CHAPTER 6: RESOURCE SUSTAINABILITY ELEMENT

Arcadia General Plan

Introduction

While Arcadia is a suburban and largely built-out city, its location at the foothills of the San Gabriel Mountains and near the San Gabriel River allows residents to enjoy expansive natural environments. The City has benefitted from the water resources in the underlying aquifers and the former aggregate mines that helped build Arcadia and the region. The City recognizes that these and other natural resources—land, air, energy—are either finite or shared, and must be used wisely to allow future generations to enjoy the quality of life that Arcadians enjoy today. Arcadia has worked to ensure compliance with State and federal legislation, and to cooperate with other agencies, to safeguard these resources and the qualities that distinguish Arcadia.

This element establishes policies that will help this generation of Arcadians use resources in a manner that protects and even enhances them for future residents. Resource issues addressed are:

- Air Quality
- Water Resources
- Energy
- Waste Management and Recycling
- Mineral Resources
- The Hillsides

Achieving Our Vision

We live in a time of ever-increasing demands on our environment. Growth in energy consumption to operate our homes and businesses, and to accommodate future development in the City, continues to rise. Water resources in Arcadia and Southern California in general are strained and will continue to be so as development and population increases in the region. Coinciding with more development and population growth, the use of automobiles for commuting will increase the consumption of fossil fuels in our region. These issues—energy, air quality, and sustainability—are three closely related issues that effect changes in the way that communities and local governments function.

Our vision for Arcadia to meet these demands in an environmentally friendly manner includes using natural resources in a sustainable manner, addressing air quality and energy issues through development practices and technologies, continuing to educate the public regarding resource conservation and sustainable practices, and enforcing local, State, and federal policies that promote best conservation practices.

The General Plan Guiding Principles provide the foundation for the City's ongoing commitment to addressing environmental concerns. The guiding principles establish that the City is committed to:

- **Balanced Growth and Development**
  The General Plan establishes a balance and mix of land uses that promote economic growth and maintain a high quality of life for Arcadia residents. Our development decisions reflect Smart Growth principles and strategies that move us toward enhanced mobility, more efficient use of resources and infrastructure, and healthier lifestyles.

- **Environmental Sustainability**
  We are committed to environmental sustainability, which means meeting the needs of the present while conserving the ability of future generations to do the same. We take actions that work toward achieving regional environmental quality goals. Arcadia leads the way to a healthy environment by providing local government support, encouraging partnerships, and fostering innovation in sustainable principles.

- **Preservation of Special Assets**
  Arcadia's quality of life is enhanced by special places and features such as Santa Anita Park, the County Arboretum and Park, a vibrant Downtown, the urban forest, attractive streetscapes, diverse parks, historic buildings and places, and nearby views of the mountains. These assets are preserved and enhanced so they continue to contribute to our City's character.

Scope of this Element

A General Plan is required to have a Conservation Element to guide the "conservation, development, and utilization of natural resources" of the City (Government Code Section 65302[d]). In Arcadia, resource issues of concern are air quality, water quality and water resource conservation, energy conservation, waste management and recycling, sustainable building practices, management of hillside resources, and management of mineral resources.

Environmental Laws and Other Factors Influencing Resource Policy

Federal and State Regulations

Several federal and State laws profoundly affect how cities in California must address resource protection. Federal legislation in the 1970s established the framework for improving air and water quality throughout the nation. In California, the legislature has enacted environmental laws and established regulatory agencies to further these directives, most notably the California Air Resources Board and Regional Water Quality Control Boards. However, significant new State legislation in 2006 and 2008 required that cities and counties specifically and comprehensively address how their long-range plans will begin to reduce greenhouse gas emissions toward statewide goals, and how plans will provide for development patterns that reduce vehicle miles traveled and promote "smart growth."

AB 32, the Global Warming Solutions Act of 2006, established a comprehensive program of regulatory and market mechanisms to achieve real, quantifiable, cost-effective reductions of greenhouse gas emissions. The law aims to reduce carbon emissions in California to 1990 levels by 2020. Specifically, AB 32 requires the California Air Resources Board to:

- Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions

According to some estimates, in the United States unsustainable building practices account for:

- *72% of electricity consumption,*
- *39% of energy use,*
- *38% of all carbon dioxide (CO_2) emissions,*
- *40% of raw materials use,*
- *30% of waste output (136 million tons annually), and*
- *14% of potable water consumption.*

Source: U.S. Green Building Council, "Green Building Research," http://www.usgbc.org. accessed July 2009.

- Adopt mandatory reporting rules for significant sources of greenhouse gases
- Adopt a plan indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions
- Adopt regulations to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas, including provisions for using both market mechanisms and alternative compliance mechanisms

SB 375, passed into law in 2008, has the goal of fostering development patterns—and more compact patterns in particular—that reduce the need to drive, thereby reducing air pollution from car exhaust, conserving water, and protecting habitat, among other benefits. This law is designed to align regional land use, housing, and transportation plans with greenhouse gas reduction targets.

Shift in Public Concern and Focus: Sustainability

Beginning in the 1960s, public awareness of environmental issues burgeoned, and followed by the passage of the federal Clean Air Act and Clean Water Act in the 1970s, the nation's consciousness was fully raised regarding how the actions of humans impact the environment. In 1997, the United Nations Framework Convention on Climate Change produced the Kyoto Protocol, which highlighted the effects of increased greenhouse gas emissions on climate change. In the 2000s, environmental concerns that had been building since the 1960s led to a focus on comprehensive approaches to environmental sustainability, approaches that look beyond resource protection and conservation to integrate land use and mobility planning into sustainability practices.

Many organizations have adopted similar definitions of "sustainability" as it relates to resource conservation and lifestyle choices. They all largely embrace the words set forth by the United Nations' Brundtland Commission:

> "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

This description recognizes that human activities and development can make lasting impacts on the environment and health, which in turn can affect productivity and the economy. Prior practices that have contributed to environmental degradation include developing on greenfield lands and on or adjacent to natural habitat, paving over porous surfaces that help recharge aquifers, building energy-inefficient buildings, and allowing cities to sprawl in a manner that requires people to get into their cars for the simplest errands.

Increasingly, Arcadia and other cities understand that sustainable land use, building, and resource consumption practices are not only a preferred but a necessary way to allow future Arcadia residents to enjoy the same, or better, quality of life than we do today. Sustainability emphasizes the integrated nature of human activities and the need to coordinate planning among different disciplines, jurisdictions, and groups.

Sustainable development practices offer environmental and economic benefits to people, agencies, businesses, and organizations that adopt them. Sustainable practices can help enhance and protect ecosystems and biodiversity, reduce the strain on local infrastructure, improve air and water quality, reduce solid waste generation and help conserve natural resources. In addition to offsetting negative environmental impacts, there are benefits that directly reward the user. In some cases, sustainable development helps reduce operating costs by conserving and using less energy and water, enhances asset value and profit, can help improve employee productivity and satisfaction, and help optimize life-cycle economic performance of a development. Sustainable development practices no longer represent just the habits and philosophies of environmental groups. Businesses and homeowners have discovered that such practices make economic sense. Sustainability planning anticipates and manages problems rather than waiting for a crisis to develop, and sustainable development strives for a balance between economic and environmental objectives.

Adopting sustainable practices does not require that people make significant changes in their lifestyles. Simple practices, such as increasing recycling, driving more fuel-efficient cars, and integrating energy savings into building construction can go far in reducing Arcadia's carbon footprint and conserving natural resources.

