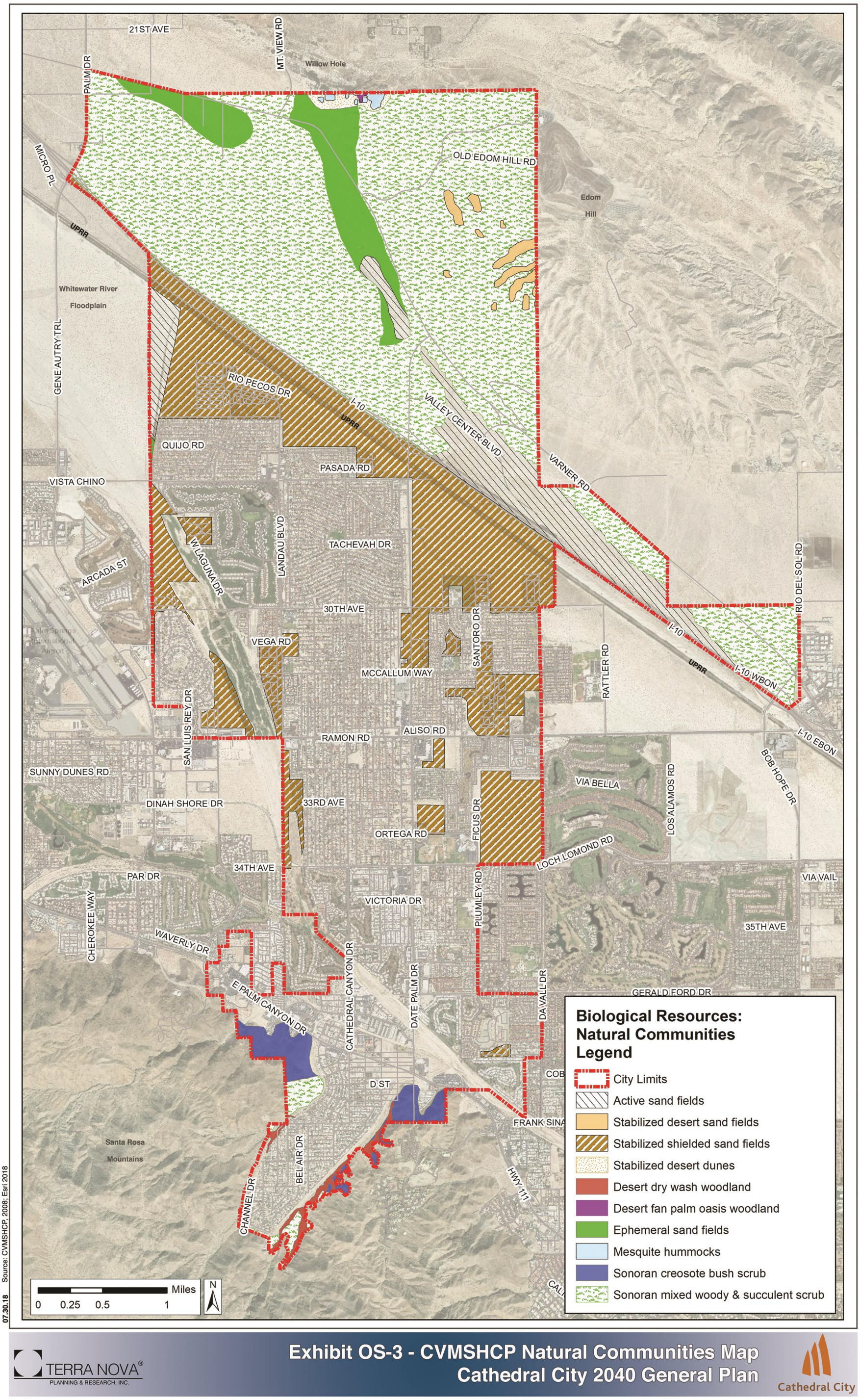


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**Exhibit OS-3 - CVMSHCP Natural Communities Map**
**Cathedral City 2040 General Plan**

Cathedral City

### ACBCI Tribal Habitat Conservation Plan

The Agua Caliente Tribal Habitat Conservation Plan (HCP, 2010) provides a means to protect and contribute to the conservation of federally listed species or those deemed by the Tribe and USFWS to be sensitive and potentially in need of listing in the future. The ACBCI Reservation consists of approximately 31,500 acres within the geographical boundaries of three cities (Palm Springs, Cathedral City, and Rancho Mirage) and unincorporated Riverside County. The Reservation land is composed of a checkerboard pattern of landholdings, including Tribal trust land, allotted trust land, and fee land. The City and the ACBCI cooperate on local and regional matters of mutual concern, including protection of open space and natural resources. The City also regularly consults and shares information with the Tribe pursuant to Senate Bill 18 and Assembly Bill 52.

The Tribal HCP incorporates and builds upon the Tribe's existing conservation programs by providing additional means of protecting significant areas of Covered Species' habitat through adoption of new development standards and creation of a Habitat Preserve to be managed by the Tribe or its designee(s). The Tribal HCP has not yet been approved by the USFWS. The Tribe, through the ACBCI THCP, assists the USFWS in its mission to conserve sensitive species and their habitats, while maintaining appropriate sovereign authority over activities taking place within the Tribe's jurisdiction and protecting unique Tribal values.

### Santa Rosa and San Jacinto Mountains National Monument

On October 24, 2000, the President of the United States signed legislation creating the Santa Rosa and San Jacinto Mountains National Monument. The new Monument encompasses approximately 272,000 acres within the Santa Rosa and San Jacinto Mountains, with lands administered by the Bureau of Land Management (BLM), U.S. Forest Service (USFS), California Department of Fish and Wildlife (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 private owners. The National Monument designation provides further protection and preservation of nationally significant biological, cultural, recreational, geological, wilderness, educational, and scientific resources. The benefits of the Monument designation include enhanced potential for funding opportunities, increased cooperative management between the federal land agencies, and additional protection for the area's natural resources.

### Willow Hole-Edom Hill Preserve

The Willow Hole-Edom Hill Preserve was established to assist in preserving the federally listed Coachella Valley Fringed-toed Lizard. The preserve provides an important environment for blowsand-endemic species and has grown over time to include 2,469 acres. Important biological resources found on the preserve include mesquite hummocks, a fan palm oasis, and habitat for the Coachella Valley milk vetch, Little San Bernardino Mountains gilia, Palm Springs ground squirrel, Palm Springs pocket mouse, burrowing owl, crissal thrasher, and Coachella Valley giant sand-treader cricket.

The Willow Hole-Edom Hill Preserve is classified as an Area of Critical Concern (ACEC), with lands collaboratively managed by the Bureau of Land Management (BLM), Center for Natural Lands Management (CNLM), Coachella Valley Mountains Conservancy (CVMC), US Fish and Wildlife Service (Service), Coachella Valley Conservation Commission (CVCC), and Friends of the Desert Mountains (FODM). Additional conservation lands adjacent to the preserve and outside of it are continuing to be acquired to complete this Preserve, which is primarily managed by the BLM.

### Conservation Easements

Conservation easements are an important way to maintain land ownership while assuring protection of biological and other natural resources. For instance, the City has granted conservation easements on portions of its lands in the East Cathedral Canyon Wash as mitigation for impacts to the Whitewater River associated with bridge and other transportation projects. The CVCC is an important partner for the City and other jurisdictions with responsibilities for habitat protection and impact mitigation.

### Habitat Connectivity

Habitat connectivity is an essential aspect of viable habitat conservation and wildlife management. Habitat connectivity is accomplished by establishing habitat linkages and wildlife movement corridors that connect fragmented pieces of habitat. This allows for the movement of wildlife, a place for new vegetation to recolonize, and diversifies the plant and wildlife genepools across areas of available habitat. The MSHCP has established a resource corridor/linkage just north of I-10, which is designed to connect the Willow Hole CA with the Whitewater Floodplain CA.

## FUTURE DIRECTIONS

The Coachella Valley Multiple Species Habitat Conservation Plan is an important and affective vehicle for the City of Cathedral City to help assure the long-term protection of important biological resources in the City and the Coachella Valley. Not only does the plan preserve important plant and animal species, it also establishes a regional ecological system that will be able to support important and intact ecosystems and communities. The City will continue to strive to make the built environment more harmonious with the natural environment, and establish means for doing so. This can be achieved by implementing the General Plan, and through thoughtful Zoning, Subdivision and Grading Ordinances. The City also has the opportunity to regulate growth and limit impacts through community planning and development regulation.

## GOALS, POLICIES, AND PROGRAMS

**Goal 1:** Preservation and protection of the unique biological resources in the City and region.

**Goal 2:** A functional, productive, harmonious, and balanced relationship between the built and natural environments.

**Policy 1:** The City shall continue to participate in the preservation of habitat for endangered, threatened, and sensitive species.

**Program 1.A**: Through the Coachella Valley Conservation Commission, maintain an accurate and regularly updated map of sensitive plant and animal species and habitat in Cathedral City and its planning area.
**Responsible Agency:** Planning, CVCC
**Schedule:** Continuous

**Program 1.B**: The City shall continue to implement and abide by the provisions of the Coachella Valley Multiple Species Habitat Conservation Plan, including collection of development impact fees and implementation of land use adjacency guidelines for development within or adjacent to MSHCP-designated Conservation Areas.
**Responsible Agency**: Planning, CVCC
**Schedule:** Ongoing

**Program 1.C**: City staff will continue to request biological resource surveys for new development in compliance with applicable state and federal requirements.
**Responsible Agency**: Planning
**Schedule:** Continuous

**Program 1.D**: When considering development proposals near the Willow Hole CA and the Willow Hole-Edom Hill Preserve, the City will require developers to consider the impacts of their project on wind-blown sand transport, and encourage creative design techniques, such as units clustering and open space areas, in project design that sustain these ecological processes.
**Responsible Agency**: Planning, Public Works
**Schedule:** Continuous

**Program 1.E**: The City shall continue to work closely with the Agua Caliente Band of Cahuilla Indians to help assure that development on tribal lands in the planning area conforms to the provisions of the Tribal Habitat Conservation Plan.
**Responsible Agency**: Planning, ACBCI
**Schedule:** Continuous

**Program 1.F**: The City shall continue to implement and abide by the provisions of the US Fish & Wildlife Service Casey's June Beetle management plan, requiring surveys and mitigation where appropriate, and implementing land use adjacency guidelines of the CVMSHCP, where appropriate.
**Responsible Agency**: Planning, CVCC
**Schedule:** Continuous

**Policy 2**: As part of the development review process, projects shall be evaluated for their impacts on existing habitat and wildlife, and for the land's value as viable open space.

**Program 2.A**: The City shall encourage developers to recover native and drought tolerant plant materials, and incorporate them into project landscaping, to provide or enhance habitat and serve to extend the local desert environment into the urban design of the City.
**Responsible Agency:** Planning
**Schedule:** Continuous

**Program 2.B**: The City shall distribute a listing of planting materials which emphasizes native vegetation, but may also include non-native, plants which are compatible with the local desert. A list of prohibited plants shall also be made available to land developers and the general public.
**Responsible Agency:** Planning
**Schedule:** Continuous

**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 ways, and linkages between open space areas and the built environment.

**Program 3.A**: Consult and coordinate with relevant public and quasi-public agencies, including Riverside County Flood Control, CVWD and Southern California Edison, to encourage the establishment of a system of multiple use wildlife and public access corridors.
**Responsible Agency:** Planning; Riverside County Flood Control, CVWD, Southern California Edison, others
**Schedule:** Ongoing

**Policy 4**: Assure that sensitive habitat and wildlife areas, as well as state and federal lands, are appropriately buffered from the built environment and associated edge effects.

