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PURPOSE

The Air Quality Element coordinates the planning of land use, circulation, housing, and other City policies with their potential effects on air quality. The intent of this section is to assist the City and the region to meet ambient air standards set by the Federal Environmental Protection Agency (EPA) and the California Air Resources Board (CARB).

Community air quality is one of the most essential issues associated with public health and safety. The City's Air Quality Element is directly related to the type and intensity of land uses established in the Land Use Element, and the number, length, and timing of traffic trips established in the Circulation Element.

BACKGROUND

The Coachella Valley is a geographically and meteorologically unique area wholly contained within the Salton Sea Air Basin. The region is currently impacted by significant air pollution levels caused by the transport of pollutants from coastal air basins to the west, primarily ozone, and locally generated PM10. The mountains surrounding the region isolate the Valley from coastal influences and create a hot and dry low lying desert. As the desert heats up it draws cooler coastal air through the narrow San Gorgonio Pass, generating strong and sustained winds that cross the fluvial (water caused) and aeolian (wind) erosion zones in the Valley. These strong winds suspend and transport large quantities of sand and dust, reducing visibility, damaging property, and constituting a significant health threat.

The City of Rancho Mirage, in relation to other areas in Southern California, has good air quality. In the past few decades, however, noticeable deterioration of air quality has occurred due to increased development and population growth, traffic, construction activity, and various site disturbances. It is apparent that although air pollution is emitted from various sources in the Coachella Valley, substantial degradation of air quality may be attributed primarily to sources outside of the Valley.

Sources of Air Pollution

- **Combustion** – Primarily from automobile engines; the largest source of air pollution.
- **Natural sources** – Oil, seeps, vegetation, windblown dust.
- **Evaporation of organic liquids** – Used in coating and cleaning processes.
- **Abrasion** – Primarily between tires and roadways.
- **Industrial processes and construction** – Windblown fumes and particulate matter.

Pollutants

Pollutants are generally classified in two categories, primary and secondary. Primary sources and their pollutants are a direct consequence of the combustion of petroleum and other fuels resulting in the production of oxides of carbon, sulfur, nitrogen, and a number of reactive hydrocarbons and suspended particulates. Secondary pollutants are those that undergo chemical changes after emission and include ozone (O_3), peroxynitrates, nitrogen dioxide (NO_2), and chemical aerosols. Primary pollutants typically affect only local areas, while secondary pollutants disperse and travel throughout regions.

Ozone (O_3), most commonly known as smog, is a pungent, colorless, highly reactive gas that is the main component of photochemical smog. This is a daily occurrence that commonly originates from the pollution emitted primarily by mobile sources. The potential impact ozone can have on human health is significant. The majority of smog experienced in the Rancho Mirage area results from the transport of pollutants from Los Angeles, and San Bernardino Counties, as well as from other jurisdictions within Riverside County.

Nitric oxide (NO) and nitrogen dioxide (NO_2), commonly referred to as NOx, are the two most significant oxides of nitrogen for air pollution. NOx is formed as a byproduct of combustion and may be imported from air basins to the west, or may increase locally with inversion layers. Carbon monoxide (CO) is a colorless, odorless, toxic gas that is generally produced by the incomplete combustion of carbon containing fuels. Levels of concern are generally found along heavily traveled roadways during periods of limited air movement.

Particulate matter refers to small particles, both solid and liquid, such as dust, sand, metallic and mineral particles, road surfacing materials, pollen, smoke, fumes, and aerosols. These various particles are categorized by "settling" characteristics, and those that are the size of 10 microns or smaller are referred to as PM10. PM10 particles can cause serious health problems, as they can pass through the lung's filtering system, lodge deep in the lung's tissues, and directly irritate these tissues. PM10 is considered one of the most prevalent forms of pollution and health impacts in the Rancho Mirage area

Blowsand Effects

PM10 in the Rancho Mirage area comes mostly from locally generated fugitive dust. Each year, winter rains cause erosion of adjacent mountains, and water run-off produces substantial deposits of gravel and sand throughout the major drainage areas in the Valley. During the spring months and at other times of the year, persistent and strong winds carry the sand methodically southeast through the center of the Valley. This process effectively combines water and wind erosion to generate a wide range of sand and very fine dust.

Sometimes referred to as "blowsand", this natural sand migration produces PM10 in two ways: (1) by direct particle erosion and fragmentation (natural PM10), and (2) by secondary effects, such as sand deposits on road surfaces that can be ground into PM10 by moving vehicles, and re suspended in the air by those vehicles (manmade PM10).

Blowing particulate matter is deposited on fabrics, buildings, automobiles, and into respiratory systems. Extensive wind-borne soil can obliterate landscaping and dirty streets. Losses and damage occur to materials and finishes, as blowing sand can pit windshields, destroy finishes, and require additional cleaning and sweeping of exposed areas. Dust on vegetation can suppress plant growth and interfere with respiration through leaves.