Photo used by permission of Flickr.com user Joe Shlabotnik

Improving Air Quality

Air is one of the essential elements of life. It is important to our health that the air we breathe is clean and free of harmful pollutants. Although air quality in Southern California has improved since the 1960s, the Los Angeles region still has some of the most polluted air in the nation. With the region's continuing economic expansion and population growth, further progress to reduce emissions will be needed both to have good local air quality and to achieve state goals regarding reduction in greenhouse gas pollutants.

According to the California Air Resources Board (CARB), more than 90% of California residents breath unhealthy air during some portion of the year. CARB estimates that the adverse health impacts of poor air quality in California will lead annually to:

- 9,400 hospital admissions for respiratory and cardiovascular disease,
- 280,00 asthma and other lower respiratory symptoms,
- 22,000 cases of acute bronchitis, and
- 1.9 million work days lost due to respiratory conditions.

Pollutants resulting from transportation sources, such as ozone, carbon monoxide, and small particulate matter (PM_{10} and $PM_{2.5}$), generally are the most significant contributors to poor air quality in cities. The pollutants contribute to major respiratory health effects such as asthma, lung inflammations, and chest pains and tightness. Diesel trucks produce large volumes of particulate matter.

Sensitive Receptors

The effects from air pollution can be significant, both in the short term during smog alerts, but also from long-term exposure to pollutants. While the majority of the populace can overcome short-term air quality health concerns, selected segments of the population are more vulnerable to its effects. Specifically, young children, the elderly, and persons with existing health problems are most susceptible to respiratory complications. These segments tend to be concentrated in schools (particularly pre-schools and nursery schools), convalescent hospitals, senior housing, and hospitals.

Carbon monoxide (CO) pollution is a localized pollutant, emitted directly from automobile tail pipes, that has a tendency to affect sensitive receptors disproportionately. CO concentrations accumulate along roadways with heavy and slow-moving traffic. Within Arcadia, residential neighborhoods and schools are located along several roadways which carry substantial traffic volumes. Particularly, residential neighborhoods abut I-210, and pockets of multifamily residential neighborhoods are located along major roadways such as Baldwin Avenue (near Santa Anita Park), El Monte Avenue, and Duarte Road.

South Coast Air Basin

Recognizing that air pollution knows no boundaries and affects the air quality of the region, the South Coast Air Quality Management District (SCAQMD) was established in 1976 as the regional agency authorized to develop and enforce air pollution control standards mandated by the federal and state Clean Air Acts. Arcadia is located within a geographic airshed called the South Coast Air Basin, which is under the regulatory jurisdiction of the SCAQMD. The basin covers an area of 6,745 square miles encompassing Los Angeles County and the non-desert portions of Orange, Riverside, and San Bernardino counties. Since Arcadia is located within the SCAQMD planning area, the City must comply with the provisions of the agency's regional air quality management plan, including the adoption of an Air Quality Element or its equivalent in the General Plan to implement appropriate air pollution control measures.

Air quality in the South Coast Air Basin has improved since the 1960s, resulting in many days of bright blue skies in Arcadia such as this. Cars and trucks, however, continue to be the primary source of pollutants.

The basin historically has and continues to exceed federal standards for ozone and small particulate matter. Although SCAQMD is moving forward in implementing control measures that aggressively seek to reduce air pollutant emissions, the basin is one of only two areas in the nation classified as "extreme" nonattainment for ozone. Many factors contribute to the poor air quality in the basin: the surrounding mountains which trap air, persistent inversion conditions, the heavy reliance on cars and trucks for transport, and the heavily urbanized character of the basin.

Local Emissions Sources

Arcadia's limited industrial base and relatively standard retail and service commercial uses means that few local pollutant sources contribute to emissions within the basin. The most significant contributors are the cars and trucks moving within the City. Automobile emissions are a primary source of air pollution within the air basin. Thus, efforts to reduce emissions from this source can result in significant improvements in air quality.

As noted above, the construction and operation of buildings are estimated to use over one-third of all energy consumed in the United States. This energy use produces carbon dioxide emissions, a primary contributor to global warming. The refrigerants used in air-conditioned buildings not only use more energy, these systems produce emissions that can deplete the Earth's ozone layer. Building materials are also a major source of air quality problems, as they may emit damaging sulfur dioxide, nitrous oxide, and particulate emissions. Building design and construction practices can be modified to reduce their consumption of energy and fossil fuels, and to reduce emissions that contribute to the region's poor air quality. These design and construction processes can be achieved without compromising safety and comfort or increasing construction and operating costs.

Air Quality

Besides a small portion of emissions resulting from waste decomposition, soil disruption, or the release of industrial chemicals, energy use (in buildings, transportation, or elsewhere) is the primary source of greenhouse gas emissions in most U.S. cities, including Arcadia.

AB 32 mandates a state-wide reduction in greenhouse gas emissions to 1990 levels by 2020, and Executive Order S-3-05 calls for greenhouse gas emissions 80% to be below 1990 levels by 2050. And while SB 375 does not specifically require that cities reduce emissions that contribute to global warming, the law promulgates land use planning approaches that can lead to emissions reductions.

Reducing Arcadia's Carbon Footprint

Calculating and determining a carbon footprint can be a useful measuring tool for determining impact on climate change. The carbon footprint can be described as the total greenhouse gases (carbon dioxide, methane, nitrous oxide, etc.) produced directly or indirectly by an entity. As noted above, the three largest emitters of carbon dioxide are buildings, transportation, and industry.[1] Arcadia's carbon footprint composition reflects that of national trends and largely is comprised of emissions from energy use (in buildings and transportation).

Energy use in residential and commercial buildings is generally for heating and cooling for comfort, lighting, and operating electronic equipment. Although emissions may not result directly from such uses, the indirect emissions resulting from electricity generation (such as coal power plants) is accounted for in the carbon footprint. Transportation emissions sources are a result of the fact that drivers whose trips originate or end in Arcadia tend to mimic traditional California driving patterns of longer travel distances for automobiles and an increase in frequency for automobile use to go to work, school, and shopping, and to run errands.

[1] Brookings Institute Metropolitan Policy Program, *The Blueprint Policy Series: Shrinking the Carbon Footprint of Metropolitan America*, p. 5.

Goals and Policies

Improving regional air quality requires regional cooperation among cities under the guidance provided by SCAQMD. However, the mandates associated with AB 32 to reduce local greenhouse gas emissions will require that Arcadia focus more attention on improvements at the local level than it has previously.

The City will continue active participation in cooperative regional efforts to reduce pollutant emissions. In 1993, the City participated with other San Gabriel Valley cities to develop the West San Gabriel Valley Air Quality Plan. This plan provides a set of 55 overall air quality policies and 16 core policies that if adopted and implemented by each member city would provide the most benefit to regional air quality. On May 8, 1993, the City adopted City Council Resolution No. 5725, accepting the principles in the area-wide air quality plan and agreeing to use the plan in the development of a local air quality program. The principles are reflected in the goals and policies below.

The City recognizes that its position as a regional employment and entertainment center attracts vehicle trips from locations where the air quality is not so good. The City recognizes its responsibility to help reduce vehicle trips, continue to encourage industries to adopt air friendly practices, and to reduce energy consumption that contributes to air pollutant emissions.

Since greenhouse gas reduction is a cross-cutting issue relevant to various policy arenas, policies that address land use, transportation, buildings, energy, waste, and ecology are incorporated throughout the General Plan. The Land Use and Community Design Element includes policies that focus compact, mixed-use development in Downtown around the Gold Line light rail station, along Live Oak Avenue and First Avenue, and other focus areas through the City. Trip reduction strategies are addressed in the Circulation and Infrastructure Element.