**Program 4.A**: Where appropriate, the General Plan Land Use, Circulation, and Open Space and Conservation Elements shall recognize, reflect, and provide an effective buffer between urban land use and development and valuable and sensitive habitats and natural communities within the Santa Rosa Mountains, the Willow Hole-Edom Hill Preserve, MSHCP Conservation Plan, ACBCI Tribal Habitat Conservation Areas, and other open space and conservation lands.
**Responsible Agency:** Planning, Planning Commission, City Council
**Schedule:** Continuous

**Policy 5**: Promote the protection of biodiversity and proactively encourage an appreciation for the natural environment and biological resources.

**Program 5.A**: Encourage the Palm Springs Unified School District and other organizations, such as The Living Desert, Friends of the Desert Mountains and others to provide educational programs that offer an understanding of the region's natural environment and make the public aware of the importance and value of biological resource issues.
**Responsible Agency**: Planning
**Schedule:** Ongoing

# Cultural Resources Sub-Element

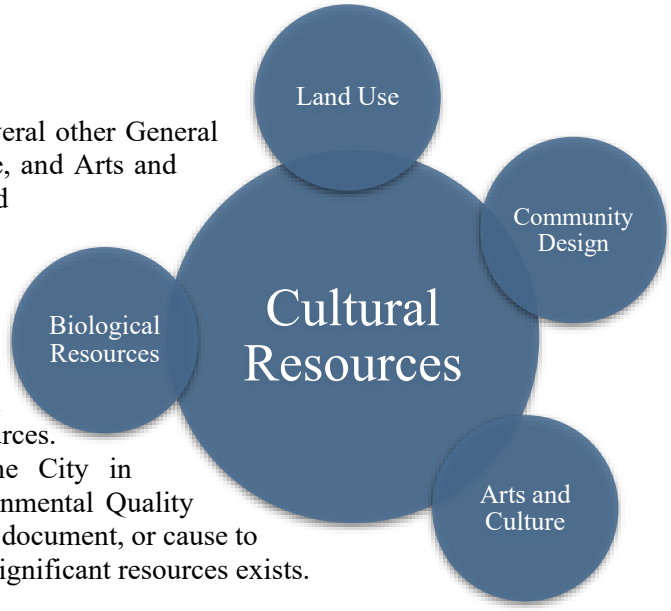
## PURPOSE

The purpose of the Cultural Resources Element is to set forth goals, policies, and programs that preserve the cultural and historic sites, heritage, and traditions of the City of Cathedral City and its vicinity. It provides the basis for the identification and preservation of these valuable resources. The Element references information sources that provide detailed descriptions and evaluations of archaeological and historic resources within the General Plan planning area.

Within this Element, cultural resources are divided into three separate discussions: prehistoric, historic, and locally significant. These divisions are based on time periods and the differing cultures and events associated with them. While they represent different components of local history, they are equally important to the preservation of the City's and Valley's unique heritage.

## BACKGROUND/SETTING

The Cultural Resources Element is directly related to several other General Plan elements, including Biological Resources, Land Use, and Arts and Culture. It may also influence the Community Image and Urban Design Element.




The issues addressed in the Cultural Resources Element are some of those identified in California Government Code Section 65560(b)(3) which addresses open space land for outstanding historic and cultural value, and Section 65560(b)(6) which addresses open space for tribal resources. Public Resources Code Section 5076 also guides the City in developing open space programs. The California Environmental Quality Act (CEQA), Section 21083.2(g), also requires the City to document, or cause to be documented, cultural resources when the potential for significant resources exists.

Cultural traditions, places, sites, and artifacts serve as important links between the past, present, and future. They are an integral part of community life and provide a meaningful sense of heritage and history. Numerous archaeological sites established by Cahuilla Indians as early as 6,000 years ago have been identified throughout the Coachella Valley. The region also contains important historic features, including roads and trails, which were used by early European settlers beginning in the late eighteenth century.

## PREHISTORIC PERIOD

The prehistoric period refers to the time prior to the arrival of non-Indians, when native lifestyles and traditions remained essentially undisturbed, strong, and viable. According to archaeologists, the prehistoric period in the Coachella Valley is generally divided into the Late Prehistoric and Archaic Periods. The transition between these two periods is generally considered to be around AD 1000 and is identified by the introduction of ceramics into the region from the Colorado River cultures. For this reason, the Archaic Period is generally referred to as the "pre-ceramic" period. Also significant during prehistoric times was the introduction of the bow and arrow around AD 500, and the change from burial practices to cremations around 500 BC.

## THE CAHUILLA

### Early Cahuilla

The Cahuilla people were the first known inhabitants that settled in the Coachella Valley. According to Cahuilla oral tradition, the Cahuilla people have been here since time immemorial. Archaeologists have hypothesized the Cahuilla migrated south from the Great Basin region of Nevada, Utah, and eastern California. Some anthropologists believe the descent of these native peoples has been derived from linguistic relationships, which has offered traces of their ancestral past. According to linguists, the Cahuilla belong to the Uto-Aztecan language family and are a Takic-speaking people. Other people that belonged to the Takic group are the Serrano, Luiseño, and Gabrieliño people located in the surrounding regions of southern California. Anthropologists generally divided the Cahuilla into three groups according to their geographic locations in the region: the Pass Cahuilla of the San Gorgonio Pass/Palm Springs area; the Mountain Cahuilla of the San Jacinto and Santa Rosa Mountains; and the Desert Cahuilla of the eastern Coachella Valley. All three groups spoke different dialects of the Cahuilla language, had similar lifestyles, and practiced the same traditions.

Pre-contact, the geographic range of the Cahuilla people went far beyond the Coachella Valley. It was an expanse of approximately 4 million acres, covering a wide variety of ecological zones which the ancestors utilized for important plant and animal resources. The Coachella Valley provided the people tall mountains, deep valleys, rocky canyons, passes, and arid desert land for sustenance, shelter, and places to escape the heat or cold. Many of the Cahuilla lived around ancient Lake Cahuilla, which was located where the Salton Sea is today and at times extended as far north as the City of La Quinta. Remains indicate that these people ate fish, shellfish, water plants, and birds as well as land animals and plants. However, when the lake dried out around AD 1500, they had to rely more heavily on resources from the nearby hills and mountains for water, food, and shelter.

### Cahuilla in Present Times

Conflicts over land rights began with the intrusion of non-Indian settlers and continued into more recent times. However, as more laws were enacted, the Cahuilla were able to adapt efficiently with the changing times. In 1959, two bills passed that helped to provide the Cahuilla with more economic stability. The Equalization Act of 1959 allotted land to all tribe members who had not received land allotments, and ensured that the allotments were to be based on 1957-1958 appraised land values. The second bill provided that reservation lands could be leased for a period not exceeding ninety-nine years. The first large enterprise on reservation leased land was the Palm Springs Spa Hotel complex. The spa was completed in 1960 at a cost of $1.8 million. In the 1970s, a court decision found that Indians have control over the zoning of their lands within a city. Shortly before the spa was built, the City of Palm Springs and the Agua Caliente Band of Cahuilla Indians (ACBCI) entered into a land use contract for planning and development on the reservation from which each would mutually benefit. Agua Caliente have similar agreements with Cathedral City and Rancho Mirage.

The ACBCI, is a sovereign tribal nation and the nearest Native American tribe to the City of Cathedral City. The Agua Caliente Indian Reservation, established in 1876 and extended in 1877, encompasses 31,500± acres generally covering alternating Sections of land in a checkerboard pattern in the western Coachella Valley. The Agua Caliente reservation overlaps with the cities of Palm Springs, Cathedral City, and Rancho Mirage, as well as unincorporated Riverside County.

The ACBCI Tribal Council is an elected body that sets policy and makes and implements laws on behalf of Tribal membership. The ACBCI maintains agreements and a close working relationship with the City of Cathedral City regarding development on tribal lands within City boundaries, but also operates its own Planning and Natural Resources Division and Planning Commission for the management of tribal land and environmental resources. ACBCI establishes its own land use codes, specific plans, ordinances, habitat conservation plans, and other

administrative mechanisms. It is a jurisdictional member of the Coachella Valley Association of Governments (CVAG). In addition, The Tribal Historic Preservation Office is responsible for reviewing projects and consultation under certain historic preservation laws, including Section 106, CEQA, AB 52, SB 18, and others.

Today the ACBCI is involved in the community and has turned increasingly toward an emphasis on its culture. The Tribe has a robust Tribal government and Tribal Historic Preservation Office which is responsible for managing, protecting, and preserving the Tribes' unique cultural heritage. The Tribal Historic Preservation Office consults with agencies, developers, and anthropologists on impacts to cultural resources to minimize impacts. Additionally, efforts have been taken to preserve the Cahuilla language and other aspects of the traditional Cahuilla culture. The ACBCI operates the Agua Caliente Cultural Museum in Palm Springs that teaches about the traditional lifestyles and practices of its ancestors, establishes a sense of roots for modern-day Cahuilla, and continues to revitalize their heritage. The ACBCI also owns and operates Tahquitz and Indian Canyons and several enterprises, including hotels, casinos, and golf resorts. Plans are underway for a 12.5-acre casino and mixed-use entertainment venue at the northwest corner of Date Palm Drive and East Palm Canyon Drive in Cathedral City (see *Arts and Culture Element*).

### Prehistoric Resources in the Planning Area

The Eastern Information Center (EIC) at the University of California Riverside is under agreement with the California Office of Historic Preservation to integrate and supply information about cultural resources and surveys in Riverside County. According to the EIC, the Cathedral City area has not been extensively surveyed for cultural resources. The majority of the studies took place in the northern portion of the planning area on the valley floor and in the Indio Hills. In the southern portions of the planning area, several relatively small-scale studies have taken place around Cathedral City's urban core, and perhaps due to limited surveys being completed, few archaeological sites were recorded.

In the planning area, according to the ACBCI 11 prehistoric site has been recorded into the California Historical Resource Information System. There are additional sites within, or in proximity to the planning area that have been identified by Tribal Historic Preservation Office to be of potential cultural significance.[1] Six of these locations are described in Table OS-4. Four of the six are found along the foot of the San Jacinto Mountains, near the southern end of the planning area, while the fifth is situated in the Whitewater River bed in the same general vicinity. All five of these locations are associated with the various streams or canyons where water sources were available. The sixth location is situated in the Edom Hill area, in the northwestern portion of the planning area. None of the six sites are located on the valley floor. The six locations of cultural value are listed in the table below.

**Table OS-4**
**Sites of Cahuilla Cultural Value in the Planning Area**

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

Source: "*Cultural Resources Technical Report- Cathedral City General Plan*," prepared by CRM TECH, July 2, 2001 and "*Historic Resource Context & Historic Resource Program, Cathedral City, California*," prepared by Kaplan Chen Kaplan, November 21, 2017.

[1] "Cultural Resources Technical Report- Cathedral City General Plan," prepared by CRM TECH, July 2, 2001.

### Areas of Sensitivity for Prehistoric Resources

Given the above findings, certain geographic locations within the planning area are regarded as highly sensitive for prehistoric and archaeological sites. The foothills and canyons area along the base of the Santa Rosa Mountains, and the mesquite dunes between Seven Palms Valley and Edom Hill are highly sensitive for prehistoric archaeological resources. The balance of the planning area on the valley floor, in contrast, contains a lower sensitivity for prehistoric archaeological resources.

### Tribal Consultation

Cathedral City has developed a close and cooperative relationship with the local Native American Tribes, including the Agua Caliente Band of Cahuilla Indians (ACBCI). This cooperation and coordination are exemplified by the Tribe/City land use agreement, the City's well-established sharing of land use and other information with the Tribe, formal and informal consultations and references to the Tribal HCP. Recent legislation, including AB 52 and SB 18, now mandate consultation that the City has carried out for many years.