Sensitive Receptors

There is widespread concern about the serious detrimental effects caused by even the most common pollutants. Ozone, particulates, carbon monoxide, and other pollutants pose a very real threat to health and property in the desert. The City's high median age implies that large portions of residents are particularly susceptible to respiratory distress from the two principal pollutants of concern, ozone and PM10. Other sensitive receptors include hospitals and nursing homes, schools, and parks.

South Coast Air Quality District

The City of Rancho Mirage is located within the portion of the Salton Sea Air Basin (SSAB), which is regulated by the South Coast Air Quality Management District (District or SCAQMD). The District is responsible for regional planning affecting a variety of issues, including air quality. The District is also responsible for development of the regional Air Quality Management Plan, which is a multi prong, multi tier effort to regulate pollutant emissions from a wide range of sources. The Plan's implementation affects City and Coachella Valley Association of Governments (CVAG) regulatory roles, and is also

meant to result in the lowering the production of ozone/photochemical smog that is transported into the Valley.

The Coachella Valley is currently designated as a serious non-attainment area for PM10. In order to bring the area into compliance, the District joined jurisdictions throughout the valley, including Rancho Mirage, and created the Coachella Valley PM10 State Implementation Plan, which mandates stringent regulation and inspection of PM10 generating activities. This plan has been approved by the U.S. EPA, and CVAG cities are nationally recognized as leaders in the management of PM10. To further facilitate the management programs established in the Plan, the District and CVAG have expanded monitoring of weather conditions and pollutant levels. Expansion of the program is expected to help local jurisdictions implement control measures and to substantiate city claims for reimbursement for major wind events.

The City and CVAG have also participated in the development and implementation of the Regional Mobility Element of the Regional Comprehensive Plan developed by the Southern California Association of Governments (SCAG). Addressing Federal and State law requiring a regional transportation plan, the plan focuses on issues of roadway congestion and air quality management.

GOALS, POLICIES, AND PROGRAMS

It is the responsibility of the District, CVAG, and the City of Rancho Mirage to monitor pollutant levels and regulate air pollution sources. With the installation of additional monitoring devices in the Whitewater River, the District is collecting data to establish a "naturally occurring" or "background" level for PM10 in the Coachella Valley. This data will allow a more meaningful estimate of manmade PM10 emissions.

GOAL 1

Preservation and enhancement of regional air quality for the protection of the health and welfare of the community as a whole.

Policy 1

The City shall coordinate and cooperate with CVAG and SCAQMD in the ongoing monitoring and management of major pollutants affecting the City and region, with particular focus on PM10.

Program 1.A

Participate, through CVAG and SCAQMD, in the monitoring of all air pollutants of regional concern on a continuous basis, and maintain records of trends in regional air quality. Provide all required reporting for inclusion in SCAQMD's annual report.

Program 1.B

Make SCAQMD's Air Quality Management manual available to encourage and facilitate self regulation to the greatest extent practical.

Program 1.C

Coordinate with developers and encourage the phasing and staging of development to assure the lowest construction related pollutant emission levels practical. Impose mitigation measures, including the use of water trucks and temporary irrigation systems, as well as other measures that will effectively limit fugitive dust emissions resulting from construction or other site disturbance.

Program 1.D

Maintain and operate a street sweeping program for public roadways to minimize litter and PM10 emissions.

Program 1.E

Encourage private development to utilize street sweeping services for private roadways.

Policy 2

The City shall promote the development of pedestrian-oriented retail centers, as well as community wide multi use trails and bike paths, dedicated bike lanes, and other desirable alternatives to motor vehicle traffic.

Policy 3

The City shall promote the appropriate and cost effective development and coordination of mass transit/shuttle service linking residential, shopping, resort, and commercial centers of the City, and participate with CVAG, the Southern California Association of Governments, and public and private service providers to improve and optimize regional transportation services.

Policy 4

The City shall encourage the use of clean alternative energy sources for transportation, heating, and cooling whenever practical.

Program 4.A

Consider the use of CNG and electric powered vehicles, as well as other alternative and/or renewable energy sources to the extent cost effective.

Policy 5

The City shall review all development proposals for potential adverse effects on air quality and require mitigation of any significant impacts.

Program 5.A

Conduct an initial study and, as appropriate, require detailed air quality analyses for all applications that have the potential to adversely affect air quality.

Program 5.B

Require projects with the potential to generate significant levels of air pollutants to incorporate air pollution mitigation in their design and operation, and to utilize the most advanced technological methods feasible.

Program 5.C

To the extent feasible, monitor the effectiveness of transportation management programs of employers, which may include coordinated carpooling, off-peak shift times, employee flex time, and other components. As future demand warrants, promote and support the development of a Park and Ride program to decrease existing and future traffic levels within the community.

Policy 6

The City shall encourage the widening of roadways and strive towards achieving a level-of-service C (see Circulation Element) to improve traffic flow, minimize idling time, and reduce air emissions.

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