GOAL RS-1: Continued improvement in local and regional air quality

Policy RS-1.1: Reduce local contributions of airborne pollutants to the air basin.

Policy RS-1.2: Limit, when feasible, locating sensitive receptors near pollutant emitting sources.

Policy RS-1.3: Continue to participate in regional efforts to meet state and federal air quality standards.

Policy RS-1.4: Lower the emissions caused by motor vehicles through Transportation Demand Management strategies and land use patterns that reduce vehicle miles traveled.

Policy RS-1.5: Promote the reduction of vehicular traffic and improved efficiency of the City's circulation system (i.e. roadways) as a means to improving air quality.

Policy RS-1.6: Require projects that generate potentially significant levels of air pollutants to incorporate the most effective air quality mitigation into project design, as appropriate.

Policy RS-1.7: Promote energy-efficient building construction and operation practices that reduce emissions and improve air quality.

GOAL RS-2: Reducing Arcadia's carbon footprint in compliance with SB 375 and AB 32

Policy RS-2.1: Cooperate with the state to implement AB 32, which calls for reducing greenhouse gas emissions to 1990 levels by 2020, and Executive Order S-3-05, which calls for 1990 levels by 2020 and 80% below 1990 levels by 2050.

Policy RS-2.2: Reduce per capita greenhouse gas emissions to 15% below 2005 levels by 2020, and total municipal greenhouse gas emissions to 15% below 2005 levels by 2020.

Policy RS-2.3: Participate in regional strategies and plan to implement SB 375, and in particular, use the legislatively authorized incentives, such as grants and transportation funding and waivers to environmental assessments, to encourage infill and transit-oriented development.

Policy RS-2.4: Pursue the strategies in the Land Use and Community Design Element to encourage transit-oriented development in established focused areas.

Policy RS-2.5: Pursue the enhancement of bicycle and pedestrian infrastructure set forth in the Circulation and Infrastructure Element to help

decrease vehicle miles traveled and vehicle trips.

Policy RS-2.6: Coordinate land use, circulation, and infrastructure improvement efforts with the West San Gabriel Valley Planning Council, regional planning agencies, and surrounding municipalities.

GOAL RS-3: Promoting and utilizing clean forms of transportation to reduce Arcadia's carbon footprint

Policy RS-3.1: Develop a City fleet that to the extent feasible uses clean, alternative fuel and consists of energy-efficient vehicles.

Policy RS-3.2: Incorporate energy-efficient vehicles into the City's transit system.

PolicyRS-3.3: Educate residents on methods of sustainable driving techniques such as: reducing excessive speeding, preventing car idling, regular car maintenance for maximizing fuel efficiency, and car pooling.

Policy RS-3.4: Promote residents' and business owners' awareness and education of traffic congestion's affect on air pollution and help create voluntary programs that reduce traffic throughout the City.

Water Resources

The Los Angeles basin is a semi-arid desert environment. Water is a limited natural resource given the climate conditions and the fact that Southern California communities rely upon local groundwater supplies, as well as imported supplies from as far away as the Colorado River. As a community grows, additional water is needed to meet demand. Insufficient water supplies can limit economic development and housing growth. This section examines Arcadia's water supply and demand, conservation efforts, and the importance of planning to effectively use our limited water supply.

Local plans, such as Arcadia's Urban Water Management Plan, help with projections for future water demand, identify conservation strategies and reliable water sources, and create a contingency plan for water shortages. Through other various local plans and local, state, and federal regulations, the City already has a very strong foundation for protection of water quality and continued water conservation efforts. These include:

- ***Water Master Plan:*** Updated every five years, the City's Water Master Plan helps the City evaluate and assess operational and planning issues associated with the City's water system. Included in the Master Plan are assessments of the water system's reliability, infrastructure rehabilitation, and restoration considerations of various water facilities.

- ***Urban Water Management Plan:*** In accordance with the California Urban Water Management Planning Act (1985), the City has prepared and updates on a regular basis its Urban Water Management Plan to evaluate existing water conservation efforts and to review and implement alternative and supplemental water conservation measures.

- ***Clean Water Act (1972):*** The Clean Water Act has been the primary federal law that has helped limit water pollution. Although the act does not deal directly with groundwater issues or water quantity issues, the act has been instrumental in reducing direct pollution of waterways, financing municipal wastewater treatment facilities, and managing polluted runoff.

- ***Safe Water Drinking Act (1974):*** The Safe Water Drinking Act of 1974 has been the landmark policy for protecting public health by regulating public drinking supplies. The law is designed to protect drinking water and water sources such as rivers, lakes, reservoirs, springs, and groundwater wells.

Water Supply and Quality

The City of Arcadia is the primary provider of local water services to residents and businesses. The City owns and operates its own water distribution system, and the Public Works Services Department maintains and operates the system. The City has approximately 13,400 water service connections that serve 56,161 customers. While the City's corporate boundaries encompass slightly above 11 square miles, the City's water service area is slightly below 11 square miles. Several areas within the City, primarily at the surrounding boundaries, are served by small, private water agencies. The Sunny Slope Water Company, East Pasadena Water Company, and California-American Water Company serve an area along the western boundary. Southern California Water Company serves residents along the south and east boundaries.

The local water supply comes from three sources: 1) groundwater from wells in the Main San Gabriel Basin; 2) groundwater from wells in the Raymond Basin; and 3) imported treated surface water from the Metropolitan Water District of Southern California (MWD). The reliability of the water supply for the City of Arcadia is primarily dependent upon the management of Raymond Basin and Main Basin. Management of both basins is adjudicated.[2] Within the Main and Raymond Basins, Arcadia owns and operates groundwater wells that deliver water into the City's system. In addition, the City has the option of direct delivery of treated imported water from MWD. The City is required to purchase untreated imported surface from MWD's Upper District when they over-pump their water rights in the main basin.

The Raymond Basin, which covers approximately 40 square miles, is located in the northwesterly portion of the San Gabriel Valley and is bounded on the north by the San Gabriel Mountains, the San Rafael Hills to the west, and the Raymond Fault to the southeast. The basin is recharged by the Los Angeles River (through the Arroyo Seco Tributary), Eaton Wash, Santa Anita Wash, and by streams in the San Gabriel River watershed. Arcadia produces water from the Raymond Basin and has a "decreed right" of 5,644 acre-feet per year.[3] Based on historic management practices, the City of Arcadia will be able to produce its decreed right from Raymond Basin through approximately 2025.[4]

The Main Basin is located underneath the majority of the valley floor of the San Gabriel Valley, and is bounded by the Raymond Basin on the northwest, the base of the San Gabriel Mountains on the north, the Puente Basin on the east, and Whittier Narrows to the south. The basin is replenished by stream runoff, rainfall, and inflow from the surrounding Raymond and Puente Basins, and is also replenished with imported water

[2] Under the adjudication, a court of law determines which entity has a right to extract water and the maximum annual amount of water allowed to be pumped by each producer.
[3] An acre-foot of water equals 325,851 gallons. The average suburban household, with a house with a lawn, uses an average of 0.3 acre-feet per year.
[4] City of Arcadia 2005 Urban Water Management Plan

through the upper San Gabriel Valley Municipal Water District. The City is a retail supplier that pumps from the Main Basin and has prescriptive right to 4.2 percent of the annual yield of the basin. The City can pump more water than its annual right by paying a replacement assessment or pre-purchasing water into cyclic storage.

The 2008 Water Master Plan recommends increasing the City's groundwater pumping capacity to be able to continue to supply existing, and meet future demands with, groundwater. To achieve this, the City has identified seven future wells in the Main Basin which can be expected to add or replace 10,500 gallons per minute of groundwater pumping supply. The total groundwater will then exceed the ultimate maximum day groundwater demand with the largest capacity well out of service.