*Assembly Bill 52*

In July 2015, California implemented Assembly Bill 52, which allows California Native American Tribes on the Native American Heritage Commission List, including both federally and non-federally recognized tribes, to establish, through a formal notice letter, a consultation process with a lead agency regarding any proposed project subject to CEQA in the geographic area with which the tribe is traditionally and culturally affiliated. This law recognizes California tribes' expertise regarding cultural resources and provides a method for agencies to incorporate tribal knowledge into their CEQA environmental review and decision-making processes for the purpose of preserving or mitigating impacts to culturally important places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code that are located within the city's or county's jurisdiction (Gov. Code § 65352.3, 65562.5).

*Senate Bill 18*

California Senate Bill 18 (2004) recognizes the need to establish early and meaningful consultation between tribal and local governments for projects involving cultural places. "Cultural places" include Native American sanctified cemeteries, places of worship, religious or ceremonial sites, sacred shrines, and any 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, burial ground, or archaeological or historic site. SB 18 amended State planning statutes by requiring the City to: 1) prior to a General Plan/Specific Plan amendment, update, or adoption, contact and consult with California Native American tribes for the purpose of preserving or mitigating impacts to Cultural Places, and 2) contact and consult with California Native American tribes prior to designating land as Open-Space if it contains a cultural place, for the purpose of determining the level of confidentiality required to protect the cultural place and for the purpose of developing treatment with appropriate dignity of the cultural place in any corresponding management plan.

## HISTORIC PERIOD

The Historic Period in the Coachella Valley refers to the period of time of the first European contact, around the late 1770s. This period ended about the time of World War II, and therefore, "historic resources" generally refer to significant resources that are more than forty-five years of age. Historic resources and sites generally consist of structures or buildings, permanent trails, or highways.

### History of the Coachella Valley

The primary prehistoric and historic route through the Coachella Valley was a trading route known as the Cocomaricopa Trail, which connected the Pacific coast to the Colorado River. The route, originally used by the native peoples of the area, was "discovered" by European explorers as early as 1815. In 1862, the Cocomaricopa Trail was again rediscovered by Colonel William Bradshaw and became known as the Bradshaw Trail.

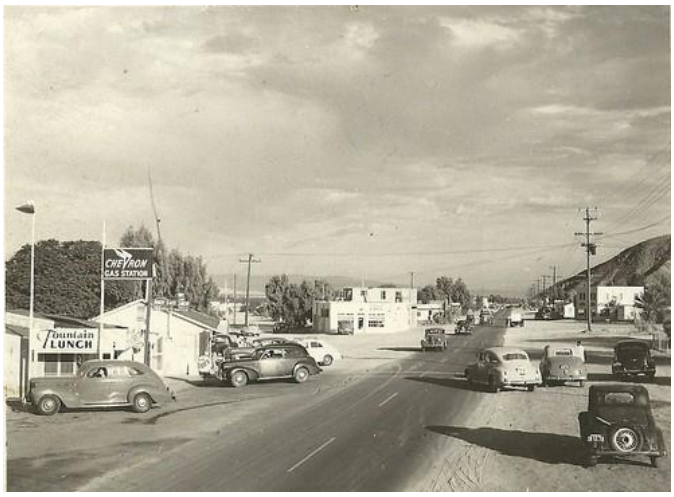
Until the completion of the Southern Pacific Railroad in 1877, it served as the primary route between the Los Angeles basin and gold mines in Arizona. The Bradshaw Trail was used in the early 20th century to create a portion of the Ocean-to-Ocean highway. In the Coachella Valley, present-day Highway 111 (East Palm Canyon Drive in Cathedral City) closely follows the historic Bradshaw Trail.

The Southern Pacific Railroad brought non-Indian settlement to the Coachella Valley in the 1870s, when stations were established, and spread further in the 1880s after public land was opened for claim under the Homestead Act, Desert Land Act, and other federal land laws. Traditionally, farming was the dominant economy in the valley, thanks in part to the development of groundwater resources. The completion of the Coachella Canal in 1948-1949, in particular, provided an adequate and reliable water supply. The main agricultural staple in the Coachella Valley was the date palm, which was first introduced around the turn of the century. By the late 1910s, the date palm industry had firmly established itself. Starting in the 1920s, the Coachella Valley developed a new industry that consisted of equestrian camps, resort hotels, and eventually country clubs. The resort industry gradually spread throughout the Valley, transforming the area to a popular winter tourist retreat.

### The Founding of Cathedral City

The City of Cathedral City was founded in 1925 by four developers (John Grove, George Allen, Glenn Plumley, and M.V. Van Fleet) whose names were given to some of the original streets in the subdivisions they created. The name of the town was derived from nearby Cathedral Canyon, which had been known by that name since at least the turn of the century. Created to provide affordable low-to moderate income housing, the town was characterized by narrow streets lined by small and often odd-shaped lots, and became known as the affordable neighbor of Palm Springs.

With the upgrading of present-day Highway 111 (East Palm Canyon Drive) in 1927, several motels and restaurants were constructed along the newly paved state highway. At that time the highway was known locally as *Broadway*, and it formed the core of Cathedral City's downtown commercial district. During the 1930s, Cathedral City attracted Palm Springs visitors with the opening of two prominent gambling casinos, the Dune Club and 139 Club.




The 1940s and the early 1950s marked a period of relatively rapid growth for Cathedral City. During World War II, the town served as a bedroom community to the military installations established in the vicinity as a part of the war effort.

By the mid-1950s, residential development had expanded from the original townsite southward into the cove area, westward along Highway 111, and northward to the Ramon Road corridor. The rural northern portion of the General Plan planning area also saw significant growth in the early and mid-1950s. In this area, five-acre parcels were patented by the U.S. government under the so-called "Baby Homestead Act" to residents of the Los Angeles basin who were looking for weekend retreats in southern California's desert.

During the post-WWII era, Cathedral City and the other cities along Highway 111 became the fastest growing communities in the Coachella Valley and began to play an increasingly important role in the regional economy. In 1981, Cathedral City was incorporated as the 18th city in Riverside County. With a population over 53,000, it is currently the second most populous city in the Coachella Valley.

### Historic Resources in the Planning Area

In the early 1980s, the Riverside County Historical Commission commissioned a countywide historical resources reconnaissance, which led to the recordation of eight historic-era buildings within the planning area. All of these were located in Cathedral City's old downtown area, and their construction dates ranged between the mid-1920s and the late 1930s.

Another historic building, located in the northern portion of the planning area, has been added to the California Historical Resource Information System since the original survey. It was a 1930s highway service station on Varner Road, formerly a part of the original Ocean-to-Ocean Highway. The site was reported to be in ruins at the time of its recordation. A field survey performed in 2001 found that the majority of the buildings recorded during the 1980s survey have been removed. All of the recorded historical sites are listed in the table below.

**Table OS-5**
**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 |

Source: California Historical Resource Information System
* These buildings are no longer present today.
** This building has been significantly altered.

In 2017, a Historic Resource Evaluation was prepared for the City with the focus of identifying historic property types. The Evaluation identified eight (8) historic contexts in which to categorize property types based on the City's historic growth patterns, including:

- Early Rural/Agricultural Economy, Ranches and Farms, 1910-1930
- Early Estates, 1920-1940
- Early Residential Development, 1927-1941
- Mid 20th Century Residential Development, 1942-1969.
- Cathedral City's Artists' Colony, 1932-1961
- Early Tourism, 1927-1950
- Entertainment, 1950s-1975
- Institutional, Civic and Religious, 1950s-1975

To be listed in the National Register of Historic Places, a property must not only be shown to be significant under the National Register criteria, but it also must have integrity. Many historic buildings in Cathedral City retain architectural integrity. However, many other buildings have undergone significance alterations, thus no longer retaining historic integrity. One of the goals of the City is to develop a historic preservation ordinance that establishes a Cathedral City Register of Historic Resources and the criteria and procedures to designate buildings, structures and objects for inclusion on that Register.

### Areas of Sensitivity for Historic Resources

Although the buildings identified in Table OS-5 have been, in many cases, either lost or altered over time, some geographic areas of the City can be considered sensitive for historic resources. Some parts of the City still contain buildings dating from the 1910s through the 1950s, including the downtown area, in the lettered streets; the Cree Road/Palm Valley School Road neighborhood on the north side of East Palm Canyon at the western City limit; the area along 20th Avenue in the northern end of the planning area, which was used for ranching; the Cove neighborhood; and the flatlands at Edom Hill and Flat top Mountain, which may contain 1950s era structures. Although none of these areas contains sufficient coherent historic significance to be designated a historic district, individual structures may prove to have significance.

## HISTORIC PRESERVATION

Various federal, state, and local government programs and legislation identify and recognize the importance of buildings, structures, objects, landscapes, and districts that meet specific criteria.

### Federal Programs

The National Park Service and the State Historic Preservation Officers (SHPO) of each state administer the Certified Local Government (CLG) program, which allows local governments to take a much more active role in historic and prehistoric preservation efforts in their communities. Local governments must meet certain requirements to qualify as a CLG, including adopting local ordinances which establish systems and standards for the preservation of resources. CLGs can also take advantage of technical assistance, professional assistance, and other state-wide programs. The City is not a Certified Local Government (CLG) and there are no immediate plans to pursue this certification.

The National Register of Historic Places is maintained by the U.S. Secretary of the Interior. It provides a national inventory of districts, sites, buildings, structures, objects, and other features of national, state, or local significance. Properties eligible for listing must meet certain criteria, which is determined by analyzing age, integrity and significance. There are no properties within the General Plan planning area currently listed on the National Register.[2] All nominations to the National Register of Historic Places that are located on the Agua Caliente Indian Reservation must be submitted to the Tribal Historic Preservation Office for review, approval and processing to the Keeper and conforms to the provisions of the ACBCI THPO Ordinance.

A number of other federal statutes provide programs for the preservation of historic and prehistoric resources, including tax credits for the certified rehabilitation of historic buildings, Community Development Block Grants, and the historic building reservation program which is part of the Transportation Equity Act of 1998.

### State Programs

The State Office of Historic Preservation manages California's CLG program, described above, and provides a number of services to participating local governments. In addition, the State established the California Register of Historical Resources in 1992, which is California's equivalent to the National Register of Historic Places. Two other registers are managed by the Office of Historic Preservation: the California Historical Landmarks register which identifies properties of statewide historic importance; and the Points of Historical Interest register which inventories properties of regional importance. Properties listed on these registers are eligible for property tax reductions, benefits provided by the California Heritage Fund, alternative building regulations under the Historic Building Code, seismic retrofit tax credits, and historic preservation bond measures. There are no properties in Cathedral City on either register at this time.[3]

[2] National Register Listed Properties, National Park Service, accessed March 2018.
[3] Listed California Historical Resources, California Office of Historic Preservation, accessed March 2018.

### Local Programs

Local governments may establish historic preservation ordinances to create a register of historic resources that meet criteria similar to those of the National Register of Historic Places and California Register of Historical Resources. In 2017, a Historic Resources Evaluation and Report was prepared for the City of Cathedral City to provide a framework for evaluation of potential historic resources with a focus on identification of historic property types within the City. The evaluation was conducted in accordance with National Register Bulletin 24, *Guidelines for Local Survey: A Basis for Preservation Planning*. The historic contexts and property types presented in the report were derived from research, community input, and field review of neighborhoods and properties. Currently there is no local historic resource preservation ordinance or historic resource designation program in Cathedral City; however, the Historic Resources Evaluation and Report will facilitate future local historic designation programs. All nominations to the National Register of Historic Places and the California Register of Historical Resources that are located on the Agua Caliente Indian Reservation must be submitted to the Tribal Historic Preservation Office for review, approval and processing and that conform to the provisions of the ACBCI THPO Ordinance.