Land Use and Water Supply

Land use planning intersects with water supply throughout the planning process. When planners and decision-makers review private development projects and city-initiated plans, an understanding of water demand and water availability is critical. Senate Bill 610 and Senate Bill 221 amended State law in 2002 to improve the link between information on water supply availability and certain land use decisions made by jurisdictions. SB 610 and SB 221 are companion measures that seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to decision-makers prior to approval of specified large development projects. In addition, as a water utility, Arcadia is responsible for preparing water supply assessments for those projects meeting the statute. Water supply assessments must describe a project's water demand over a 20-year period, identify the sources of water available to meet that demand, and include an assessment of whether or not those water supplies are, or will be, sufficient to meet the demand for water associated with the proposed project, in addition to the demand of existing customers and other planned future development. If a 20-year supply is not demonstrated, the water supply assessments identify plans for acquiring additional supplies.

For Arcadia, the water supplier for SB 610 purposes is the City's Public Works Services Department. The City's Urban Water Management Plan, updated on a five-year basis, is the primary information and planning tool used to assess water supply adequacy.

Water Demand and Usage – Meeting Projected Needs

Residential customers make up the majority of water users in the City at 91 percent, with commercial, institutional and governmental services constituting the remaining nine percent. Historically, the largest commercial water user has been Santa Anita Park. Contrary to intuition, the largest landscaped areas within the City—the Los Angeles County Arboretum and Santa Anita Golf Course—are not significant users, consuming less than one percent of the total water supplied to customers.

Between 2000 and 2005, water usage by City of Arcadia water service customers increased by only about one percent, reflecting the built-out nature of the City and local conservation initiatives. New plumbing efficiency standards, landscape guidelines, and other conservation programs have also helped limit water waste. However, despite conservation efforts, the Public Works Services Department projects that water usage will increase to approximately 19,131 acre-feet annually by 2025 (up from an estimated 17,400 acre-feet in 2005, when the City had a population of 55,950).

Land use policy in this General Plan will allow for both residential and commercial/industrial business growth, with a projected population of 61,994 residents within Arcadia in 2035 (excluding the City's sphere of influence), which is five percent within the projected population for year 2025 identified in the City's Urban Water Management Plan and the level of demand for which the City has planned. Additionally, Upper San Gabriel Valley Municipal Water District, in its UWMP, identifies that replenishment water will remain adequate to meet producers that over-pump their water rights. The Main San Gabriel Basin Watermaster judgment states that producers can over-pump their water rights so long as they replenish the basin. Therefore, in order for the City to maintain a sustainable supply of potable water, conservation efforts will be implemented, as will as requiring alternative sources of replenishment water, such as treated recycled waste water.

Water Conservation Initiatives

Water conservation represents a cost-effective and environmentally sound way to reduce current and future water demand. Homeowners and business owners can take many actions to reduce water use, such as using water-conserving fixtures and appliances, fixing leaks, planting drought-tolerant landscaping, and avoiding unnecessary water use. Arcadia has been and continues to be a strong advocate for water conservation.

Following years of below-average rainfall, very low snowmelt runoff, growing water demand, and a court-ordered restriction on water deliveries from the Delta,[5] the State's water supplies are at dangerously low levels. In 2008, Governor Schwarzenegger proclaimed a statewide drought and indicated that the lack of water had created other problems, such as extreme fire danger due to dry conditions, economic harm to urban and rural communities, loss of crops, and the potential to degrade water quality in some regions. The Governor issued an Executive Order to encourage local water districts and agencies to promote water conservation. In response, the Arcadia City Council passed an ordinance in August of 2008 implementing a voluntary Water Conservation Program, with the goal of reducing water consumption in the City by ten percent.

[5] On August 31, 2007, the federal District Court placed protection on the rare declining delta smelt of the San Joaquin-Sacramento River delta. The court severely curtailed water deliveries for human use at the Delta from the months of December through June. As Southern California relies upon sources from the north to meet demands, the restricted deliveries aimed at preserving delta smelt habitat can be expected to affect water transfers to Southern California.

The Municipal Code addresses water conservation through a Water Conservation Plan that contains regulations and penalties for overuse of water during drought times. The plan establishes basic prohibitions such as limiting washing of sidewalks, walkways, driveways, or parking areas; requiring use of recycled water in decorative fountains; requiring restaurants to serve drinking water only to customers who expressly request it; and restricting irrigation of lawn, landscape, or other turf areas to specific hours. The City Council can order customer percentage curtailment provisions that restrict water usage by customers to a percentage of the amount used during a prior base period.

To further assist the community in conserving water, the City has provided free landscape and irrigation audits to residents and businesses. Landscape irrigation can use approximately half of home water use, and inefficient irrigation practices can waste up to 30 percent of the water applied, making landscape irrigation an excellent area to examine in trying to find ways to conserve water. The City has also moved forward with considering the use of "tiered water-rate structure," which could used to penalize large water consumers by charging more per gallon once users cross certain thresholds.

Drought-tolerant Landscaping

Landscaping and yards in Southern California consume millions of gallons of water. Californians tend to use grasses and plants more suited to humid climates. A typical California lawn made up of a cool-season turf grass can require multiple times more water than native plants.

A simple yet effective sustainable way of re-thinking landscaping is to utilize drought-tolerant landscaping. In Arcadia, single-family homes, even those on small lots, can cut down on water consumption by installing drought-tolerant plants and installing smart irrigation controllers. Planning and incorporating drought-tolerant landscaping can help reduce the amount of water needed for maintenance and the amount of waste (yard clippings) produced. Appropriate design techniques, such as selecting indigenous or exotic drought tolerant plants, proper soil preparation, garden layout, and installing efficient irrigations systems, can be calibrated to balance aesthetic and use needs of landscaping with the ability to conserve water. This system of drought-tolerant planting techniques is called *xeriscaping*. Xeriscaping means simply landscaping with slow-growing, drought-tolerant plants that use limited water and produce limited yard trimmings. Xeriscape landscapes can:

- Lower the demand of Arcadia's reliance of purchasing expensive replacement water,
- Reduce the volume of plant trimmings which must either be composted or otherwise managed
- Reduce the labor needed to maintain a landscape
- Require less fertilizer and fewer pest control measures than traditional landscapes

Although drought-tolerant landscaping approaches are already encouraged in the City's single-family residential design guidelines, these approaches can be applied to multifamily homes and to commercial and industrial developments in the City, as well as to City properties, and to public landscaped areas such as medians. All types of drought-tolerant landscaping materials should be considered for both public and private plantings, this includes trees, ground covers, and native grasses. The City is committed to replace existing median turf and inefficient landscaping with drought tolerant landscaping and drip irrigation. In addition, the City is cooperating with SCAG to implement a State-mandated ordinance to impose the efficiency of landscape irrigation. The model ordinance was required to be implemented by January 1, 2010, and the City of Arcadia has complied with this mandate.

Permeable Surfaces

In most non-urban landscapes, rainwater that that falls upon the natural earth percolates through the soils down into groundwater basins and aquifers. However, in developed cities like Arcadia, the ground is virtually covered with non-permeable surfaces such as concrete, asphalt, building roofs, and other surfaces that prohibit natural drainage from occurring and disrupt the recharge of groundwater basins.

Changes in Arcadia's development practices can help create a City infrastructure that resolves this issue. Parking lots and other paved areas can utilize permeable surfacing materials that facilitate groundwater recharge. When it rains, water falling onto permeable surface can be retained and percolated back into the soil, recharging groundwater basins. These permeable surfaces can also help with pollutant control by filtering away potential pollutants, and minimizing runoff in gutters and storm drain systems. (Read how non-permeable surfaces contribute to water pollutants in the Stormwater and Urban Runoff Management section that follows.) The City can analyze the feasibility of incorporating this practice into new City developments and facilities, and eventually determine if these practices can be adaptable to private development.

Recycled Water

Recycled water (also referred to as reclaimed water) represents an important resource that can be used to offset use of potable water for non-potable purposes, particularly for landscape irrigation. Recycled water is domestic wastewater that is purified through primary, secondary, and tertiary treatment. Using alternative sources such as reclaimed water can help limit the need of purchasing and importing outside water sources. The potential beneficiaries of alternative water resources such as reclaimed water are large-volume irrigation uses such as parks, sports fields, and golf courses, of which Arcadia has many, many acres (see the Parks, Recreation, and Community Resources Element). Reclaimed water can also be considered for other irrigation purposes such as street median landscaping and public facilities landscaping.

Potential sources of recycled water supply include the City of Los Angeles-Glendale Water Reclamation Plant (near the city of Glendale) and the

In recognition of long-term water conservation needs, the City's Urban Water Management Plan defines many demand management measures that will be pursued to reduce water use:

- Water survey programs for single-family residential and multifamily residential customers
- Residential plumbing retrofit program
- System water audits and leak detection and repair
- Large landscape conservation programs and incentives
- Participation in a high-efficiency washing machine rebate program and ultra-low-flush toilet replacement program
- Public information programs about water conservation
- School education programs
- Conservation programs for commercial, industrial, and institutional accounts

Sanitation Districts of Los Angeles County San Jose Creek Water Reclamation Plant and Whittier Narrows Water Reclamation Plant. The Whittier Narrows facility appears to be the preferred water reclamation plant to supply recycled water to Arcadia based on distance, water quality, availability of supply, and estimated cost.

The City previously has not used recycled water due to the lack of infrastructure and pipelines from the treatment plants to the City's service area. In a 2006 Recycled Water Feasibility Study, the City explored options and opportunities to establishing recycled water infrastructure. The report anticipated that a portion of the future water demands within Arcadia's commercial and industrial and government sectors can be met through use of recycled water. Potential customers for recycled water were identified to include all City parks, the Arboretum and Botanic Gardens, the Civic Center athletic field, the Santa Anita and Par-3 golf courses, Santa Anita Park, a large local car wash business, all schools within Arcadia, and all street medians.

The estimated cost of recycled water infrastructure to serve Arcadia was estimated, in 2006 dollars, to be approximately $42,300 per acre-foot per year more than potable water service, which appears to be a significant disincentive to use this resource. The City recognizes that continued efforts to promote recycled water use will require regional, State, and federal funding for infrastructure and services, as well as possibly water pricing approaches for groundwater and imported supplies that make recycled water more affordable.

Drinking Water Quality

The State and federal governments establish standards for drinking water quality, and all water purveyors in California are required to perform annual testing and reporting to customers. The City of Arcadia and the water it supplies comply with all federal and State drinking water standards.

Storm Water and Urban Runoff Management

Urban runoff consists of water that has drained from non-porous surfaces in dense urban areas; these surfaces include roads and freeways, roofed structures, and parking lots. Any form of precipitation and/or irrigation (for example, rainfall, sprinkler systems overflowing onto sidewalks, car washing on driveways) can scour these surfaces and wash away the materials on top, carrying them into the storm drain system. Since much of the urban terrain in Arcadia is non-porous and does not have the ability to filter or eliminate contaminants, these contaminants are carried in the runoff that flows into the local and regional storm drain systems and eventually into the Pacific Ocean. Suspended sediment is the primary pollutant in this urban runoff.

State and federal regulations work to protect watersheds and recharge areas. In particular, the Clean Water Act provides control over urban run-off and storm water discharges through the National Pollutant Discharge Elimination System (NPDES). The NPDES permit helps to protect public

health and aquatic life. At the local level, cities must ensure provision of vegetated swales, buffers, and infiltration areas in new development projects. Additional approaches include designing sidewalks, roads, and driveways utilizing alternative materials to minimize impervious surfaces.

The NPDES permit program controls water pollution by regulating point sources that discharge pollutants. In Arcadia, NPDES permits are issued by the Regional Water Quality Control Board, Los Angeles Region. The NPDES program coordinates the actions of all incorporated cities within this region (except Long Beach) and the Los Angeles County government to regulate and control storm water and urban runoff into Los Angeles County waterways and the ocean.

In support of the NPDES permit and the obligation to keep waterways clean by reducing or eliminating contaminants from storm water and dry-weather runoff, the City is required to implement or require the implementation of the most effective combination of best management practices for storm water/urban runoff pollution control. The City has a storm water education program, an aggressive inspection team that issues notices of violation for water quality violations, and requires the use of best management practices in many residential, commercial, and development-related activities to reduce runoff.

Goals and Policies

Arcadia is committed to a balanced approach to managing its water resources, with two key emphases: 1) promulgating conservation programs and incentives that will result in the City achieving a 20 percent reduction in per capita water use by 2020, and 2) ensuring that long-term supplies are adequate foremost for established uses, and that new projects are required to meet the requirements of SB 610 water supply assessments as applicable.

The City will also investigate ways in which recycled water can help meet water demands. Recycled water can be used directly for landscaping and other applications that may be found acceptable over the long term. Other applications may include using recycled water as a source for groundwater recharge or using recycled water by blending it with water flowing from the San Gabriel Mountains and water provided by MWD. In all conditions, water will be managed to provide Arcadia users with high-quality potable water that meets or exceeds federal and State standards.

GOAL RS-4: Wise and sustainable water use practices that respond to and support the needs of City residents and businesses

Policy RS-4.1: Continue to participate in regional programs that protect water resources in Arcadia.

Policy RS -4.2: Address state-of-the-science approaches to water supply, demand, and conservation as part of regular updates to the City's Urban Water Management Plan, including the possibility of using reclaimed water as part of a groundwater basin recharge strategy.

Policy RS-4.3: Require that applications for major new development projects address the adequacy and reliability of water supplies as described in SB 610.

Policy RS-4.4: Maintain a high level of groundwater recharge capacity within formal recharge facilities belonging to the City.

Policy RS-4.5: Analyze the City's current water conservation programs (such as plumbing retrofits, public information programs) to expand, as necessary, the effectiveness of City efforts to reduce water consumption.

Policy RS-4.6: Implement aggressive public and private programs to reduce water use and water waste associated with landscape irrigation, including the planting of native and drought-tolerant plants, use of efficient irrigation systems, and collection and recycling of runoff.

Policy RS-4.7: Cooperate with the efforts of other cities and agencies and pursue City-sponsored ventures to make use of recycled water more cost effective. Prioritize establishment of recycled water infrastructure and services and implement the use of recycled water at schools, parks, at City facilities, and other potential irrigation, commercial, or industrial use sites.

Policy RS-4.8: Explore how private on-site storm water capture systems can be designed and maintained to maximize protection of surface water quality and groundwater basin recharge capabilities.

Policy RS-4.9: Incorporate Low Impact Development (LID) strategies into new construction and city projects.

Policy RS-4.10: Fulfill the City's responsibilities relative to the requirements of the County's NPDES permit program by enforcing regulations aimed at

reducing groundwater and urban runoff pollution.

Policy RS-4.11: Maintain contingency plans for continuing water service in the event of large-scale emergencies.

Policy RS-4.12: Require the installation of efficient irrigation systems (e.g., drip irrigation, soil moisture sensors and automatic irrigation systems) which minimize runoff and evaporation, and which maximize the water that will reach the plant roots.