## FUTURE DIRECTIONS

The lack of identified and recorded resources in Cathedral City does not mean that the City is devoid of these resources. The City's modest beginnings may not have resulted in the high-profile development of resort hotels and "movie star hangouts" which have been well documented elsewhere in the Valley, but the City's history is no less significant. Structures and properties within the City may bear preserving and must be identified early in the development process.

The City of Cathedral City has a rich and interesting history that provides a meaningful sense of heritage to residents and visitors. As the city continues to grow and develop, every effort should be made to identify and preserve the artifacts, places, and resources which have a relation to the City's history. Although some historic structures have been lost, the City should search for ways to protect and preserve its past. Many present-day structures, resources, and traditions play a role in the City's cultural values and identity. These resources should be identified and preserved for their importance to the City.

## GOALS, POLICIES, AND PROGRAMS

**Goal 1:** Identification, preservation, and revitalization of significant cultural, historical, and archaeological resources that are valuable to the City of Cathedral City's heritage.

**Policy 1**: The City will ensure that sites in archaeologically and historically sensitive areas are surveyed prior to development.

**Program 1.A**: Develop and maintain a database of archaeological and historic resources, incorporating information from the Eastern Information Center (EIC) at the University of California-Riverside, General Land Office Survey, site surveys conducted in the planning area, and other data sources.
Responsible Agency: Planning; Cathedral City Historical Society, ACBCI THPO,
**Schedule:** 2018-2020

**Program 1.B**: City staff shall require, early in the project review process, the preparation of focused cultural resource surveys in areas of known sensitivity.
**Responsible Agency**: Planning
**Schedule**: Ongoing

**Program 1.C**: The City shall adopt specific standards for the identification, preservation and maintenance of archaeological and historic sites. In consultation with the ACBCI THPO, these standards shall be developed to include professional qualifications for persons performing site-specific surveys.
**Responsible Agency**: Planning, ACBCI THPO
**Schedule:** 2020

**Program 1.D**: The City shall work closely with the Agua Caliente Band of Cahuilla Indians Tribal Historic Preservation Office to help assure that development near culturally sensitive areas conforms to the provisions of the Tribal Historic Preservation Management Plan and the ACBCI THPO Ordinance.
Responsible Agency: Planning, ACBCI THPO
Schedule: Continuous

**Program 1.E**: As part of the development review process, the City shall transmit development review applications to the Eastern Information Center for comment on potential impacts to historic resources.
**Responsible Agency**: Planning
**Schedule:** Ongoing

**Program 1.F**: In the event that archaeological resources are identified during construction, the City shall require that development cease, the appropriate Tribe shall be contacted, and if necessary a professional archaeologist shall be employed to examine and document the site, and in consultation with the Tribe the City shall determine subsequent actions.
**Responsible Agency**: Planning, ACBCI THPO, Tribes
**Schedule:** Ongoing

**Program 1.G:** The City shall develop a historic preservation ordinance, in consultation with the ACBCI THPO, that establishes a Cathedral City Register of Historic Resources and the criteria and procedures to designate buildings, structures, and objects for inclusion on that Register and consistent with the provisions of the ACBCI THPO Ordinance. The ordinance shall also include procedures for review of proposed changes to designated resources for appropriateness.
**Responsible Agency**: Planning, ACBCI THPO
**Schedule:** 2018-2025

**Program 1.H:** In the event that culturally significant resources are identified during construction, the City shall require that development cease, and the appropriate Tribe is contacted and, if deemed necessary, a cultural monitor shall be employed, if not already appointed per AB 52, to examine and document the site to determine subsequent actions.
**Responsible Agency**: Planning
**Schedule:** Ongoing

**Policy 2**
The City shall make every effort to protect sensitive archaeological and historic resources from vandalism and illegal collection.

**Program 2.A**: Mapping and site-specific information shall be kept confidential, and access shall be given only to those with appropriate professional credentials.
**Responsible Agency**: Planning
**Schedule:** Ongoing

**Program 2.B**: The preservation of sensitive sites or artifacts in-situ should be considered whenever feasible.
**Responsible Agency**: Planning
**Schedule:** Ongoing

**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.

**Program 3.A**: The City, Agua Caliente Band of Cahuilla Indians Tribal Historic Preservation Office and Historical Society shall cooperate to complete a city-wide cultural resource inventory to include both prehistoric and historic resources.
**Responsible Agency**: Planning; ACBCI THPO, Cathedral City Historical Society
**Schedule:** Ongoing

**Program 3.B**: The City will evaluate and consider participating in the Certified Local Government program in order to secure better local control over the management of cultural resources.
**Responsible Agency**: Planning; City Council
**Schedule**: Ongoing

**Policy 4**: Encourage public participation and appreciation of archaeological and historic resources.

**Program 4.A**: Continue to coordinate and cooperate with the Agua Caliente Band of Cahuilla Indians in the identification, preservation, and protection of sensitive Cahuilla Indian sites. The City will work with the THPO to educate the public.
**Responsible Agency:** Planning, ACBCI THPO
**Schedule:** Ongoing

**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.

**Program 5.A**: Provide property owners with information and guidance on property rehabilitation measures and financing alternatives.
**Responsible Agency**: Planning; Economic Development, ACBCI THPO
**Schedule:** Ongoing

# Water Resources Sub-Element

## PURPOSE

The purpose of Water Resources Element is to identify water resources within the planning area and serving the planning area, examine existing and projected supply and demand, evaluate opportunities for water protection and conservation, and provide policies and programs that ensure that City's water resources are sustainable and protected over the long-term. Water resource management must consider water quality, supply, and demand to minimize declines and degradation in surface and groundwater resources.

## BACKGROUND

The Water Resource Element addresses water availability, potential water resource hazards, and a range of issues that can result in water depletion, pollution, and impacts to the community. The Element is directly related to a number of other General Plan Elements, including: Land Use; Housing; Water, Sewer, and Utilities; Flooding and Hydrology; Police and Fire Protection; Emergency Preparedness; and Economic and Fiscal Health; and Environmental Justice.


The Water Resources Element has been developed to be consistent with other Elements and incorporates the requirements of California Government Code Section 65302(d). This Element also implements Section 21083.2(g) of the California Environmental Quality Act (CEQA), which empowers the community to require that adequate research and documentation be conducted when the potential for significant impacts to water and other important resources exists.

## REGIONAL AND LOCAL WATER RESOURCES

### Hydrologic Region and Watershed

Cathedral City is located in the Colorado River Hydrologic Region, which includes the Colorado River, one of the longest river systems in the State of California. About 85% of the Colorado River Hydrologic Region's urban and agricultural water supply comes from surface water deliveries from the Colorado River.[4]

The City and surrounding Coachella Valley lie within the Whitewater River Watershed, which is generally defined by the boundaries of the Whitewater Hydrologic Unit as described in the Water Quality Control Plan for the Colorado River Basin Regional Water Quality Control Board (Basin Plan). Much of the watershed consists of sparsely populated mountains, desert, and agricultural lands. Urbanized areas are principally located on the valley floor between Banning and Indio along Interstate 10, and from Palm Springs to Coachella along State Highway 111.

[4] California Water Plan Update 2005 (Chapter 11 Colorado River Hydrologic Region, Volume 3).

The watershed is generally bounded on the south by the San Jacinto and Santa Rosa Mountains, on the west by the Santa Ana Watershed, on the east by the Salton Sea, the Hexie and Cottonwood Mountains, and Southern Mojave Watershed, and on the north east by the little San Bernardino Mountains and Southern Mojave Watershed. The principal drainage through the watershed is the Whitewater River which emanates from the San Bernardino Mountains northwest of the Coachella Valley and drains southeast to the Salton Sea.

### Water Sources

The Coachella Valley relies on a combination of local surface water, groundwater, imported Colorado River (CR) water, State Water Project (SWP) exchange water, and recycled water to meet demand. The City is located within the western portion of the Colorado River Watershed, which locally drains into the Salton Sea. Our low desert locale is characteristically dry, with an annual average rainfall of less than 4 inches on the valley floor. Despite the limited surface water supplies, the Coachella Valley is underlain by a substantial subsurface groundwater basin, which has accumulated runoff over millions of years.

The Whitewater River Groundwater Basin generally extends from the Whitewater River in the northwest to the Salton Sea in the southeast. The aquifer is naturally subdivided by fault barriers into subbasins, which are further divided into subareas. Desert Water Agency (DWA) and the Coachella Valley Water District (CVWD) jointly utilize and manage a replenishment program for the local groundwater basin, the Upper Whitewater River Subbasin.

Estimates of groundwater storage in the Upper Whitewater River Subbasin range from 10.5 to 14.2 million acre-feet. In total, the subbasins underlying the Coachella Valley contain approximately 39.2 million acre-feet of water in storage, of which about 28.8 million are within the Whitewater River subbasin. Natural recharge from precipitation and mountain runoff, supplemented with artificial recharge from imported Colorado River and State Water Project water, and recycled water from treatment plants also provide water to the Coachella Valley.

During the twentieth century the Coachella Valley experienced a rapid depletion of its groundwater in storage. DWA and CVWD data show that significant increases in total water demand in the Coachella Water Valley occurred during over the decades from 92,400 acre-feet/year (AFY) in 1936 to 376,000 AFY in 1999. The increase in water demand reflects both municipal water and agricultural irrigation. This is consistent with the growth of two primary economic activities in the Coachella Valley: agriculture and tourism.

### Surface Water

Primary surface waterways include the Whitewater River and several streams, including Snow Creek, Falls Creek, and Chino Creek, as well as a number of smaller creeks and washes. Surface water supplies are affected by variations in annual precipitation; therefore, the annual supply is highly variable. The majority of local surface water is derived from runoff from the San Bernardino and San Jacinto Mountains, with lesser amounts from the Santa Rosa Mountains. This runoff either percolates in the streambeds or is captured in mountain-front debris basins where it recharges the groundwater basin.[5]

### Groundwater

The majority of the Coachella Valley's domestic water supply is groundwater extracted from subsurface aquifers. The availability of groundwater in an area depends largely upon its geologic, hydrologic, and climatic conditions. In the Coachella Valley, groundwater is found in perched, unconfined, and confined zones in the Coachella Valley Groundwater Basin which is divided into subbasins and subareas based on fault barriers, constrictions in the basin profile, and areas of low permeability. The Cathedral City General Plan planning area is underlain by the Whitewater River Subbasin and Mission Creek Subbasin.

[5] Coachella Valley Water Management Plan Update – Final Report – 2012.

### *Whitewater River Subbasin*

The Whitewater River subbasin is the primary groundwater repository for the Coachella Valley and the City of Cathedral City. Encompassing a major portion of the valley floor, it covers approximately 400 square miles and extends from the junction of Interstate-10 and State Highway 111, to the Salton Sea about 70 miles to the southeast. Its groundwater storage capacity is estimated at 28.8 million acre-feet in the first 1,000 feet below the ground surface.[6]

The subbasin is divided into four distinct subareas: Palm Springs, Thermal, Thousand Palms and Oasis. The Palm Springs subarea underlies most of the City, including lands generally west of Date Palm Drive. Lands generally east of Date Palm Drive are underlain by the upper Thermal subarea. The northernmost portion of the planning area, including lands north of Interstate-10 and south of the Indio Hills, is underlain by the Thousand Palms subarea.