Policy RS-4.13: Investigate the efficacy and long-term benefits—both environmentally and fiscally—of using pervious pavement systems.

Policy RS-4.14: Consider requiring the plumbing retrofit of older existing buildings with water-efficient plumbing fixtures when the unit is sold.

Energy Use

When we drive our children to school, turn on the stove to cook dinner, or turn on the air conditioner to cool down the house on a warm sunny day, we use energy. That energy can come from a variety of sources, but in the early 2000s, fossil fuels accounted for the most common source. Beginning with the oil crisis of 1973, Americans became abundantly aware of the costs—both monetary and environmental—associated with reliance on fossil fuels. However, energy generation and consumption practices were slow to change until heightened public awareness in the 2000s of the relationship between energy use and climate change. Given the nonrenewable and high-emission nature of fossil fuels, California consumers and power providers have grown increasingly committed to evaluating and using alternative energy sources and adopting energy conservation strategies.

Energy conservation is the practice of decreasing the quantity of energy used while achieving a similar outcome of end use. Energy conservation has the added benefit of decreasing pollutants released into the air and preserving natural resources. Individuals and organizations have adopted practices that conserve energy to reduce their energy costs and promote environmental values, and businesses now recognize a public relations benefit to pursuing sound energy policies.

Renewable Energy

Although using renewable energy may not necessarily decrease the quantity of energy used, harnessing renewable energy is a method of slowing down consumption of non-renewable fossil fuels by supplanting energy sources with clean and renewable sources. Renewable energy is produced from natural processes such as sunshine, wind, flowing water, biological processes, and geothermal heat flows. Renewable energy sources can be replenished within a relatively short time period and may be used directly or converted to create other more convenient forms of energy. Examples of direct use include solar ovens, geothermal heating, and water-wheels and windmills. Examples of indirect use which require energy harvesting are electricity generation through wind turbines or photovoltaic cells, or production of fuels such as ethanol from biomass.

While generally not cost effective at the local level, with the exception of private solar-energy sources, those utilities that do provide energy to Arcadians can utilize renewable sources. New technologies can be anticipated to evolve that will allow local energy sources to supply power to individual homes and businesses at reasonable cost. The City's role will be to ensure that local development regulations do not hinder use of appropriate technologies that benefit individuals and the broader community.

Renewable Transmission Project

Energy developers are planning new "wind farms" in areas throughout California. The project, known as the Renewable Transmission Project, would help meet the demand for more renewable power by connecting various wind farms throughout the State into the existing electricity grid. Although Arcadia's electricity provider does not have an ownership interest in any of the proposed wind farms, the electricity provider is required to construct extensions of its transmission system to these proposed wind farms so that wind power can be delivered into the State's energy grid.

Solar Power

Energy harnessed from sunlight is a clean, reliable, and renewable energy. Solar power systems can range in size and power output from a small system outfitted on residential structures to a system that powers a commercial business. Arcadia, as with many areas in Southern California, typically has a mildly arid climate with sunny days throughout most of the year. The weather, combined with objectives to reduce dependence on foreign oil and decrease the use of non-renewable fossil fuels, makes Arcadia a place well suited for solar power use.

California Solar Initiative

California's Solar Initiative, apart of California's campaign for promoting solar power, offers solar rebates to customers who utilize solar energy systems. Southern California Edison, the electric utility provider in Arcadia, participates in incentive programs to reward both residential and commercial users installing solar energy systems.

Million Solar Roofs

In an effort to make California the nation's leader in solar energy, California's Million Solar Roofs Plan aims at have one million solar roofs installed throughout California by the year 2018. In establishing a million solar roofs, the State estimates that 3,000 megawatts of additional clean energy and a reduction of greenhouse gasses by three million tons will result. The plan assists customers of investor-owned and municipal-owned utilities with obtaining incentives for installing solar roofs, expands the number of consumers who can receive credits for excess power produced by a solar system, and requires a developer of more than 50 new single-family homes to offer the option of a solar energy system to all customers beginning January 1, 2011.

Solar Rights and Solar Shade Acts

The California Solar Rights Act prohibits a public entity from receiving State grant funding or loans for solar energy systems if it places unreasonable restrictions on their installation. This law also restricts any covenants, conditions, and restrictions (typically enforced by homeowners associations) that excessively limit or prevent an individual from installing a solar system on his or her home.

The State has also adopted the Solar Shade Control Act, which prohibits shading of solar collectors from tree growth occurring after a solar collector has been installed. It applies to solar systems for electric generation, water heating, and space heating or cooling.

Energy Conservation

Conserving energy through efficient energy use brings environmental and economic benefits to residents and businesses. Conservation can be encouraged by educating and changing user behavior, rewarding use of energy-saving appliances and light bulbs, and employing building design and construction approaches, such as incorporating natural cooling designs and proper insulation, to help dramatically reduce the use of electric power and natural gas.

Arcadia's enforcement of California building code energy performance requirements helps integrate energy conservation efforts into current building practices. State building codes require, for example, minimum ceiling, wall, and raised floor insulation, and minimum heating, ventilating, air conditioning and water heating equipment efficiencies. The City has the option of putting into place standards that exceed those of the State.

Electricity in Arcadia is provided by a private utility company. The City supports the private efforts that the utility provider has undertaken to conserve energy. Arcadia's utility provider takes part in numerous public education and information programs that describe the economic and environmental benefits of energy conservation for its customers. In addition, Southern California Edison has sponsored programs that help increase the use of energy-saving light bulbs and Energy Star appliances, and has also implemented rebate programs to provide further incentives to conserve energy.

Sustainable Buildings

As described earlier, inefficient buildings result in significant direct and indirect adverse environmental effects and represent one of the largest sources of excessive energy use in Arcadia. Cities throughout the country have examined ways to reduce these impacts, including application of "green" or sustainable building standards that follow tested methodologies, such as LEED[6] or locally developed approaches. Sustainable buildings are buildings that are designed, constructed, and operated to incorporate water conservation, waste minimization, pollution prevention, use of recycled and efficient materials, and energy efficiency. Sustainable building practices have become more prominent in the 2000s, with sustainable practices including buildings that incorporate water-efficient plumbing and landscaping, and buildings that re-use and incorporate recycled building materials into project design. Most importantly, sustainable building practices have comprehensively addressed energy use. Examples of energy-saving practices include designing buildings that utilize their sites and orientation for natural heating, cooling, and even lighting options; incorporating energy-efficient HVAC and other appliances into

[6] LEED, which stands for Leadership in Energy and Environmental Design, is an internationally recognized green building certification system developed by the private U.S. Green Building Council. Others exist as well.

buildings; designing a building to and for maximum insulation and climate control through material use and window placement; and incorporating renewable energy sources such as solar panels and small wind turbines.

In addition to the immediate environmental benefits sustainable building produce, sustainable buildings also result in such benefits as reduction in building operating costs, minimized strain on local infrastructure, and contribution to overall quality of life of building occupants. Some commercial building owners have cited that, all other factors being equal, sustainable buildings command higher leases.

Goals and Policies

As an integral part of its sustainable development approach, Arcadia will support efforts of energy service providers to utilize renewable energy resources and reduce consumer energy use, and the City will integrate energy efficiency considerations into the development design process. The City also recognizes the benefits of "green" building practices, and will further analyze ways to incorporate these practices into both public and private developments.

GOAL RS-5: Wise and creative energy use that incorporates new technologies for energy generation and new approaches to energy conservation

Policy RS-5.1: Support State agencies' efforts to adopt regulations that can increase the thermal integrity of buildings, increase the efficiency of combustion equipment, and reduce building thermal loads through controls or automation.