#### Palm Springs Subarea

The Palm Springs subarea contains approximately 4.6 million acre-feet of groundwater in storage in the first 1,000 feet below the ground surface.[7] The subarea is largely comprised of alluvial fan deposits exceeding 1,000 feet in depth. It is naturally recharged by infiltration of runoff from the San Jacinto Mountains and the Whitewater River, and subsurface inflow from the San Gorgonio Pass and Garnet Hill subbasins.

#### Thermal Subarea

The Thermal subarea extends from eastern Cathedral City south to the Salton Sea. It contains approximately 19.4 million acre-feet of groundwater in storage in the first 1,000 feet below the ground surface, and is characterized by confined or semi-confined groundwater conditions with free moving water conditions in alluvial fans at the base of the Santa Rosa Mountains.[8]

CVWD well logs have identified two aquifer zones in the Thermal subarea. The lower aquifer zone is estimated to be at least 500 feet and possibly more than 1,000 feet thick, and is composed of Ocotillo conglomerate, which consists of gravels and silty sands interbedded with silt and clay. The upper aquifer zone is similar in composition to the lower aquifer zone, but not as thick. An aquitard layer, composed of fine-grained materials that slow the vertical flow of groundwater, separates the upper and lower aquifer zones and is estimated to be between 100 and 200 feet thick throughout much of the Thermal subarea.[9]

#### Thousand Palms Subarea

The Thousand Palms subarea contains approximately 1.8 million acre-feet of groundwater in storage in the first 1,000 feet below the ground surface.[10] It extends along the southerly edge of the Indio Hills and is small in comparison to the Thermal subarea. Its southwesterly boundary has been determined based on its distinctive groundwater chemical characteristics. Water in the Thousand Palms subarea is characterized by high concentrations of sodium sulfate, while water in other subareas of the Whitewater River subbasin is generally characterized by calcium bicarbonate. This is largely attributed to limited recharge to the Thousand Palms subarea. The subarea is recharged by limited runoff from the Indio Hills and experiences little, if any, inflow from other subareas or subbasins. Since there is little opportunity for intermixing or "dilution" by water of different chemical compositions, the native sodium sulfate is present in greater concentrations in the Thousand Palms subarea.

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6 Engineer's Report on Water Supply and Replenishment Assessment for the Lower Whitewater River Subbasin Area of Benefit, 2013-2014.

7 Engineer's Report on Water Supply and Replenishment Assessment for the Mission Creek Subbasin Area of Benefit, West Whitewater River Subbasin Area of Benefit and East Whitewater River Subbasin Area of Benefit, Coachella Valley Water District, 2017-2018.

8 Ibid.

9 Ibid.

10 Ibid.

### *Mission Creek Subbasin*

The Mission Creek subbasin underlies the northern portion of the City and Sphere of Influence, north of Interstate 10. It is bounded by the Mission Creek Fault on the north and east, Banning Fault on the south, San Bernardino Mountains on the west, and Indio Hills on the southeast. Groundwater flows in a southeasterly direction within the basin, which has a storage capacity of about 2.6 million acre feet, and is estimated to have recoverable water in the range of about 1 million acre feet.

## DOMESTIC WATER SERVICES

The Desert Water Agency (DWA) and the Coachella Valley Water District (CVWD) are responsible for providing domestic water to the General Plan planning area. Development east and north of the Whitewater River occurs within the service boundaries of CVWD, and development west and south of the river occurs within the service boundaries of DWA. These agencies utilize limited surface waters, and wells to extract groundwater from the Whitewater River subbasin. The Water, Sewer, and Utilities Element describes water services in the planning area.

## WATER DEMAND

### Historic Water Demand

Since the expansion of agricultural activities in the early 1900s, and the emergence of the Coachella Valley as a destination resort area with lushly landscaped golf courses and residential communities, depletion of the groundwater in storage has continued steadily.

Groundwater pumped from the Upper Coachella Valley (generally extending from Whitewater to Palm Desert) is typically used for domestic purposes and golf course irrigation. Water pumped from the Lower Coachella Valley (generally extending from La Quinta to the Salton Sea) is primarily used for domestic purposes and the irrigation of agricultural lands. In 1936, water demand for the Coachella Valley was approximately 96,300 acre-feet per year, of which 87% was agricultural water demand. By 1999, total water demand in the region increased almost seven-fold to 668,900 acre-feet per year, with an agriculture demand of 54% (358,700 acre-feet per year)[11]. Water demand in 2010 increased slightly to approximately 678,600 acre-feet, while the agricultural demand decreased to 317,400 acre-feet per year (47% of total demand)[12]. Although water demand continues to increase with population growth, valley-wide per capita demand agricultural water use has been steadily decreasing.

### Recent and Projected Water Demand

Water is supplied to Cathedral City by both the Coachella Valley Water District (CVWD) and Desert Water Agency (DWA). Table OS-6 and OS-7, below, show the recent and projected water deliveries (demand) within the entire CVWD and DWA service areas. The CVWD service area includes lands primarily within Riverside County but also within Imperial and San Diego Counties, and covers an area much larger than Cathedral City. DWA's service area covers the remaining portion of Cathedral City, the City of Palm Springs, and a portion of unincorporated Riverside County.

11 "Coachella Valley Integrated Regional Water Management Plan," prepared by Coachella Valley Regional Water Management Group, December 2010.

12 "Coachella Valley Water Management Plan Update Final Report," prepared by MWH and Water Consult, January 2012.

**Table OS-6**
**Total Recent and Projected Water Deliveries in CVWD Service Area by Land Use**
**(acre-feet per year)**

| Year | Potable Water Use | | | Non-Potable Recycled Water | Total Water Delivered |
|---|---|---|---|---|---|
| | Residential | Commercial[1] | Institutional | | |
| 2015 | 55,033 | 27,507 | 868 | 8,749 | 101,723 |
| 2020 | 67,800 | 33,900 | 1,100 | 14,300 | 128,900 |
| 2025 | 80,500 | 40,300 | 1,300 | 27,700 | 163,800 |
| 2030 | 93,300 | 46,700 | 1,500 | 30,800 | 188,500 |
| 2035 | 105,900 | 52,900 | 1,700 | 33,900 | 212,800 |
| 2040 | 115,000 | 57,500 | 1,800 | 36,300 | 230,600 |

Source: CVWD 2015 Urban Water Management Plan (Table ES-1 and ES-2)
1. Commercial includes "Landscaping" and "Other" water demands per Table ES-1
Note: Table does not include water losses.

**Table OS-7**
**Total Recent and Projected Water Deliveries in DWA Service Area by Land Use**
**(acre-feet per year)**

| Year | Potable Water Use | | | Non-Potable Recycled Water | Total Water Delivered |
|---|---|---|---|---|---|
| | Residential | Commercial | Institutional | | |
| 2015 | 17,800 | 7,700 | 1,200 | 4,045 | 33,136 |
| 2020 | 23,000 | 9,900 | 1,600 | 6,100 | 42,670 |
| 2025 | 24,100 | 10,400 | 1,600 | 7,000 | 45,266 |
| 2030 | 25,200 | 10,900 | 1,700 | 7,000 | 47,068 |
| 2035 | 26,300 | 11,400 | 1,800 | 7,000 | 48,870 |
| 2040 | 27,400 | 11,800 | 1,800 | 7,000 | 50,460 |

Source: DWA 2015 Urban Water Management Plan (Table IV-1)
Note: Table does not include water losses.

In 2009, the Water Conservation Act (SB X7-7) was passed under the Urban Water Management Plan Act (UWMP Act) requiring a 20 percent reduction in per capita water use by the year 2020. Both CVWD and DWA's UWMPs have set forth water conservation goals and programs that include increased general awareness of the need for water conservation, tiered billing rates that encourage conservation and wise water use, and turf buy-back programs that rewards property owners for replacing turf with drought-tolerant landscape materials.

## GROUNDWATER OVERDRAFT

Despite recent conservation efforts in the DWA and CVWD service areas, the continuing demand for groundwater has led to ongoing overdraft conditions. Well monitoring data indicate that from the 1950s to 1970s, water levels in the Upper Coachella Valley decreased by approximately 50 to 100 feet. Overdraft can result in significant adverse social, environmental and economic impacts, including the increased potential for land subsidence, increased infrastructure and energy costs associated with drilling deeper wells and installing larger pumps, and the threat of a diminishing long-term water supply.

To determine the extent of overdraft in the Coachella Valley, DWA and CVWD compare the change in freshwater storage in the groundwater subbasins over time. The change in freshwater storage is the difference between inflows and outflows of the basin, excluding inflows of poor quality water from the Salton Sea and irrigation flows that are induced by overdraft conditions. Total basin outflows from 1999 to 2035, are summarized in Table OS-8, below.

The upper Whitewater River subbasin, in particular, has been characterized by historically significant declining water table conditions. To more effectively manage this area, CVWD and DWA have designated the subbasin as a "Management Area" and have carefully monitored its inflow and outflow rates. The Management Area consists of the Palm Springs and Thousand Palms subareas of the Whitewater River subbasin, and that portion of the Thermal subarea experiencing a significantly declining water table. All of these subareas underlie, to some extent, the Cathedral City General Plan planning area. Within the Management Area, overdraft is estimated at 35,621 acre-feet per year, or 0.32% per year.

**Table OS-8**
**Comparison of Historical and Future Inflows and Outflows, 1936-2035**
**(acre-feet)**

| Water Balance Component | Total Flows 1936 | Total Flows 1999 | Total Flows 2015 | Total Flows 2035 |
|---|---|---|---|---|
| **Inflows** | | | | |
| Natural Recharge | 32,600 | 16,800 | 48,900 | 48,900 |
| Agricultural Returns | 37,200 | 130,700 | 130,900 | 131,300 |
| Domestic Returns | 4,300 | 59,200 | 78,200 | 107,200 |
| Golf Course Returns | 500 | 39,300 | 51,400 | 51,400 |
| Wastewater Percolation | 200 | 16,500 | 17,300 | 25,800 |
| SWP Recharge | 0 | 88,800 | 49,000 | 49,000 |
| Inflows from outside area | 12,900 | 11,500 | 11,400 | 11,400 |
| Inflows from Upper Valley | 59,100 | 29,400 | 21,600 | 7,200 |
| **Total Inflows** | **146,800** | **392,200** | **408,100** | **432,200** |
| **Outflows** | | | | |
| Groundwater Pumpage | 92,400 | 376,100 | 450,500 | 555,100 |
| Flows to Drains | 3,200 | 55,800 | 45,300 | 34,200 |
| Evapotranspiration | 21,100 | 4,900 | 4,800 | 4,600 |
| Net Flow to Salton Sea Outflows | 5,300 | -400 | -1,300 | -2,200 |
| to Lower Valley | 59,100 | 29,400 | 21,600 | 7,200 |
| **Total Outflows** | **181,100** | **465,800** | **520,900** | **598,900** |
| Annual Change in Storage | -34,300 | -73,600 | -112,200 | -166,700 |
| Annual Change in Freshwater Storage | -41,800 | -136,700 | -2,948,200 | -5,768,500 |
| Cumulative Change in Storage since 1936 | -34,300 | -1,421,400 | -191,000 | -254,700 |
| Cumulative Change in Freshwater Storage since 1936 | -41,800 | -4,684,000 | -7,376,200 | -11,866,500 |

Source: Coachella Valley Final Water Management Plan (2002). "Coachella Valley Water Management Plan 2010 Update Final Report," prepared by MWH and Water Consult, January 2012.

The Coachella Valley Water Management Plan (CVWMP) is a baseline document and comprehensive guide for CVWD and DWA to identify the significant groundwater overdraft that has occurred over decades and to project future groundwater overdraft through 2035. The 2002 CVWMP also guides CVWD and DWA efforts to eliminate overdraft, prevent groundwater level decline, protect water quality, and prevent land subsidence.