Policy RS-5.2: Support the development and use of alternative energy technologies for regional and local use. Remove barriers to use of individual energy systems that are consistent with City aesthetic and design objectives.

Policy RS-5.3: Require that all new development meets or exceeds the state and local energy conservation requirements.

Policy RS-5.4: Investigate the options for adopting local "green" building standards that address energy use in particular. Consider having City facilities serve as a model for energy efficiency by incorporating state-of-the-art energy features in new public buildings and significant remodeling of existing buildings.

Policy RS-5.5: Support State legislative initiatives to revise utility rates in a manner that provides incentives for energy conservation and provides funding for research and development of alternative energy sources.

Policy RS-5.6: Reduce the amount of energy consumed by City operations, and assist residents and businesses in reducing their energy consumption by:

- emphasizing fuel efficiency in the acquisition and use of City-owned vehicles and equipment;
- periodically reviewing energy consumption in City buildings and implement programs to reduce energy use; and
- increasing public awareness of energy conservation techniques through the public dissemination of conservation information.

Policy RS-5.7: Promote the installation of heat recovery and co-generation facilities, where feasible, in new industrial and large commercial developments.

Policy RS-5.8: Promote innovative building, site design, and orientation techniques which minimize energy use.

Policy RS-5.9: Facilitate the provision of energy-efficient modes of transportation and fixed facilities which establish transit, bicycle, and pedestrian modes as viable alternatives.

Policy RS-5.10: Support efforts at the State and federal levels relative to the funding of research and the development of renewable/reusable energy sources.

Policy RS-5.11: Support efforts of the City's electricity provider that increase energy conservation in all households and businesses.

Policy RS-5.12: Adopt green building guidelines and/or incentives, which may include assessing green building techniques as a formal stage of City design review and developing a green building ordinance or program that addresses both new and existing buildings.

Policy RS-5.13: Promote the application of active solar energy systems in residential development by facilitating, where possible, the efforts of federal and state entities in the allocation of cost incentive programs.

Policy RS-5.14: Explore the possibility of identifying City facilities that can accommodate solar installations.

Policy RS-5.15: Educate the public on sustainable building practices and the environmental and economic benefits they offer.

Policy RS-5.16: Set an example in the design and operation of new civic buildings by implementing LEED certifiable or similar building standards.

Policy RS-5.17: Investigate providing incentives for LEED certifiable or equivalent for new and/or retrofitted private commercial and industrial buildings.

Waste Management and Recycling

Waste management and recycling are essential services for Arcadia. Not only do they serve the immediate purpose of disposing the waste generated by homes and businesses, but waste management and recycling broadly serve to reduce the volume of trash entering landfills and to reuse resources such as glass and paper. Locally, vehicles used to haul waste can generate emissions that affect our air quality. Regionally, the disposal of waste consumes vast amounts of open land to serve as landfills to store waste. Improperly disposed of materials, such as household hazardous waste, can end up in landfills and seep into our groundwater. On a large scale, continual consumption of products requires energy and raw materials to fulfill our needs.

Arcadia has prepared and adopted a plan which sets waste recycling, reduction, and diversion strategies required of contracted waste haulers, and the City has consistently been successful in meeting its goals for diversion, with a high of 74 percent in 2003. This has been achieved despite the fact that the City has not required separation and collection of recyclable materials and landscaping waste for commercial users (although waste haulers do perform some separation at regional materials sorting facilities).

The Circulation and Infrastructure Element, Waste Management section, contains a parallel and much more detailed discussion of Arcadia's recycling programs, including hazardous household wastes and e-waste. Refer to that element for in-depth descriptions and additional goals and policies.

Recycle, Reduce, Reuse, and Rethink

Consumers traditionally have been encouraged to consider three Rs in their purchasing and waste disposal practices: recycle, reduce, and reuse. This rubric can be expanded to include residential and commercial building practices and to incorporate a fourth R: rethink. Given Arcadia's built-out character, any new development will necessarily involve the demolition of existing structures and infrastructure. What was formerly considered waste material—wood, asphalt, steel pipes, and copper wire, for example—can find a new life and use if developers are required to divert a portion from landfills. Further, by rethinking how materials may be reused and how sustainable materials can be incorporated into building design and construction, developers may achieve economies in new projects.

Goals and Policies

Can the City achieve more? Efforts to reduce waste must be supported by the community at large. Although the City can do its part to change its own operating and purchasing practices to reduce waste and promote recycling, participation from residents and businesses of the community is essential. Continuing and expanding local programs that educate the community and promote awareness of waste diversion and recycling is

critical. Continual coordination with the City's waste hauler and other local agencies to provide easy access to disposal sites and convenient methods for recycling will also work toward implementing the four Rs.

GOAL RS-6: A higher level of waste reduction and recycling city-wide relative to 2009 achievements

Policy RS-6.1: Pursue efforts that increase composting and recycling, and reduce waste generation, focusing especially on large commercial and industrial waste producers.

Policy RS-6.2: Reassess the City's Source Reduction and Recycling Element (California Integrated Waste Management Act) as needed to determine whether new goals or programs are required.

Policy RS-6.3: Consider in the contracting of waste haulers their ability, commitment, and proven record of recycling and composting waste.

Policy RS-6.4: Adopt City guidelines for City goods purchases that incorporate consideration of packing and shipping materials used.

Policy RS-6.5: Continue and expand public education and outreach programs regarding reduction and recycling of materials.

Policy RS-6.6: Pursue efforts to expand the use of rubberized asphalt on City streets and at City facilities.

Mineral Resources

Per the California Surface Mining and Reclamation Act of 1975 (SMARA), all cites are required to consider mapped mineral resources designations (as defined by the State Mining and Geology Board) in long-term planning efforts. This analysis is intended to assist in the management of lands that have statewide and regional significance with regard to identified mineral deposits, and to guard against compromising the long-term availability of these resources.

The State Mining and Geology Board classifies lands in California based on the availability of mineral resources. Four mineral resources zone (MRZ) designations have been established for the classification of sand, gravel, and crushed rock resources:

MRZ-1: Adequate information indicates that no significant mineral deposits are present or likely to be present.

MRZ-2: Adequate information indicates that significant mineral deposits are present or there is a high likelihood for their presence, and development should be controlled.