As shown in Table OS-8 above, total outflows are projected to increase to 598,900 acre-ft/yr by the year 2035 in the 2002 CVWMP. The 2002 CVWMP was updated in 2010 to reduce these projected water outflows and in response to changes in the water planning environment such as increased growth projections and reduced State Water Project (SWP) delivery reliability. The 2010 CVWMP incorporated the following water conservation elements to reduce the water consumption (outflows et al) projected in the 2002 CVWMP:

- Increase surface water supplies for the Valley from outsides sources;
- Substitution of surface water supplies for groundwater (source substitution);
- Groundwater recharge; and
- Monitoring and evaluation of subsidence and groundwater levels and quality to provide the information needed to manage the Valley's groundwater resources.

From these elements, source substitution is an important tool to eliminate groundwater overdraft and ensure full use of the Valley's available surface water supplies. Table OS-9 shows the ranges of reduction in groundwater overdraft due to source substitution programs.

**Table OS-9**
**Range of Groundwater Pumping Reductions Due to Source Substitution**

| Action | Low Range (AFY) | High Range (AFY) |
|---|---|---|
| Mid-Valley Pipeline | 37,000 | 52,000 |
| Agricultural Canal Water Conversion | 5,300 | 32,000 |
| Oasis Area Conversion to Canal Water | 0 | 27,000 |
| East Valley Golf Course Conversion | 43,900 | 51,700 |
| West Valley Golf Course Conversion | 15,200 | 17,800 |
| Canal Water for Indoor Urban Use – East Valley | 48,000 | 90,000 |
| Canal Water Use for Outdoor Use – East Valley | 95,000 | 115,000 |
| **Total** | **244,400** | **385,500** |

Source: "Coachella Valley Water Management Plan 2010 Update Final Report," prepared by MWH and Water Consult, January 2012.

Per 2010 CVWMP, construction of Mid-Valley Pipeline, extension of the Canal water delivery system, and use of Canal water for East Valley Golf Course will reduce the groundwater by to 244,400 in 2045.

The average overdraft for the period 2003 through 2016 was 22,000 acre-feet per year (AFY) (Chart OS-1) which is significantly less than the 2010 Overdraft Status of 70,000 AFY for the period from 2000-2009. This loss in storage is largely attributed to low replenishment at the Whitewater River Groundwater Replenishment Facility (GRF) for the period 2014 through 2016 due to the recent drought. However, implementation of the programs recommended in the 2010 CVWMP Update is expected to result in elimination of storage losses by about 2022. [13]

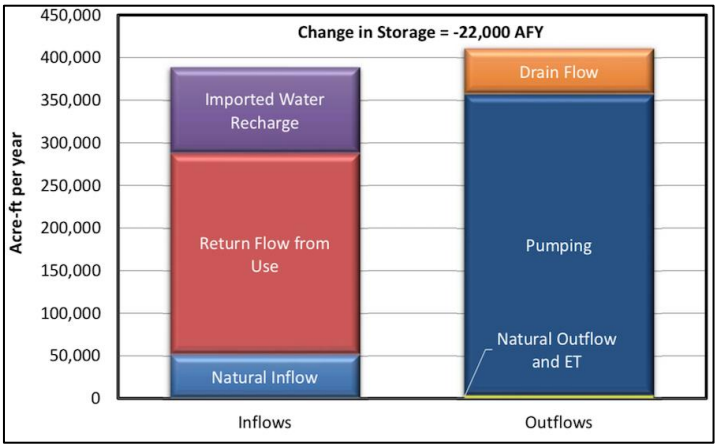



Chart OS-1: Average Groundwater Balance 2003 to 2016.

In 2017, a wet year, total inflows (489,272 AF) were higher than the total outflows (186,680 AF) of the Whitewater River Subbasin due to significant deliveries of replenishment water. Without artificial replenishment, the annual reduction in stored groundwater within the West Whitewater River Subbasin in 2017 would have been approximately -83,402 AF, compared to the annual balance of approximately 302,592 AF.[14] Continued groundwater replenishment is necessary to either eliminate or reduce overdraft in the future.

13 Coachella Valley Water Management Plan 2016 Status Report.
14 CVWD Engineer's Report on Water Supply and Replenishment Assessment 2018-2019 - Mission Creek, West Whitewater River, and East Whitewater River Subbasin Areas of Benefit.

## GROUNDWATER REPLENISHMENT PROGRAM

To meet anticipated growing regional demand for domestic water, CVWD and DWA have contracted for State Water Project (SWP) water to supplement groundwater resources. These water contracts entitle CVWD and DWA to water from the SWP. However, SWP facilities are located west of the Coachella Valley and are not accessible for delivery of SWP water. While awaiting SWP system interconnection, CVWD and DWA have entered into a water exchange agreement with the Metropolitan Water District of Southern California (MWD).

The agreement allows CVWD and DWA to exchange their SWP entitlements for like-amounts of Colorado River water, which is transported to the Coachella Valley via MWD's Colorado River Aqueduct. The aqueduct passes through the northern portion of the valley, and is tapped where it crosses the Whitewater River. Exchange water is then diverted to a series of spreading ponds near Whitewater, where it percolates to replenish groundwater supplies. A substantial amount of Colorado River water is also transported to the lower valley via the Coachella Branch of the All- American Canal and serves as an important source of water for agricultural and other irrigation uses.

Since the introduction of the artificial recharge program in 1973, more than 343,398 acre-feet/year of Colorado River water has been diverted to recharge the East Whitewater River subbasin. Temporary halts or severe reductions in recharge waters are necessary when there is inadequate rain or snowfall in the western Sierra Nevada Mountains.

Despite the addition of recharge waters to the groundwater subbasins, groundwater levels in the Coachella Valley continue to decline. DWA and CVWD have sought additional and reliable sources of supply of domestic water, including increasing its Colorado River water entitlements.

In 2003, the Quantification Settlement Agreement (QSA) was signed between CVWD (and indirectly DWA), the Imperial Irrigation District (IID), and MWD, supplementing the 1931 agreement. The QSA provided CVWD with an initial base allotment of 330,000 acre-feet/year, adjusted to 301,000 acre-feet/year. In accordance with the QSA, CVWD has entered into water transfer agreements with MWD and IID that increase CVWD supplies by an additional 158,000 acre-feet/year, which will be effective by 2026.[15]

To alleviate groundwater overdraft, CVWD and DWA oversee three groundwater replenishment facilities. Artificial replenishment, or recharge, is one of the most effective methods available for preserving local groundwater supplies, reversing aquifer overdraft and meeting demand by domestic and commercial water consumers.

CVWD and DWA's groundwater replenishment program has percolated 650 billion gallons of water back into the aquifer to date.[16] This has been possible thanks to a supply of imported water from the Sacramento Bay Delta and the Colorado River, as well as entitlements to captured snow melt from the San Gorgonio Mountains.

15 Engineer's Report on Water Supply and Replenishment Assessment for the Mission Creek Subbasin Area of Benefit, West Whitewater River Subbasin Area of Benefit and East Whitewater River Subbasin Area of Benefit, Coachella Valley Water District, 2018-2019.

16 Water Wise - Coachella Valley Water District (2017).

## RECYCLED WATER

CVWD and DWA have implemented programs to allow tertiary (third stage) treated wastewater to irrigate golf courses, municipal greenbelts, and other landscaped areas. Wastewater typically undergoes two stages of treatment before being released to percolation ponds and being reintroduced into the groundwater table.

### CVWD Recycled Water

CVWD operates six (6) Water Reclamation Plants (WRPs). That closest to the City is WRP-10, which currently has capacity to generate up to 15 mgd of tertiary treated water. These facilities provide tertiary treatment, and recycled water is distributed to area golf courses and other large landscape customers. WRP-9 is located in Palm Desert and its secondary effluent is used to irrigate a portion of a golf course.

### DWA Recycled Water

In 1989, DWA constructed its Recycled Water Treatment Facility (RWTF) with an initial capacity of 5.0 million gallons per day (mgd). The facility was expanded in 1995 to its present capacity of 10.0 mgd (ultimate capacity of 15.0 mgd). DWA's recycled water system facilities consist of the RWTF, two booster pumping plants, and transmission pipelines. At times of high demand, particularly in the summer months, DWA has supplemented the recycled water supply with potable water. The current recycled water demand is about 4,600 AF/yr, which includes any supplemental potable water (prior to 2015) or non-potable shallow groundwater (beginning early 2015) used to supplement recycled water in meeting said demand.[17]

## WATER CONSERVATION

Both DWA and CVWD work closely with the cities in their service areas to limit the amount of water that is used for domestic use and landscaping. Both agencies maintain ongoing turf rebate program (when funds are available) to encourage homeowners to replace turf with low-water demand landscaping. As a result of the adoption of statewide indoor water conservation measures requiring low flush toilets, shower and faucet flow restrictors, and other devices, the average amount of water used inside homes has been significantly reduced.

CVWD adopted water budget-based tiered rates in 2010 to discourage excessive water use and implemented a 20 percent urban water use reduction target by 2020 per the Water Conservation Act SB-X7-7. CVWD also works with the golf course industry to reduce water use at local courses. In 2014, CVWD began a partnership with the Southern California Golf Association and formed the Golf and Water Task Force to reduce overall golf course water use by 10 percent. Key activities being implemented include the establishment of water budgets to limit golf course groundwater pumping and a region-wide golf course turf reduction program. With the large number of communities constructed around golf courses throughout its service area, these conservation programs have reduced impacts of development on the aquifer.

DWA has also implemented several water conservation measures and public outreach programs since 2010. They include water waste prevention ordinances, metering, conservation pricing, public education and outreach, and programs to assess and manage distribution system real loss. DWA also provides a “Hospitality Conservation Program” which is aimed at helping local hotels reduce their water use. This program is free for hotels and provides room cards, door hangers, and pillow cards that allow guests to voluntarily reuse towels and choose when to have their sheets changed.

[17] DWA Urban Water Management Plan (2015).

## WATER QUALITY

Water quality in the Coachella Valley is generally good to excellent. According to the annual CVWD Water Quality Report, the detected parameters (e.g. arsenic, barium, chloride, chromium, copper, Dibromochloropropane (DBCP), pH, sodium, and sulfate) do not exceed Maximum Contaminant Levels (MCL) for 2017.[18] Exceptions are primarily limited to perched and semi-perched water tables occurring in the lower valley, where on-going crop irrigation has increased total dissolved solids. Groundwater quality can be affected by a number of things, including the type of water-bearing materials in which the water occurs, water depth, proximity to faults, and presence of surface contaminants.


High TDS concentrations are typically detected near major faults, and have been observed along the San Andreas fault system. In the vicinity of the fault zone separating the Thousand Palms subarea from the Thermal subarea, for example, TDS concentrations have exceeded 1,000 mg/L. However, other evidence indicates that high TDS concentrations may also be associated with the importation of Colorado River water, which is about three times higher in total dissolved solids than natural upper Whitewater River groundwater. The following table illustrates the relative quality of surface water recharging the subbasin, including that imported from the Colorado River.

Mineral content has also increased in the groundwater basin through the importation of Colorado River recharge water, as well as through natural surface water runoff, wastewater percolation, the application of fertilizers, and intrusion of the Salton Sea into the southeastern-most portion of the groundwater basin. CVWD estimates that the quantity of salts added to the groundwater basin increased from approximately 12,000 tons per year in 1936, to about 417,000 tons per year in 2015. For 2035, the projected salt addition to the groundwater basin is 504,000 tons per year.[19] The majority of salts (65%) are associated with agricultural irrigation in the east valley.

## WATER POLLUTION

City and regional water resources can be impacts by a wide range of contaminants, beyond the salts and minerals associated with some sources used for irrigation and groundwater recharge. These include high levels of naturally occurring salts and metals associated with nearby faults, particularly north of the Mission Creek fault. However, in the western Coachella Valley and the City, the primary contaminant encountered has been inadequately treated waste from domestic and commercial on-lot septic tanks. Existing and long-term threats to local and regional water quality are further discussed below.

### Water Quality and Septic Tanks

In the past, developments in the cove area were connected to on-lot septic tanks. Use of septic tanks in those areas were contaminating the groundwater supplies. The city passed Ordinance 572 § 1 in 2000 to prohibit issuing permits for septic tank installations in the city. City's ordinance (Ord. 626 § 1, 2006) bans septic tank use in all areas of the city and requires developers to install community sewer improvements that subsequently benefit other properties located between the sewer improvements and the point of connection to an existing main, the developer shall be eligible to enter into a reimbursement agreement with the city. The ordinance included provisions to fine homeowners that are not connected to the sewer system.

18 CVWD Water Quality Report (2016-2017 Annual Review Report).
19 Coachella Valley Final Water Management Plan - Table 4-7 (2002).

In 2008, the City initiated the Cove Improvement District Sewer and Street Project, a two-phase project that would connect Cove residences to the sewer system. All Cove residences are now connected to the sewer system.

The Regional Water Quality Control Board issued a National Pollutant Discharge Elimination System (NPDES) Permit (Municipal Permit) to the municipalities within Riverside County, including the City of Cathedral City. The minimum requirement of the Municipal Permit is to ensure that pollutants discharged from storm drain systems owned and operated by the co-permittees are reduced to the maximum extent practicable. The Municipal Permit outlines the individual responsibilities of the co-permittees, including but not limited to, the implementation of management programs, best management practices (BMPs), and monitoring programs. NPDES regulations also consider the need to conserve natural areas, minimize impervious surfaces, and encourage the use of native or drought-tolerant plant material in landscaping.

To protect water quality and minimize the potential water pollution, water quality regulation was initiated in the 1960s and 1970s with the passage of California's Porter-Cologne Water Quality Control Act and the federal Clean Water and Safe Drinking Water Acts, which prevent discharge of pollutants into water bodies and control the quality of water that comes out of the tap. The State Water Resources Control Board and nine regional boards set and enforce these standards. In the following decades, state and federal laws and regulations have been passed to address additional challenges, including the use of pesticides and other toxic substances, water pollutants from farming, and abandoned hazardous waste sites.

The City of Cathedral City has adopted a Municipal Code 15.10.040 (Discharge of Pollutants) to prohibit any potential pollutants into the local drain system.

## COMMUNITY RESILIENCE

Community resilience, as it pertains to water supply and water quality, is a function of supply, behavior, governance, and public policy interventions, in addition to population and its redistribution trends. To assure long-term water resilience, the City should work with local water purveyors to:

- Conduct routine water supply assessments and reduce risks of groundwater overdraft,
- Plan for and practice responding to emergencies,
- Monitor systems for contaminants,
- Manage the water resources effectively,
- Protect water quality from septic tank usage and related potential groundwater contaminations.

### CVWD Water Shortage Contingency Plan

The CVWD developed its Water Shortage Contingency Plan during the 1986-92 drought pursuant to the requirements of the Government Code 10632.[20] The Plan was implemented through a series of ordinances with phased water use restrictions and a drought penalty rate structure:

- Ordinance 1414 – Stage 2 – 10% Mandatory Reduction;
- Ordinance 1419 – Stage 3 – 36% Mandatory Reduction;
- Ordinance 1422 – Stage 3 – Adopt Additional Watering Restrictions; 36% Mandatory Reduction; and
- Ordinance 1426 – Stage 3 – Replace Previous Ordinances, 32% Mandatory Reduction.

After the State Water Resources Control Board's (SWRCB's) adoption of revised regulations in May 2016, CVWD repealed these ordinances and adopted Ordinance 1422.3 which establishes Stage 2 restrictions that remains in effect until the SWRCB rescinds its emergency regulations. The key element of CVWD's water shortage contingency plan is an ordinance with phased water use restrictions and a drought-related rate structure as summarized in Table OS-10.

[20] CVWD's 2015 Urban Water Management Plan.

**Table OS-10**
**Coachella Valley Water District's**
**Water Shortage Contingency Plan Summary**

| Stage* | % Supply Reduction | Water Supply Condition |
|---|---|---|
| I | 10 | Normal water supplies |
| II | 10 | 10% reduction in total groundwater and imported supplies relative to long-term average conditions |
| II | 20 | 25% reduction in total groundwater and imported supplies relative to long-term average conditions |
| IV | 50 | 50% reduction in total groundwater and imported supplies relative to long-term average conditions |

* Stage 1 is voluntary reduction, stages 2 through 4 are mandatory reductions. The Stage 2 and 3 reduction targets are flexible and may be adjusted by CVWD Board action based on actual supply conditions.
Source: 2015 UWMP, Table ES-6.

### DWA Water Shortage Contingency Plan

DWA has established five stages of conservation and water use restrictions to be evoked during water supply emergencies. The stages involve voluntary and mandatory conservation measures and restrictions, depending on the causes, severity, and anticipated duration of the water supply shortage. DWA's contingency stages are provided below.

**Table OS-11**
**Desert Water Agency's Water Shortage Contingency Plan Summary**

| Stage* | Water Supply Conditions | Supply Shortage (%) | Reduction Goal (%) |
|---|---|---|---|
| 1. Voluntary Conservation and Prohibited Uses | Normal Conditions | 0 | 5 |
| 2. Alert: Mandatory Conservation Measures | Threatened or existing water supply shortage | 10 | 10 |
| 3. Warning: Mandatory Conservation Measures | Water shortage prevents demands from being met | 20 | 20 |
| 4. Emergency: Mandatory Conservation Measures | Water shortage requires significant use reduction | 25 | 25 |
| 5 .Water Allocations | Water shortage requires allocation of supplies | 50 | 50 |
| * DWA 2015 Urban Water Management Plan (2016) | | | |

## FUTURE DIRECTIONS

The wise use and conservation of water resources will continue to be a central theme of community development planning in southern California. Cathedral City plays an important role in the long-term protection of this valuable resource. The city and local water agencies have developed programs intended to increase the use of efficient landscape and irrigation design, water efficient appliances and fixtures, and recycled water. Effective storm water management programs and the protection of local mountain watersheds will also assure preservation of a viable source of groundwater. The City must continue to work closely with neighboring communities and local water purveyors to assure a healthful, long-term supply of water.

## GOALS, POLICIES, AND PROGRAMS

**Goal 1:** A sustainable, long-term supply of clean and healthful domestic water available for existing residents and future growth.

**Policy 1:** The City shall require the use of water-conserving appliances and fixtures in all new development, as mandated by State law.

**Program 1.A:** Require the installation and application of water-conserving technologies, in conformance with Section 17921.3 of the Health and Safety Code, Title 20, California Administrative Code Section 1601(b), and other applicable sections of Title 24 of the Public Code.
**Responsible Agency:** Public Works, Planning
**Schedule:** Continuous

**Program 1.B:** Provide information to developers, contractors, property owners and other appropriate parties on the usage and benefits of water conserving bathroom fixtures.
**Responsible Agency:** Planning, Building
**Schedule:** Continuous

**Policy 2:** Continue to encourage the use of low water-consuming, drought-tolerant landscape plantings as a means of reducing water demand.

**Program 2.A:** The City shall maintain, update and fully implement a water conserving landscape ordinance, which requires the use of natural and drought-resistant planting materials and efficient irrigation systems in new development.
**Responsible Agency:** Planning
**Schedule:** Ongoing

**Program 2.B:** Coordinate with the Coachella Valley Water District and Desert Water Agency to expand and strengthen educational materials and programs that inform residents of the methods and benefits of water-saving techniques available.
**Responsible Agency:** Planning, Building, CVWD, DWA
**Schedule:** Continuous

**Policy 3** Encourage the expanded use of tertiary treated wastewater as a means of reducing impacts of development on groundwater resources.

**Program 3.A** Coordinate with CVWD and DWA regarding the continued use and future expansion of recycled and reclaimed wastewater to serve new and existing development projects.
**Responsible Agency:** Planning, Public Works, CVWD, DWA
**Schedule:** Continuous

**Policy 4:** The City shall require the connection of all new development to the community sewer system.

**Policy 5:** The City shall require existing development currently connected to septic tanks to connect to the sewer system when it becomes available.

**Program 5.A:** Coordinate with CVWD and DWA regarding the feasibility and financing of extending sewer facilities to the unsewered areas of the City.
**Responsible Agency:** City Manager's Office, Public Works, CVWD, DWA, CRWQCB
**Schedule:** Continuous

**Policy 6:** The City shall coordinate with other appropriate agencies to minimize the potential for groundwater contamination within and in the vicinity of the city.

> **Program 6.A:** Coordinate with the Coachella Valley Water District, Desert Water Agency, California Regional Water Quality Control Board and other appropriate agencies to share information on potential groundwater contaminating sources, and develop and maintain a system of record and information sharing with these agencies.
> **Responsible Agency:** City Manager's Office, Planning, CVWD, DWA, CRWQCB
> **Schedule**: Continuous
>
> **Program 6.B:** Evaluate all proposed land use and development plans for their potential to create groundwater contamination hazards from point and non-point sources, and confer with other appropriate agencies to assure adequate review.
> **Responsible Agency**: Planning, CVWD, DWA, CRWQCB
> **Schedule**: Continuous

**Policy 7:** Establish and enforce guidelines for the development and maintenance of project-specific, onsite storm water retention/detention facilities in a manner consistent with local and regional drainage plans and community design standards.

**Policy 8** The City shall protect aquifer recharge facilities from degradation of water quality and reduction of recharge.

**Policy 9:** Maximize stormwater filtration and/or infiltration in areas that are not subject to high groundwater by maximizing the natural drainage patterns.

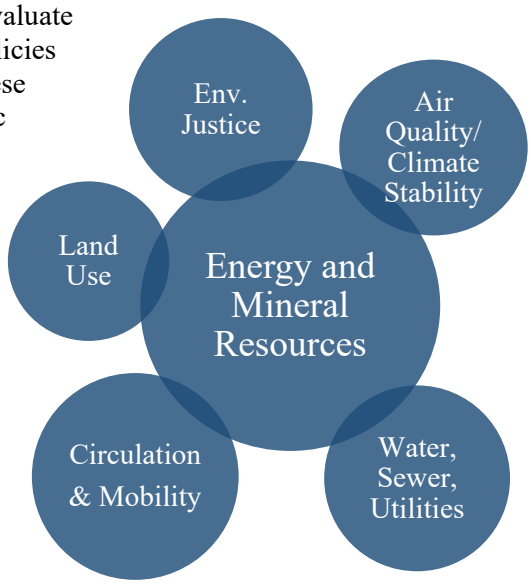
**Policy 10:** Require new development to protect the quality of water bodies and natural drainage systems through site design, source controls, storm water treatment, runoff reduction measures, and best management practices (BMPs).

**Policy 11:** Require new development to minimize the use of directly connected impervious surfaces and to retain stormwater run-off caused from the development footprint at or near the site of generation.

# Energy and Mineral Resources Sub-Element

## PURPOSE

The purpose of the Energy and Mineral Resources Element is to evaluate existing energy and mineral resources in the City, and establish policies that direct the City's development, use, and management of these resources. Energy and mineral resources can facilitate economic development and growth, and present opportunities for energy innovation and conservation. Traditional energy resources currently utilized are in limited supply and the extraction and use of these resources have significant impacts on the environment. Energy shortages and increasing utility rates have become a serious problem in California. This Element is intended to be responsive to the community's dependence on these resources, and to identify effective and safe alternatives and opportunities for more local control.