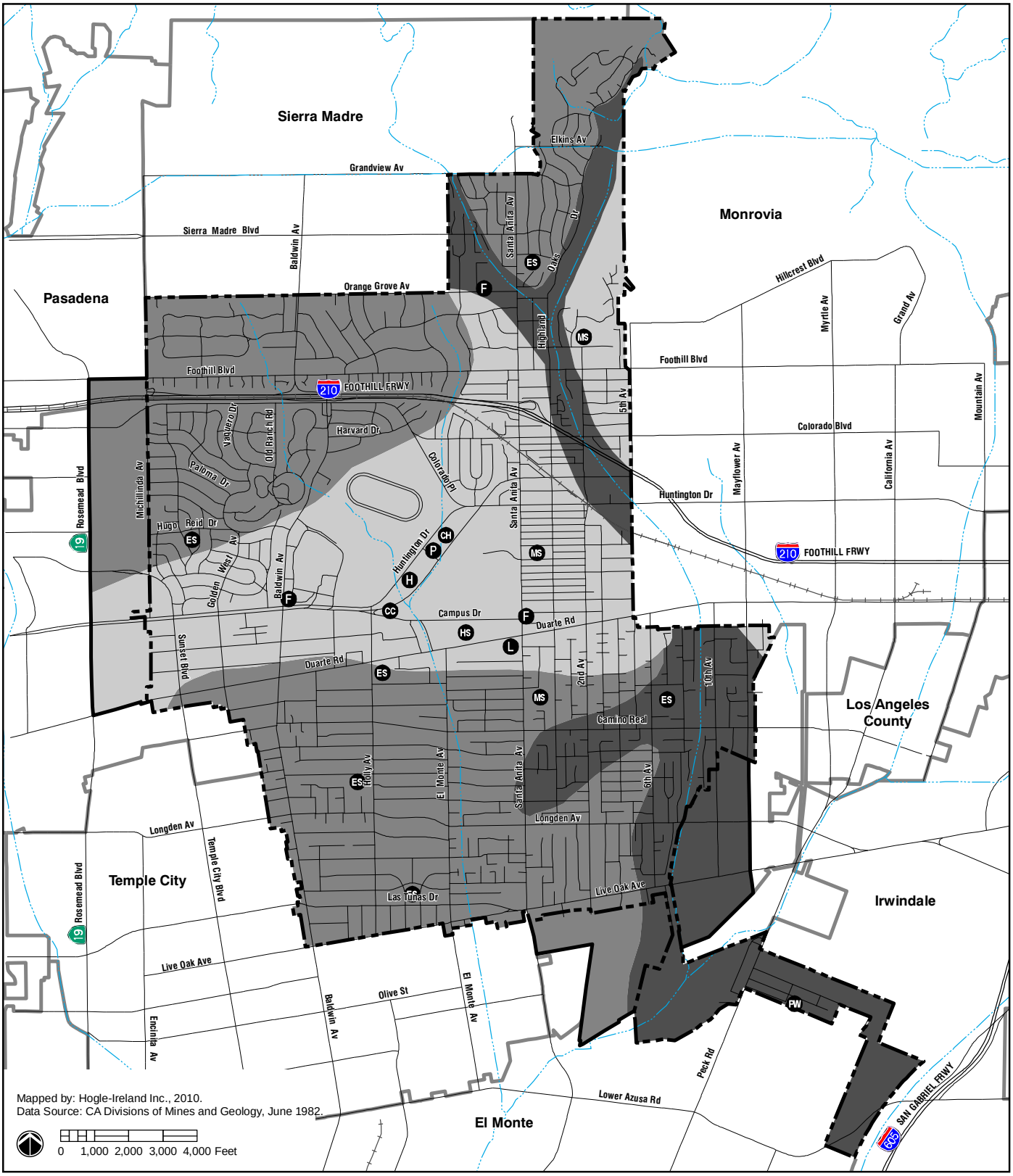
MRZ-3: The significance of mineral deposits cannot be determined from the available data.

MRZ-4: There is insufficient data to assign any other MRZ designation.

In Arcadia, the State has defined three different mineral resource zones: MRZ-1, MRZ-2, and MRZ-3 (see Figure RS-1). Within the designated areas, four sites are undeveloped:

- The flood control wash and infiltration basin at the northern portion of the City
- The former sand and gravel excavation site at the southeast corner of the City (known historically as the Rodeffer site and now as the Lower Azusa Reclamation area)
- Peck Road spreading basin
- Livingston-Graham sand and gravel extraction site, virtually all of which is located in the adjacent city of Irwindale

Of these four sites, only the Livingston-Graham sand and gravel extraction site is available for future mining activity, and this would occur in Irwindale, not Arcadia. The two spreading basins provide vital flood control and groundwater recharge functions, and are designated for these continued uses. The Lower Azusa Reclamation site is subject to ongoing reclamation activities (filling with inert construction debris and similar materials) and designated *Commercial/Industrial* in the Land Use and Community Design Element.



Mineral Resource Zones

- MRZ-2
- MRZ-3
- MRZ-4

Critical Facilities

- CC Community Center
- CH City Hall
- PW Public Works Department
- P Police Station
- F Fire Station
- H Hospital
- L Library
- ES Elementary School
- HS High School
- MS Middle School

Base Map Features

- City Boundary
- Sphere of Influence
- Freeway
- Railroad
- City Road
- Water Feature

FIGURE RS-1: MINERAL RESOURCE ZONES

Goals and Policies

Because no properties in Arcadia will be subject to mining activities in the future, the City's focus is on continued reclamation of prior quarries and protection of properties in Arcadia from mining operations in adjacent communities.

GOAL RS-7: Productive reuse of former mineral extraction sites in Arcadia, and support of adjacent jurisdictions' continued extraction operations

Policy RS-7.1: Facilitate the reclamation of mined lands in Arcadia to a usable condition that is readily adaptable for long-term planned land uses.

Policy RS-7.2: Support the production of aggregate materials that benefit the region, provided such activities appropriately consider watershed, wildlife, range and forage, aesthetic enjoyment, and other environmental factors.

Policy RS-7.3: Work with adjacent jurisdictions to minimize any adverse environmental effects and potential public safety hazards associated with mining operations along Arcadia's borders.

The Hillsides

Arcadia has few remaining natural open space resources, with the exception of lands within the San Gabriel Mountain foothills. The foothills are an integral part of Arcadia's identity: they provide environmental, wildlife habitat, aesthetic, and recreational value. These undeveloped hillside areas create a scenic backdrop to the City. Arcadia's Wilderness Park provides a place where residents can enjoy local wildlife habitat, hike into the Angeles National Forest, or enjoy the view of the San Gabriel Valley below. The Santa Anita Basin spreading grounds provide flood protection and groundwater recharge functions. The neighborhoods nestled into the hillsides create quiet refuges for the people who live there.

The high-fire-hazard nature and challenging terrain of the foothill environment has led to adoption of numerous development safety requirements and regulations. The Safety Element addresses these regulations with the goal of minimizing environmental hazards.

The Wilderness Park and County-owned resource area will continue to exist and provide areas for natural habitat and wildlife refuge. However, there remains a few sizable privately owned hillside parcels with natural vegetation, stream channels, wildlife corridors, and panoramic views. Development of these remaining hillside properties has long been considered economically infeasible due to the physical and regulatory challenges they present. However, with limited vacant land available in Arcadia for new housing, coupled with Arcadia's attractiveness as a residential community, the challenges might be overcome as property values increase.

The non-public hillside properties are designated for low-density residential use only. Both City regulations and private development covenants have worked to minimize environmental impact in the hillsides associated with residential development. Zoning regulations place limits, for example, on grading and lot coverage. State fire code requirements, enforced through the City's building code, require appropriate landscaping. Local homeowners associations have restrictive covenants (unenforceable by the City but vigorously applied by the association boards) that result in development compatible in scale with the hillside environment. The City anticipates that these regulations and practices will continue to provide the protections necessary.

Goals and Policies

With regard to public properties, Arcadia's objective is to preserve natural lands for the enjoyment and use by people and wildlife. On private hillside properties, Arcadia will continue to use zoning and other Municipal Code regulations to ensure sensitive residential development practices, and will support the efforts of homeowners associations to provide compatible and respectful development.

GOAL RS-8: Balanced use of hillside properties that respects the natural environment and private property rights

Policy RS-8.1: Determine the environmental sensitivity of individual hillside sites using site-specific investigations, information in the General Plan EIR, and other applicable information sources and regulatory documents. Incorporate the findings into conditions of approval for individual development projects.

Policy RS-8.2: Require detailed biological and other appropriate environmental resource and hazard studies for properties within the foothills, and ensure that appropriate mitigation is employed to avoid and/or minimize impacts.

Policy RS-8.3: Investigate the value and feasibility of establishing hillside areas within Arcadia as habitat mitigation/banking sites.