This Element addresses the community's continued dependence on limited fossil fuel and other finite resources, and the need for evolving and innovative local and regional energy policy. Basic policies address the wise management of the City's mineral resources, and promotion of practices and technologies that result in greater conservation and energy efficiency. This element also guides the City's ongoing shift to reliable energy resources, including solar and wind. In this regard, the Element sets forth goals, policies and programs that provide opportunities for more local control of energy production and distribution, while not negatively affecting its long-term growth.

## BACKGROUND

The Energy and Mineral Resources Element is closely related to several other General Plan Elements, including Land Use, Circulation and Mobility, Environmental Justice, Air Quality and Climate Stability, and Water, Sewer, and Utilities. To a lesser degree, this Element is also related to the Housing, Community Design, and Economic and Fiscal Health Elements. California Code Section 65560(b) directs public agencies to preserve energy and mineral resources. Government Code Section 65302(d) mandates the inclusion of resource conservation in General Plans and identifies issues to be addressed in this Element, such as reclamation and resource degradation.

## ENERGY RESOURCES

### Non-Renewable Energy Sources

*Coal*

Coal is fossilized plant material preserved by burial in sediments and altered by geological forces that compact and condense it into a carbon-rich fuel. Coal was a prominent source of energy between 1870 and 1950. Coal is still widely used today for electric power generation, in the making of steel and as a chemical feedstock. The burning of coal to generate electricity is one of the largest sources of air pollution in the US, and the public health and environmental costs of coal extraction and use are great.

*Natural Gas*

Over the past few decades, the development and use of natural gas has grown significantly, which has fed demand and encouraged the application of new technologies, including fracturing the geological formations in which natural gas is found, a process called "fracking". Natural gas continues to be convenient, relatively cheap, and clean burning when compared to coal. Although natural gas reserves will last for many decades, they are finite and as they become scarcer, their prices will rise. Natural gas is easy to transport in large quantities, and major pipelines pass through the Coachella Valley and supply the City and other communities (also see below).

## RENEWABLE ENERGY SOURCES

### Geothermal

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, 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, are located on private lands and are 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 500 megawatts of geothermal electric power have been developed.

### Wind

The region and portions of the City have seen major development 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 Gorgonio Pass and into the valley. Today, the San Gorgonio Pass is home to one of the nation's largest wind farms. More than 2,299 wind turbines, with a total capacity of 665 megawatts.[21] Eight wind turbines currently operated in the 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

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 a wide array of covered parking structures. The 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.

[21] United States Wind Turbine Database - USGS Energy Resources, July 2018 https://eerscmap.usgs.gov/uswtdb/viewer/#14.75/33.88239/-116.46539

## ENERGY PROVIDERS

### Southern California Edison

Southern California Edison (SCE) is the electric service provider for the City of Cathedral City (also see the *Water, Sewer, and Utilities Element*). High voltage transmission lines deliver power to substations where power is stepped down and distributed through lower voltage lines. Residences and businesses then receive power through a transformer, which reduces voltages to safe levels. High voltage transmission lines extend through the City north of, and roughly parallel to, Interstate-10. This corridor is designated Open Space-Other in the General Plan land use plan to protect its use as an important local and regional utility resource.

### The Gas Company

Natural gas is provided to the City by The Gas Company. The Coachella Valley contains no retrievable sources of natural gas. Rather, natural gas supplies are transported from Texas to the Coachella Valley through three east-west trending gas lines, which cross the valley near Interstate-10 and continue west to Los Angeles (also see the *Water, Sewer, and Utilities Element)*. Two entities have taken the lead in the research, development, and implementation of new energy resource programs in the Valley: SunLine Transit Agency and College of the Desert (COD). Several years ago, SunLine converted all its vehicles to compressed natural gas, including its buses, vans and service vehicles. Since the conversion, city vehicles, post office delivery trucks and taxicabs have also been converted to compressed natural gas. The conversion from diesel fuel to compressed natural gas represents an important reduction in air emissions generated by vehicles. COD has integrated renewable energy technologies, primarily photovoltaic (PV), on campus buildings and parking structures; the application of solar thermal technology and passive solar design has also been implemented throughout the campus.

Baseline analysis conducted for the Year 2010 and presented in the City's Energy Acton Plan, indicates that the municipal (City government) consumption of natural gas totaled 8,899± therms. In 2010, the city fleet was comprised of 143 vehicles and was driven 1,173,258 miles and consumed 67,845 therms bringing the municipal total 2010 natural gas consumption to 76,744± therms. By comparison, in 2010 the commercial sector consumed 1,255,176± therms and the residential sector 6,414,659± therms. Residential use of natural gas is by far the highest and provides significant opportunities for conservation.

## ENERGY USE AND CLIMATE CHANGE

One of the most pressing problems locally and globally is the reduction in the emission of greenhouse gases (GHGs), which are contributing to the warming of the planet and causing wide spread climate change. Fossil fuel use, including coal, oil and natural gas, comprises the largest source of GHGs. The City has decided to "act locally" to help address this global crisis, which has included taking a measure of where the City sits with regard to GHG emissions. In 2013, the City of Cathedral City completed its first Greenhouse Gas Inventory. The major findings are as follows:

- Communitywide emissions in 2010 total 236.83 tonnes CO2e
- This level is 29.1% above 1990 target levels referenced in AB 32 – 183,424 tonnes CO2e.
- The 2010 municipal contribution to community's emissions was 1.3% or 3,104 tonnes CO2e.
- At 4.6 tonnes per capita, Cathedral City has low emissions relative to its neighboring cities.
- City transportation emissions are comparatively high due to a larger segment of Highway 111.

Cathedral City is an active member of the Desert Cities Energy Partnership (DCEP), a partnership of Southern California Edison (SCE), Southern California Gas Company (SCG), Imperial Irrigation District (IID), the Agua Caliente Band of Cahuilla Indians, and the cities of Blythe, Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, and Palm Springs, managed by the Coachella Valley Association of Governments (CVAG).

As part of DCEP activities, CVAG received Southern California Edison "Flight 5.6" funding for the Strategic Plan Strategic Program. Developing greenhouse gas inventories for DCEP project cities programmatic activities proposed by and funded by SCE. This umbrella of sustainably is known and called the Green for Life project.

## ENERGY REDUCTION AND CONSERVATION PROGRAMS

The City continues to develop and participate in a wide variety of energy management and conservation programs. These include the innovative *Green for Life* program, which provides the City and its businesses and residents with data, information and resources to reduce energy use and associated costs (also see the Health and Sustainable Community Element). Other related City programs include the *Property-Assessed Clean Energy* (PACE) program that facilitates financing of energy conservation and production for residences and businesses. The City's *Climate Action Plan* (CAP) and *Energy Action Plan* (ECP) include a wide range of energy management, conservation and production programs that serve to reduce energy use, costs and GHG emissions, and strengthen the local economy.


*SCE Energy Programs*
SCE offers rebates for the installation of energy efficient equipment, including air conditioning units, refrigerators and even light bulbs. For commercial customers, the Automatic Power Shift program allows substantial savings from June through September, in exchange for allowing SCE to remotely cycle-off selected air conditioning units during peak periods of heavy use and potential power outages.

*The Gas Company Programs*
The Gas Company services include detailed technical assistance and incentive programs that address a wide range of use issues, land use planning, service extension, and use-specific technical consulting/problem solving. In addition, The Gas Company has developed a wide range of energy management, conservation, and equipment retrofit programs for its customer base. These programs include core nonresidential customers equipment rebates of up to 20% of the cost of qualifying equipment. Assistance in facilities planning and analysis is also provided to maximize energy efficiency and cost-effective equipment purchases and operations.

## COMMUNITY RESILIENCE

Sustainability and resilience are recurring themes throughout the General Plan. While the focus has been on sustainable energy and climate change, resiliency also has an economic side and benefit that ranges from increases in disposable household income to the creation of local jobs supporting the solar and wind industries. A resilient community and economy is one that is served by a diversity of energy sources that have no or minimal impacts on the environment. Cathedral City will continue to make investments in locally grown renewable energy and energy efficiency at the municipal, business and residential level.

## MINERAL RESOURCES

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 on the environment. Surface mining, for example, can scar the landscape for hundreds of years if a mine is not adequately reclaimed.

### Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) of 1975 was established to deal with these issues. Its objective is twofold: acknowledging that the extraction of minerals is essential to maintaining a strong economy, while concurrently addressing environmental protection and protection of public health and safety from mining impacts.

### 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 land where significant mineral deposits are present, 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.

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). 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 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.

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

The Indio Hills area north of the community of Thousand Palms and near the city's sphere-of-influence (SOI), contains an area designated MRZ-2a PCC-3. This 50.5±-acre site was reclassified from MRZ-2 in 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. There are no other mapped or exploited mineral resources in the City or its SOI.

### Local Aggregate Demand

According to Special Report 198, the average local annual per capita consumption rate for aggregate in the Palm Springs Production-Consumption Region is 9.6 tons. 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,

## FUTURE DIRECTIONS

Energy and mineral resources are critical to local, regional, and broader economies. The manner in which these resources are mined, farmed, or otherwise collected can cause environmental degradation, impact wildlife habitat, affect water and air quality, and contribute to adverse public health effects. Whether applied to the generation of electricity or the mining of sand and gravel, the future of both mineral and energy resources is dependent on the wise and careful use of traditional resources, and our pursuit of new and renewable options. The rising economic and environmental costs associated with energy production and use are forcing communities and countries to develop new energy strategies and policies. A community-based approach to energy problem-solving can be a good alternative to the energy crisis in California.

## GOALS, POLICIES AND PROGRAMS

**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.
>
> > **Program 1.A**: The City shall provide developers with available data on energy efficient and conserving building design and technologies. This information 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.
> > **Responsible Agency:** City Manager's Office
> > **Schedule**: Continuous

**Program 1.B**: Encourage Southern California Edison and other providers to facilitate the transfer of data, information and technologies to enhance public education on energy conservation.
**Responsible Agency**: City Manager
**Schedule**: Continuous

**Program 1.C**: 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.
**Responsible Agency**: City Manager, Economic Development, City Council.
**Schedule**: Continuous

**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.

**Program 2.A**: 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.
**Responsible Agency**: Planning
**Schedule**: Continuous

**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.

**Program 3.A**: The City shall participate in regional efforts to provide affordable, dependable electric power to its residents and businesses, including CVAG efforts and regular consultation with SCE.
**Responsible Agency**: Planning, City Council, CVAG.
**Schedule**: Ongoing

**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.

**Program 4.A** 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.
**Responsible Agency**: Planning, Building
**Schedule**: Continuous

**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.

**Program 5.A**: Facilitate the development of a community-wide and regional multi-modal path system to provide residents and visitors with alternatives to motor vehicle transportation.
**Responsible Agency:** Planning; City Council
**Schedule**: Ongoing

**Program 5.B:** The City shall make available information on ridesharing, ride-booking and SunLine Transit services available to residents and businesses, throughout the City.
**Responsible Agency**: Public Works, SunLine Transit
**Schedule**: Ongoing

**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.

**Program 6.A**: Establish a revolving loan fund for internal efficiency upgrades. Rules for use of the fund and its reimbursement will be established.
**Responsible Agency**: Public Works
**Schedule**: Ongoing

**Program 6.B:** 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.
**Responsible Agency**: Public Works, Building
**Schedule: Ongoing**

**Program 6.C:** 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.
**Responsible Agency**: Public Works, Building
**Schedule**: Ongoing

**Program 6.D:** 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.
**Responsible Agency**: Planning, Public Works
**Schedule: Ongoing**